

# DE-1002

Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 2x PCI / 2x PCIe Expansion



## Overview

 CONTACT

DE-1000 Series Fanless Embedded PC supports Intel® Bay Trail platform, integrated with Intel® Atom™ E3845 Quad Core 1.91 GHz processor. Delivering the excellent quad-core processing power at only 10 watts power consumption, DE-1000 series is definitely an ideal solution for ultimate computing performance, energy efficiency, and superior reliability. Designed with rich I/O, high flexibility and easy expansion capabilities, DE-1000 series is ideal for diverse industrial applications. It offers multiple I/O extension modules, including up to 2x PCI or 2x PCIe x1 slot for flexible integration of a variety of add-on cards; 2x mini-PCIe slot for GSM and WLAN wireless communication; it also supports three storage expansions: 2.5" SATA HDD, CFast and SIM card. Supporting power ignition function, DE-1000 series can meet various applications, such as: surveillance, in-vehicle, and industrial automation applications, etc. DE-1000 series supports wide temperature range from -25°C to 70°C, wide range 9~48VDC power input, power protection, cable-less and one-piece housing design, as well as compliant with 50121-3-2 certification for rail transportation applications; it is designed to ensure stable operation in robust and harsh environments.

### Key Features

- Onboard Intel® Atom™ E3845 Processor Quad Core, 1.91GHz
- 2x DDR3L SO-DIMM Max. up to 8GB
- Dual Independent Display from 1x DVI-I and 1x DisplayPort
- 2x Intel® GbE Port, Support Wake-on-LAN and PXE
- 1x USB 3.0, 4x USB 2.0
- 6x RS232/422/485 Port with 5V/12V Power
- 4x Isolated DI, 4x Isolated DO
- 2x 2.5" SATA SSD/HDD Bay, 1x mSATA (Shared by Mini-PCIe Socket), 1x CFast Card and 1x SIM Card Socket
- 9~48VDC Power Input, Support AT/ATX Mode
- 2x Mini-PCIe Slot for Wi-Fi, GSM, or I/O Expansion
- 2x PCI or 2x PCIe x1 Expansion
- Power Ignition
- EN50121-3-2 Certified/ EN62368-1

### Certifications



## Specifications

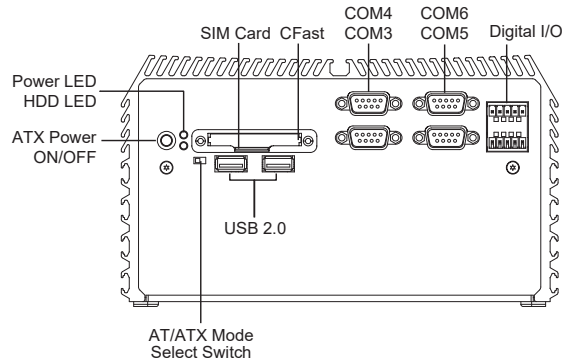
Model Name	DE-1002
<b>System</b>	
Processor	• Onboard Intel® Atom™ Processor E3845 Quad Core, 1.91 GHz
BIOS	• AMI 64Mbit SPI BIOS
Memory	• 2x 204-Pin DDR3L 1066 / 1333MHz SO-DIMM (un-buffered and non-ECC), Max. up to 8GB
<b>Graphics</b>	
Graphics Engine	• Intel® HD Graphics Max. 792 MHz
Dual Display	<ul style="list-style-type: none"> <li>• 1x DVI-I and 1x DisplayPort (2560 x 1600)</li> <li>• 1x DVI-D and 1x VGA (with optional split cable)</li> <li>• 1x DisplayPort and 1x VGA (with DVI-I to VGA adapter)</li> </ul>
<b>Storage</b>	
SSD / HDD	• 2x 2.5" SATA HDD Bay
mSATA	• 1x Internal mSATA Slot (Shared by Mini-PCIe Socket)
CFast Socket	• 1x External CFast Socket
SIM Socket	• 1x External SIM Card Socket
<b>I/O</b>	
Connector	• 1x DVI-I
DisplayPort	• 1x DisplayPort
LAN	• 2x GbE LAN Port (Intel® i210, Support Wake-on-LAN and PXE)
Mic-in	• 1x Mic-in and 1x Line-out (Codec: Realtek ALC888S)
USB	• 1x USB 3.2 Gen1 Port & 4x USB 2.0 Port
Isolated	• 1x 4 Isolated DI & 4 Isolated DO Port
COM	• 6x COM (DB9, RS232/422/485 with Auto Flow Control)
PS/2 Port	• 1x PS/2 Port
Antenna	• 2x Antenna Hole
Power Switch	• 1x Power Switch
AT/ATX Switch	• 1x AT/ATX Switch
Remote Power Connector	• 1x Remote Power Connector and Reset Connector
<b>Expansion</b>	
Mini PCIe	• 2x Full-size Mini PCIe Socket for Wi-Fi / GSM / Expansion Module
Universal I/O Bracket	• 1x Universal I/O Bracket

