

# DS-1002

4th Gen. Intel® Core™ i3 / i5 / i7 Superior Performance Fanless Computer  
Integrate Q87 Chipset, 2x PCI / 2x PCIe Expansion



## Key Features

- Support 4th Gen. Intel® Core™ i3 / i5 / i7 Desktop Processor (LGA1150) and Intel® Q87 Chipset
- 2x DDR3 / DDR3L SO-DIMM Max. up to 16GB
- Three Independent Display from 1x DVI-I and 2x DisplayPort
- 2x Intel® GbE Port, Support Wake-on-LAN and PXE
- 4x USB 3.0 and 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, 2x mSATA (1x 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 / 1x PCIe x1 and 1x PCIe x16 / 1x PCI and 1x PCIe x16 Expansion
- Power Ignition
- Compliant with EN50155 for Rail Transportation Applications

## Overview

DS-1000 series is a fanless embedded system integrated with 4th generation Intel® Core™ i3 / i5 / i7 LGA1150 socket type processor, Intel® Q87 express chipset, rich I/O, and supports wide range (9~48V) DC power input. The front access designed provides fast change capability of hard drive, CMOS battery, CFast card and SIM card.

With flexible installation of internal or external fan, mounting kit, and various interface expansion modules makes DS-1000 series a functional system meets versatile requirements and different usages. In addition, DS-1000 series is a ruggedized and safety system features completely cable-less designed, special heat dissipation, anti-vibration, build in voltage protection, reliable DC power input, reverse power protection, and industrial components selection.

Combining superior performance and innovative mechanical design, DS-1000 series is an ideal choice for industrial applications.

## Specifications

### Processor System

- Support 4th Generation Intel® Core™ i3 / i5 / i7 LGA 1150 Processor, with AMI 128Mbit SPI BIOS
  - Celeron® G1820TE, Dual Core, 2.2GHz, 2M Cache
  - Core™ i3-4330TE, Dual Core, 2.4GHz, 4M Cache
  - Core™ i5-4570TE, Dual Core, 2.7GHz, 4M Cache
  - Core™ i7-4770TE, Quad Core, 2.3 GHz, 8M Cache

### Chipset

- Intel® Q87 Chipset

### Memory

- 2x 204-Pin DDR3 / DDR3L-1333MHz / 1600MHz SO-DIMM (un-buffered and non-ECC), Max. up to 16GB

### Display

#### Triple Display

- 1x DVI and 2x DisplayPort
- 1x VGA (w/ DVI to VGA Adapter) and 2x DisplayPort
- 1x VGA (w/ DVI-I Split Cable), 1x DVI-D, and 1x DisplayPort

### Expansion

- 1x PCIe x1 and 1x PCIe x16 for DS-1002-EE Only  
Support maximum dimension of add-on card (H x L): 111.15mm x 235mm
- 1x PCI and 1x PCIe x16 for DS-1002-PE Only  
Support maximum dimension of add-on card (H x L): 111.15mm x 235mm
- 2x PCI for DS-1002-PP Only
- 2x Full-size Mini PCIe Socket for Wi-Fi / GSM / Expansion Module
- 3x Universal I/O Bracket

### Watchdog Timer

- Software Programmable Supports 1~255 sec. System Reset

### Ethernet

- 1x Intel® i217LM GbE LAN Port, Support Wake-on-LAN and PXE
- 1x Intel® 82583V GbE LAN Port, Support Wake-on-LAN and PXE

### Audio

- Codec: Realtek ALC888S
- 1x Mic-in and 1x Speak-out

### Storage

- 2x 2.5" SATA HDD Bay (1x External Removable, 1x Internal)
- 2x Internal mSATA Slot (1x Shared by Mini-PCIe Socket)
- 1x External CFast Socket
- 1x External SIM Card Socket

