

# DX-1000

7/6th Generation Intel® Xeon® and Core™ Processors, Extreme Performance, Compact and Modular Rugged Workstation



- Supports 7/6th Generation Intel® Xeon® / Core™ LGA1151 Socket Type Processors with Intel® C236 Chipset
- 2x DDR4-2133/2400 SO-DIMM Sockets, up to 64GB Memory
- Triple Independent Display (1x DVI-I, 2x DisplayPort)
- 2x 2.5" Hot Swap SATA III HDD/SSD bays, Supports RAID 0/1
- 3x CMI Interfaces for RJ45/M12 GbE LAN, COM & DIO Expansions
- 2x CFM Interfaces for Power Ignition Sensing and PoE Functions
- 4x Full-size Mini-PCIe Slots for Wireless & I/O Expansions
- EN50121-3-2 Certified for Railway Application
- E-Mark (E13, No.10R-0514546) Certification for In-vehicle Application



## Overview

The Cincoze DX-1000 is a rugged workstation series based on LGA 1151 socket and Intel® C236 chipset supporting 7th/6th generation Intel® Xeon® and Intel® Core™ Processors, DX-1000 Series supports 4K resolution through Intel® Gen9 graphics engine with two DDR4 SO-DIMM sockets up to 64GB memory which delivers outstanding computing performance for high-end applications.

Despite remarkably compact footprint and rich I/O including 1x DVI-I, 2x Display ports, 2x GbE LAN ports, 4x RS232/422/485 serial ports and 8x USB 3.0 ports, Cincoze provides its exclusive CMI (Combined Multiple I/O) and CFM (Control Function Module) technologies to make DX-1000 Series a highly scalable system for specific applications such as Industrial automation, transportation, machine vision, in-vehicle and mobile surveillance. DX-1000 Series can be expanded with powered serial port, optical isolated digital I/O, multiple GbE LAN, M12 connector, Power over Ethernet and power ignition sensing function through versatile modules.

Featuring wide operating temperature (-40~+70°C), wide range DC power input (9~48 VDC), high tolerance to vibration and shock (5/50 Grms), rugged uni-body construction, fanless, cable-less and jumper-less design, the DX-1000 Series is ideal to be deployed in harsh environments.

## Highlights



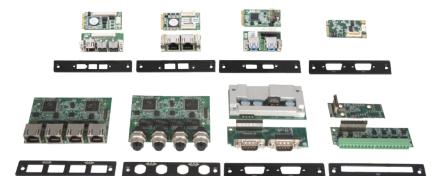
### High Performance

Supports Intel® Xeon®/Core™ i7/i5/i3 processors, DX Series is specially designed to delivering workstation grade performance for multi-task applications



### Compact Size

Small footprint (3.2 liter) with rich I/O for greater connectivity, 2x front accessible HDD/SSD trays for ease of data maintenance



### Wide Temperature

Unique CMI, CFM and MEC technologies for modular expansion to satisfy diversified applications

## Specifications

### Processor

- 7th Generation Intel® CPU (Kaby Lake-S)
  - Intel® Core i3-7101TE: 3M Cache, 3.4 GHz, TDP 35W
  - Intel® Core i5-7500T: 6M Cache, up to 3.3 GHz, TDP 35W
  - Intel® Core i7-7700T: 8M Cache, up to 3.8 GHz, TDP 35W
  - Intel® Core i5-7500: 6M Cache, up to 3.8 GHz, TDP 65W
  - Intel® Core i7-7700: 8M Cache, up to 4.2 GHz, TDP 65W
  - Intel® Xeon E3-1275 v6: 8M Cache, up to 4.2 GHz, TDP 73W
- 6th Generation Intel® CPU (Skylake-S)
  - Intel® Core i3-6100TE: 4M Cache, 2.7 GHz, TDP 35W
  - Intel® Core i5-6500TE: 6M Cache, up to 3.3 GHz, TDP 35W
  - Intel® Core i7-6700TE: 8M Cache, up to 3.4 GHz, TDP 35W
  - Intel® Xeon E3-1268L v5: 8M Cache, up to 3.4 GHz, TDP 35W
  - Intel® Core i3-6100: 3M Cache, 3.7 GHz, TDP 51W
  - Intel® Core i5-6500: 6M Cache, up to 3.6 GHz, TDP 65W
  - Intel® Core i7-6700: 8M Cache, up to 4.0 GHz, TDP 65W
  - Intel® Xeon E3-1225 v5: 8M Cache, up to 3.7 GHz, TDP 80W
  - Intel® Xeon E3-1275 v5: 8M Cache, up to 4.0 GHz, TDP 80W

### Chipset

Intel® C236

### BIOS

AMI 16MB BIOS

### Memory

- 2x DDR4-2133/2400MHz SO-DIMM Sockets, Support up to 64 GB (Un-buffered and Non-ECC type)

