

# DE-1001

Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 1x PCI / 1x 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
- 1x PCI or 1x PCIe x1 Expansion
- Power Ignition
- EN50121-3-2 Certified/ EN62368-1

### Certifications



## Specifications

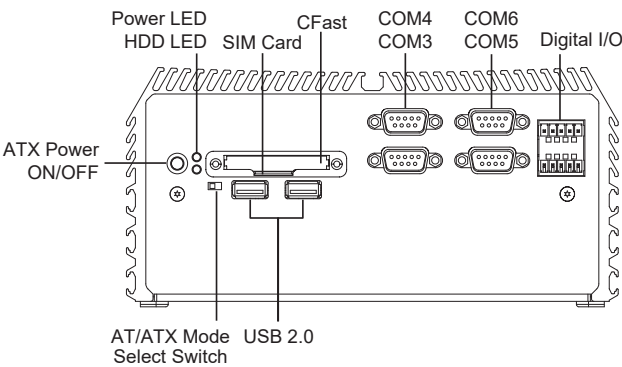
| Model Name             | DE-1001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>• 1x PCIe x1 (DE-1001-E Only)<br/>MEC Module / Support maximum dimensions of add-on card (H x L)<br/>Without MEC Module: 111.15mm x 174.63mm<br/>With MEC-LAN-M102-30: 60mm x 174.63mm<br/>With MEC-USB-M102-30: 63mm x 174.63mm</li> <li>• 1x PCI (DE-1001-P Only)<br/>MEC Module / Support maximum dimensions of add-on card (H x L)<br/>Without MEC Module: 111.15mm x 174.63mm<br/>With MEC-LAN-M102-30: 60mm x 174.63mm<br/>With MEC-USB-M102-30: 63mm x 174.63mm</li> </ul> |

| Other Function          |                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WatchDog Timer          | <ul style="list-style-type: none"> <li>• Software Programmable Supports 256 Levels System Reset</li> </ul>                                                                                                                                                                                                                                                                      |
| Power Requirement       |                                                                                                                                                                                                                                                                                                                                                                                 |
| 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>                                                                                                                                                                                                                                                                                     |
| Physical                |                                                                                                                                                                                                                                                                                                                                                                                 |
| Dimension ( W x D x H ) | <ul style="list-style-type: none"> <li>• 203 x 200 x 96.5mm</li> </ul>                                                                                                                                                                                                                                                                                                          |
| Weight                  | <ul style="list-style-type: none"> <li>• 3.40 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>                                                                                                                                                                                                                                                                                                           |
| Digital Input & Output  |                                                                                                                                                                                                                                                                                                                                                                                 |
| 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):<br/>Logic 0: Close to GND<br/>Logic 1: Open</li> <li>- Input Voltage:<br/>Logic 0: 3V max.<br/>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>                                                                                                                                                                             |
| Operating System        |                                                                                                                                                                                                                                                                                                                                                                                 |
| 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>                                                                                                                                                                                                                                                                                                         |
| Environment             |                                                                                                                                                                                                                                                                                                                                                                                 |
| 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> |

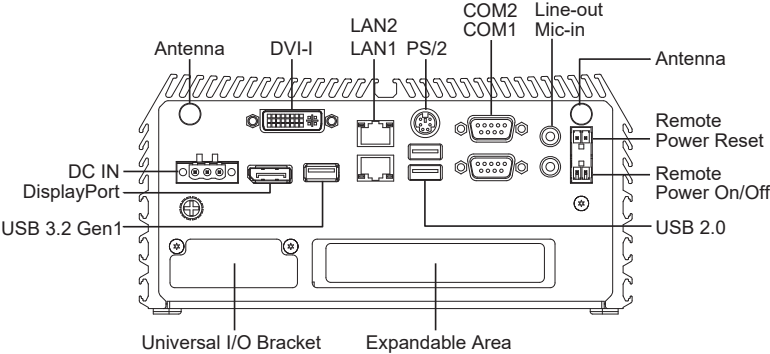
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|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