PCIe	<ul style="list-style-type: none"> <li>• 2x PCIe x1 (DE-1002-EE Only) MEC Module / Support maximum dimensions of add-on card (H x L) Without MEC Module: 111.15mm x 174.63mm With MEC-LAN-M102-30: 60mm x 174.63mm With MEC-USB-M102-30: 63mm x 174.63mm With MEC-COM-M212-DB9: 60mm x 174.63mm</li> <li>• 2x PCI (DE-1002-PP Only) MEC Module / Support maximum dimensions of add-on card (H x L) MEC Module / Support maximum dimensions of add-on card (H x L) Without MEC Module: 111.15mm x 174.63mm With MEC-LAN-M102-30: 60mm x 174.63mm With MEC-USB-M102-30: 63mm x 174.63mm With MEC-COM-M212-DB9: 60mm x 174.63mm</li> </ul>
<b>Other Function</b>	
WatchDog Timer	<ul style="list-style-type: none"> <li>• Software Programmable Supports 256 Levels System Reset</li> </ul>
<b>Power Requirement</b>	
Power Mode	<ul style="list-style-type: none"> <li>• AT / ATX</li> </ul>
Power Supply Voltage	<ul style="list-style-type: none"> <li>• 9~48VDC</li> </ul>
Terminal Block	<ul style="list-style-type: none"> <li>• One 3-pin Terminal Block Connector</li> </ul>
Power Adapter	<ul style="list-style-type: none"> <li>• Optional Power Adapter AC/DC 12V/5A 60W</li> </ul>
<b>Physical</b>	
Dimension ( W x D x H )	<ul style="list-style-type: none"> <li>• 203 x 200 x 114.5mm</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• 3.66 kg</li> </ul>
Construction	<ul style="list-style-type: none"> <li>• Aluminum Chassis with Fan-less Design</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Wall Mounting</li> </ul>
Physical Design	<ul style="list-style-type: none"> <li>• Cable-less Design</li> </ul>
<b>Digital Input &amp; Output</b>	
Digital Input	<ul style="list-style-type: none"> <li>• 4x Digital Input (Source Type)                             <ul style="list-style-type: none"> <li>- Input Voltage (Dry Contact): Logic 0: Close to GND Logic 1: Open</li> <li>- Input Voltage: Logic 0: 3V max. Logic 1: 5V min. (DI to COM-)</li> </ul> </li> </ul>
Digital Output	<ul style="list-style-type: none"> <li>• 4x Digital Output                             <ul style="list-style-type: none"> <li>- Supply Voltage: 9~30VDC</li> <li>- Sink Current: 580 mA Max. Per Channel</li> </ul> </li> </ul>
<b>Operating System</b>	
Windows®	<ul style="list-style-type: none"> <li>• Windows® 10</li> <li>• Windows® 8</li> <li>• Windows® Embedded 8 Standard</li> <li>• Windows® 7</li> <li>• Windows® Embedded Standard 7</li> </ul>
Linux	<ul style="list-style-type: none"> <li>• Supports by Project</li> </ul>
<b>Environment</b>	
Operating Temperature	<ul style="list-style-type: none"> <li>• -25°C to 70°C (ambient with air flow; with Industrial Grade Peripherals)</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -30°C to 85°C</li> </ul>
Relative Humidity	<ul style="list-style-type: none"> <li>• 10%~95% (non-condensing)</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• 50 Grms (With SSD According to IEC 60068-2-27, Half Sine, 11ms Duration)</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• Random: 5 Grms (With SSD According to IEC 60068-2-64, 5~500Hz, 1 hr/axis)</li> </ul>

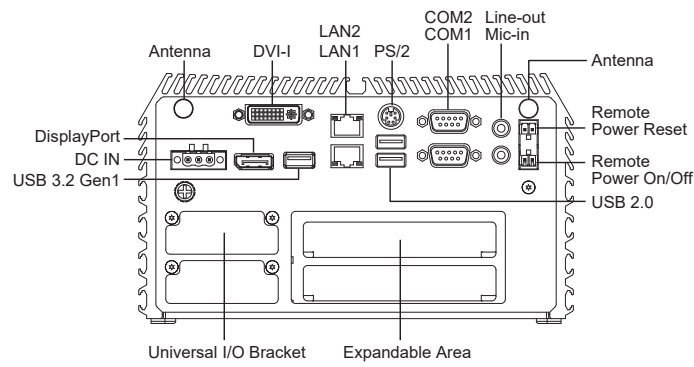
EMC	<ul style="list-style-type: none"> <li>• CE, UKCA, FCC, ICES-003 Class A</li> <li>• EN 50155 (EN 50121-3-2 Only)</li> </ul>
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 50121-3-2 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 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>
EMS	<ul style="list-style-type: none"> <li>• EN/IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV</li> <li>• EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 20 V/m</li> <li>• EN/IEC 61000-4-4 EFT: AC Power: 2 kV; Signal: 2 kV</li> <li>• EN/IEC 61000-4-5 Surges: AC Power: 2 kV</li> <li>• EN/IEC 61000-4-6 CS: 10V</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>
Safety	<ul style="list-style-type: none"> <li>• LVD IEC/EN 62368-1</li> </ul>