### I/O Ports

- 4x USB 3.0 Port
- 4x USB 2.0 Port
- 1x 4 Isolated DI & 4 Isolated DO Port
- 6x DB9 for COM1~6, Support RS232/422/485 with Auto Flow Control
- 1x PS/2 Port
- 2x Antenna Hole
- 1x Power Switch
- 1x AT/ATX Switch
- 1x External Battery Holder
- 1x External Fan Connector
- 1x Remote Power Connector

**Digital Input & Output**

- 4x Digital Input (Source Type)
  - Input Voltage (Dry Contact):
    - Logic 0: Close to GND
    - Logic 1: Open
  - Input Voltage:
    - Logic 0: 3V max.
    - Logic 1: 5V min. (DI to COM-)
- 4x Digital Output
  - Supply Voltage: 5~30VDC
  - Sink Current: 200 mA Max. Per Channel

**Power**

- Support AT, ATX Mode
- 1x 3-pin Terminal Block Connector with Power Input 9~48VDC
- 1x Optional AC/DC 24V/5A, 120W Power Adapter

**Environment**

- Operating Temperature: Ambient with Air Flow: -10°C to 60°C (with Industrial Grade Peripherals)
- Storage Temperature: -20°C to 80°C
- Relative Humidity: 10%~95% (non-condensing)

**Physical**

- Dimension (WxDxH, mm): 227 x 261 x 126 mm
- Weight: 5.70 kg
- Construction: Extruded Aluminum with Heavy Duty Metal
- Mounting: Wall

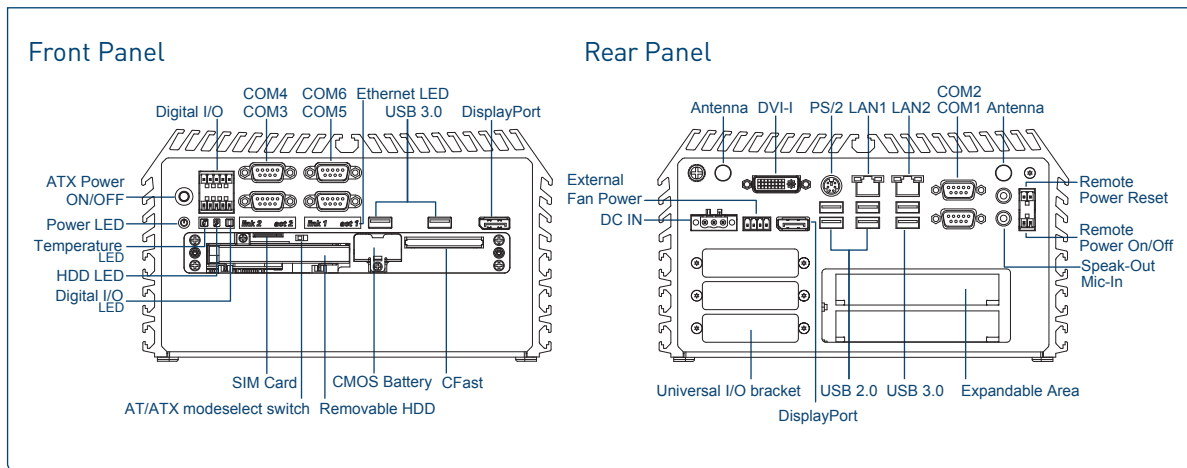
**Operating System**

- Windows® 8
- Windows® Embedded 8 Standard
- Windows® 7
- Windows® Embedded Standard 7