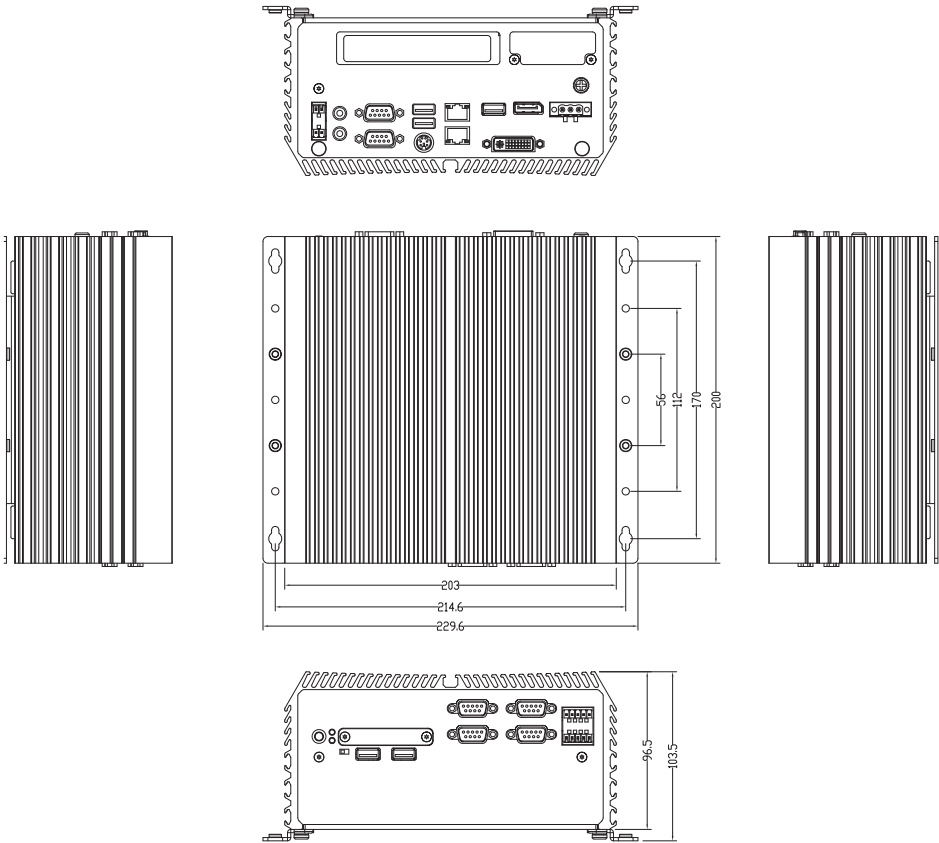
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

Available Models

| Model No. | Description                                                                             |
|-----------|-----------------------------------------------------------------------------------------|
| DE-1001-E | Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 1x PCIe x1 Expansion |
| DE-1001-P | Intel® Atom™ E3845 Quad Core Power Efficient Fanless Computer with 1x PCI Expansion     |

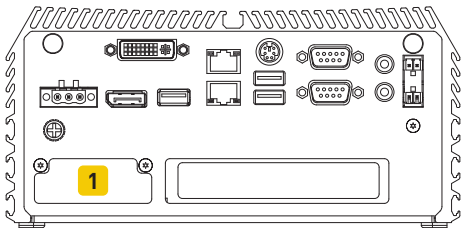
Package Checklist

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| ▪ DE-1001 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                                                  |

Optional Module Configuration



| Model No.       | Description                                       | 1 |
|-----------------|---------------------------------------------------|---|
| MEC-LAN-M102-30 | Mini-PCIe Module with 2x LAN Ports, 2x 15cm cable | V |
| MEC-USB-M102-30 | Mini-PCIe Module with 2x USB Ports, 1x 15cm cable | V |