## External Layout

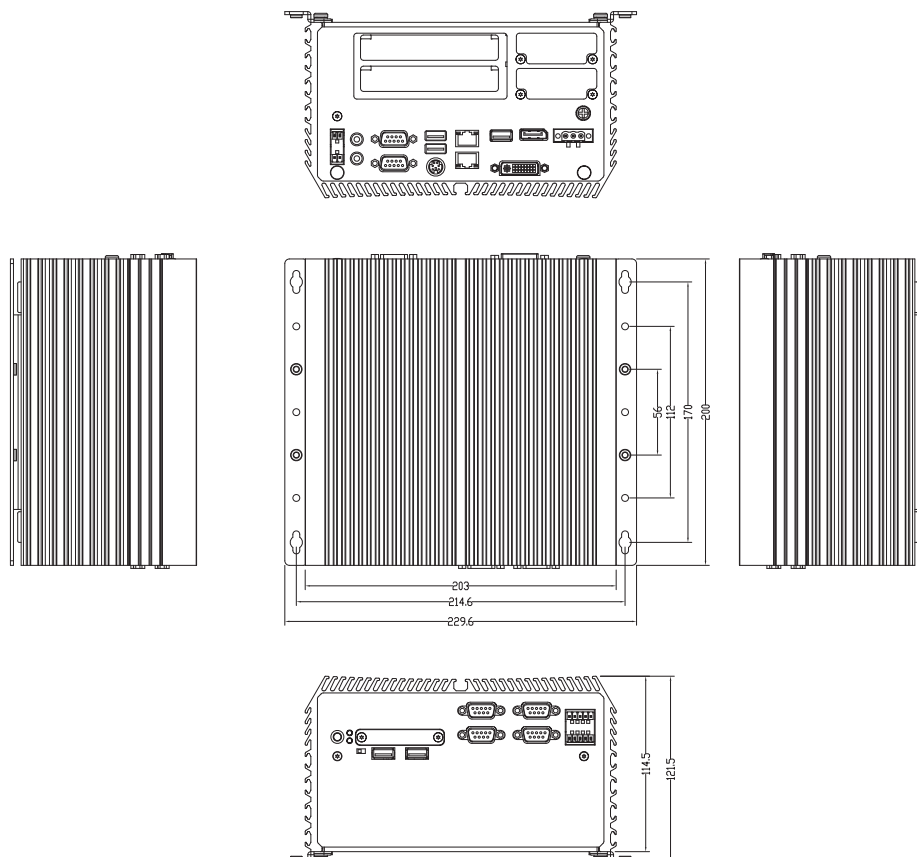
### Front I/O



### Rear I/O



## Dimensions



Unit: mm

## Ordering Information

### Available Models

Model No.	Description
DE-1002-EE	Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 2x PCIe x1 Expansion
DE-1002-PP	Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 2x PCI Expansion

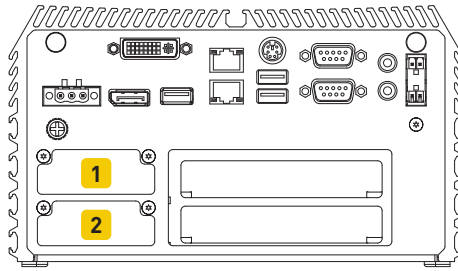
### Package Checklist

• DE-1002 Embedded System x 1	• Remote Power Terminal Block Connector x 2
• DIO Terminal Block Connector x 2	• DVI-I to VGA Adapter x 1
• Power Terminal Block Connector x 1	• Screw Pack x 1
• Wall Mount Kit x 1	

### Optional Accessories

Model No.	Description
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W with 3pin Terminal Block Plug 5.0mm Pitch, 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
VESA-DE	DE series VESA Mount Kit
SIDE-DE	DE series SIDE Mount Kit
DINRAIL	Diamond series DIN-RAIL Mount Kit
UB0211	Universal Bracket with 2x RJ45 Cutout
UB0214	Universal Bracket with 2x USB Cutout
UB0203	2x Universal Bracket each with 1x DB9 Cutout for DE-1000 Series

## Optional Module Configuration



Model No.	Description	1	2
MEC-LAN-M102-30	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable	V	V
MEC-USB-M102-30	Mini-PCIe Module with 2x USB Ports, 1x 30cm cable	V	V
MEC-COM-M212-DB9	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Standard DB9 Cable	V	V

V: Compatible