### Graphics

- Integrated Intel® HD Graphics supports triple independent display (1x DVI-I, 2x DisplayPort)

### Audio

- Realtek® ALC888
- High Definition Audio

### I/O Interface

- 1x DVI-I Connector (1920 x 1080 @60Hz)
- 2x DisplayPort Connectors (3840 x 2160 @30Hz)
- 2x GbE LAN (Support WoL, Teaming, Jumbo Frame, IEEE 1588v2 and PXE), RJ45
  - GbE1: Intel® I219-LM
  - GbE2: Intel® I210
- 4x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
- 8x USB 3.0 (Type-A)
- 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 Swit ch
- 1x Remote Power On/Off Connector, 2-pin Terminal Block
- 1x External FAN Connector, 4-pin Terminal Block (supports smart fan by BIOS)

### Storage

- 2x SATA III (6Gbps) for 2.5" HDD/SSD
- 4x mSATA (Shared by Mini-PCIe Socket) (Gen3)
- Supports S/W RAID 0, 1, 5 & 10

### Expansion

- Supports CFM (Control Function Module) Technology
  - CFM IGN Module, CFM PoE Module
- Supports CMI (Combined Multiple I/O) Technology
  - 4x RJ45 GbE LAN Module, 4x M12 GbE LAN Module (via 2x High Speed CMI Interfaces)

- 2x COM Module, 16x Optical Isolated DIO Module (via 1x Low Speed CMI Interface)
- 4x Full-size Mini-PCIe Sockets
- 1x SIM Socket

### Other Function

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

### Power Requirement

- Supports AT/ATX Power Type
- Power Input Voltage 9~48VDC
- 3-pin Terminal Block
- Power Adapter AC/DC 24V/5A 120W or 24V/9.2A 220W (Optional)

### Physical

- Dimension (WxDxH): 242 x 174 x 77 mm
- Weight: 3.6 kg
- Extruded Aluminum with Heavy Duty Metal
- Wall mount / VESA mount / DIN Rail Mount / Side Mount
- 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: 3.84 kV (impedance 12 ohm 1.2/50us waveform)

### Operating System

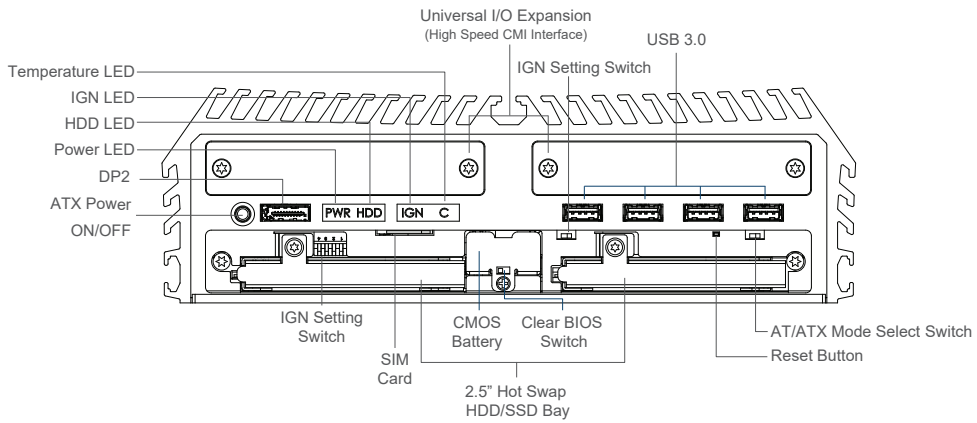
- 7th Generation Intel® CPU (Kaby Lake-S): Windows® 10
- 6th Generation Intel® CPU (Skylake-S): Windows® 10/ 8.1/ 7
- Linux: Supports by project