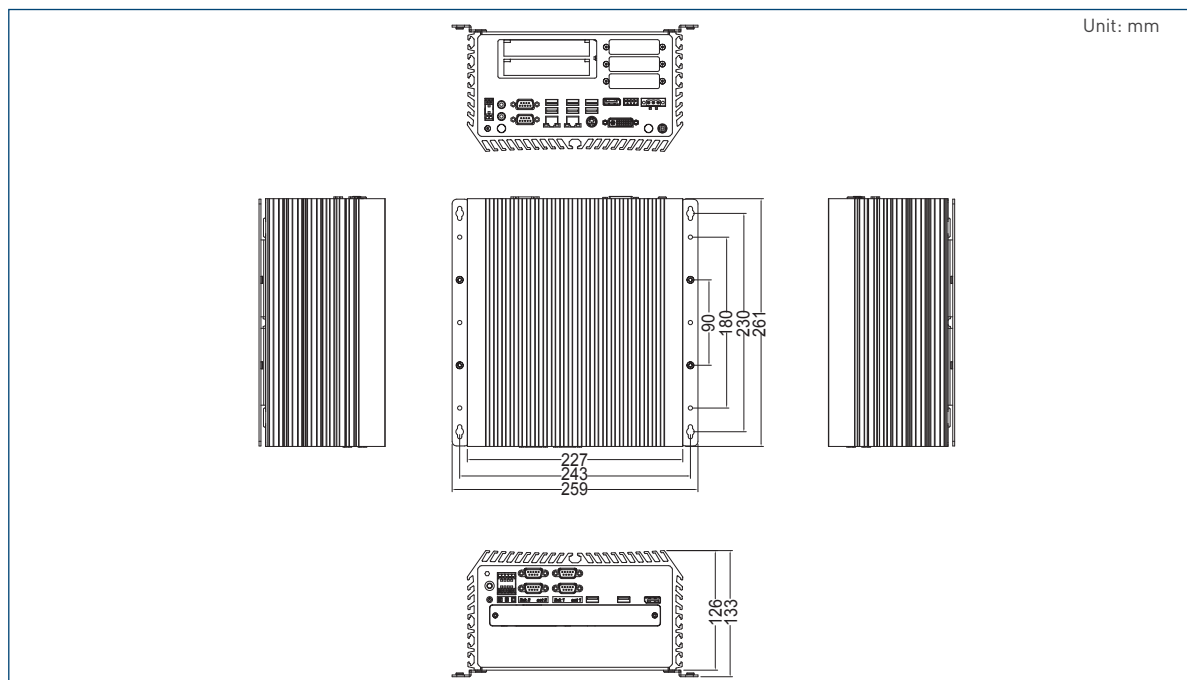
**Certification**

- CE
- EN 50155
- FCC Class A
- EN 50121-3-2

External I/O Mechanical Layout



Dimensions



»» Ordering Information

Available Models

Model No.	Product Description
<b>DS-1002-PP</b>	4th Gen. Intel® Core™ i3 / i5 / i7 Superior Performance Fanless Computer Integrate Q87 Chipset and 2x PCI Expansion
<b>DS-1002-EE</b>	4th Gen. Intel® Core™ i3 / i5 / i7 Superior Performance Fanless Computer Integrate Q87 Chipset, 1x PCIe x1 Expansion and 1x PCIe x16 Expansion
<b>DS-1002-PE</b>	4th Gen. Intel® Core™ i3 / i5 / i7 Superior Performance Fanless Computer Integrate Q87 Chipset, 1x PCI Expansion and 1x PCIe x16 Expansion

Package Checklist

- DS-1002 Embedded System x 1
- Utility DVD Driver x 1
- DIO Terminal Block Connector (Female) x 2
- Power Terminal Block Connector (Female) x 1
- Remote Power Terminal Block Connector (Female) x 2
- External Fan Terminal Block Connector (Female) x 1
- DVI-I to VGA Adapter x 1
- Screw Pack x 1
- Wall Mount Kit x 1
- Heat Sink Pack x 1

Optional Accessories

Model No.	Description
GS120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug 5.0mm Pitch,GS120A24-P1M
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
59381560000E	MINI-DIN(M) (PS/2 KB+MS) TO MINI-DIN(F) (PS/2 KB)+MINI-DIN(F) (PS/2 MS) L:10CM, 59381560000E
N0307-140507-01	DVI-I(M) TO DVI-D(F) + VGA(F) Cable, L=200mm, N0307-140507-01