### Environment

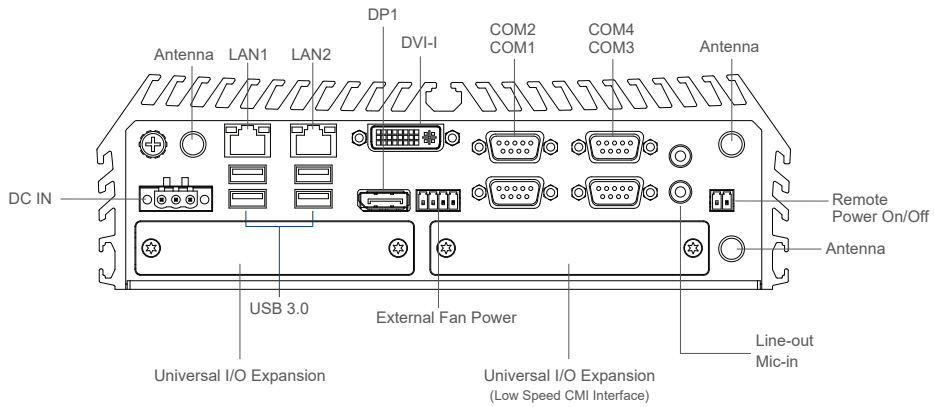
- Operating Temperature:
  - 7th Generation Intel® CPU (Kaby Lake-S)
    - 35W TDP CPU: -40°C to 50°C
    - 51W~65W TDP CPU: -40°C to 45°C
    - 73W TDP CPU: -40°C to 40°C
  - 6th Generation Intel® CPU (Skylake-S)
    - 35W TDP CPU: -40°C to 70°C
    - 51W~65W TDP CPU: -40°C to 55°C
    - 80W TDP CPU: -40°C to 40°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: 40°C @ 95% RH (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)
- EMC: CE, FCC Class A, EN50121-3-2, E-Mark (E13, No.10R-0514546)
- Safety: LVD (EN60950-1)
- Fire Protection: EN45545-2
- MTBF: 457,941 Hours  
Database: Telcordia SR-332 Issue 3, Method 1, Case 3

**External Layout**

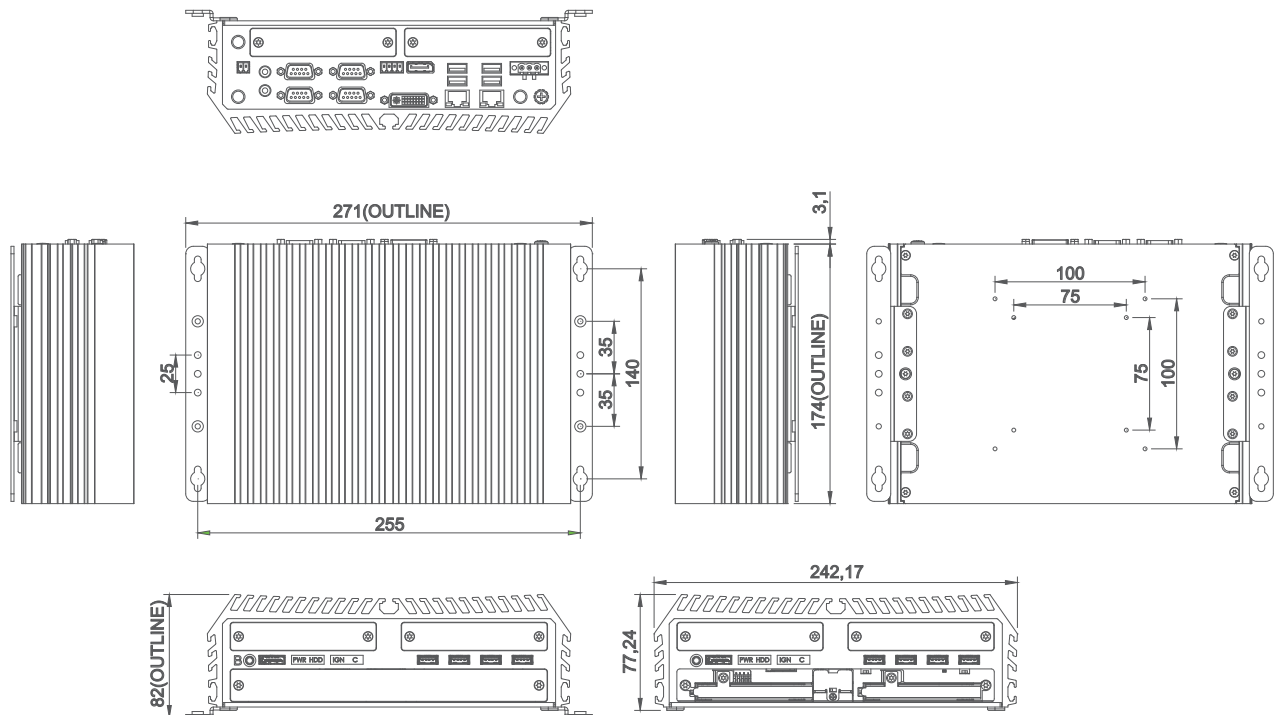
Front I/O



Rear I/O



**Dimensions**



Unit: mm

## Ordering Information

### Available Models

Model No.	Description
DX-1000-R10	7/6th Generation Intel® Xeon® and Core™ Processors, Extreme Performance, Compact and Modular Rugged Workstation

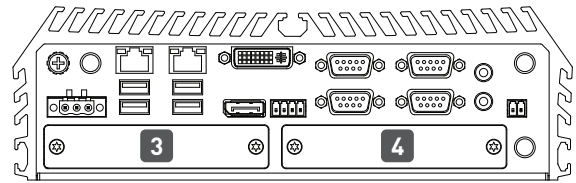
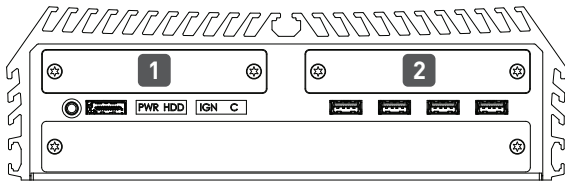
### Package Checklist

- DX-1000 Rugged Workstation x1
- CPU Heatsink Thermal Pad x1
- Utility DVD Driver x1
- Screw Pack x1
- Wall Mounting Kit x1
- Power Terminal Block Connector x1
- Remote Power On/Off Terminal Block Connector x1
- Fan Terminal Block Connector x1
- DVI-I to VGA Adaptor x1

### Optional Modules & Accessories

Model No.	Description
CFM-IGN01	CFM Module with Power Ignition Sensing Control Function, Select 12V/24V
CFM-PoE01	CFM Module with PoE Control Function, Individual Port 25.5W
CMI-LAN01-R12/UB0912	CMI Module with 4x RJ45 Ports, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm]
CMI-M12LAN01-R12/UB0910	CMI Module with 4x M12 A Coded Connectors, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm]
CMI-XM12LAN01-R10/UB0930-R10	CMI Module with M12 X-Coded Connector, 4x Intel I210 GbE LAN Ports / Universal Bracket with 4x M12 X-Coded Cutout for DX Series
CMI-DIO01/UB0918	CMI Module with 16x Optical Isolated DIO (8 in/8 out) / 1x Universal Bracket [97 x 18 mm]
CMI-COM01/UB0903	CMI Module with 2x RS232/422/485 / 1x Universal Bracket [97 x 18 mm]
MEC-COM-M212-TDB9/UB0903	Mini-PCIe Module with 2x COM Ports / 1x Universal Bracket [97 x 18 mm]
MEC-COM-M334-TDB9/2xUB0903	Mini-PCIe Module with 4x COM Ports / 2x Universal Brackets [97 x 18 mm]
MEC-USB-M102-15/UB0914	Mini-PCIe Module with 2x USB 3.0 Ports / 1x Universal Bracket [97 x 18 mm], 1x Cable for MEC-USB (15cm)
MEC-LAN-M102-30/UB0911	Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket [97 x 18 mm]
FAN-EX101	External Fan with 4pin Terminal Block Plug, Mounting Bracket, Support smart fan
GS120A24-CIN	Adapter AC/DC 24V 5.0A 120W with 3pin Terminal Block Plug 5.0mm Pitch, with Tubes, Level VI
GS220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with Tubes, Level VI
Side-DX	DX Series Side Mount Kit
DIN01	Dinrail Mount Kit, KMRH-K175

## Optional Module Configuration



Model No.	Description	1	2	3	4
CMI-LAN01-R12/UB0912	CMI Module with 4x RJ45 Ports, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm]	V	V	--	--
CMI-M12LAN01-R12/UB0910	CMI Module with 4x M12 A Coded Connectors, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm]	V	V	--	--
CMI-XM12LAN01-R10/UB0930-R10	CMI Module with M12 X-Coded Connector, 4x Intel I210 GbE LAN Ports / Universal Bracket with 4x M12 X-Coded Cutout for DX Series	V	V	--	--
CMI-LAN01-R12/UB0912/ CFM-PoE01	CMI Module with 4x RJ45 Ports, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm] / CFM Module with PoE Control Function, Individual Port 25.5W	V	V	--	--
CMI-M12LAN01-R12/UB0910/ CFM-PoE01	CMI Module with 4x M12 A Coded Connectors, Intel® I210 GbE LAN / 1x Universal Bracket [97 x 18 mm] / CFM Module with PoE Control Function, Individual Port 25.5W	V	V	--	--
CMI-DIO01/UB0918	CMI Module with 16x Optical Isolated DIO (8 in/8 out) / 1x Universal Bracket [97 x 18 mm]	--	--	--	V
CMI-COM01/UB0903	CMI Module with 2x RS232/422/485 / 1x Universal Bracket [97 x 18 mm]	--	--	--	V
MEC-COM-M212-TDB9/UB0903	Mini-PCIe Module with 2x COM Ports / 1x Universal Bracket [97 x 18 mm]	V	V	V	V
MEC-COM-M334-TDB9/ 2xUB0903	Mini-PCIe Module with 4x COM Ports / 2x Universal Brackets [97 x 18 mm]	V	V	V	V
MEC-USB-M102-15/UB0914	Mini-PCIe Module with 2x USB 3.0 Ports / 1x Universal Bracket [97 x 18 mm], 1x Cable for MEC-USB (15cm)	--	V	--	--
MEC-LAN-M102-30/UB0911	Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket [97 x 18 mm]	V	V	V	--

V : Compatible



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