

DX-1000

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



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.

Key Features

- 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

Certifications

High Performance

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

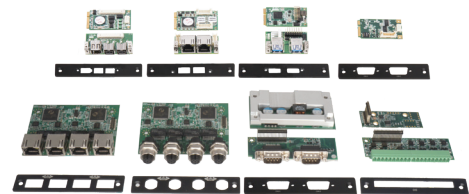


Compact Size

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

Wide Temperature

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



Specifications

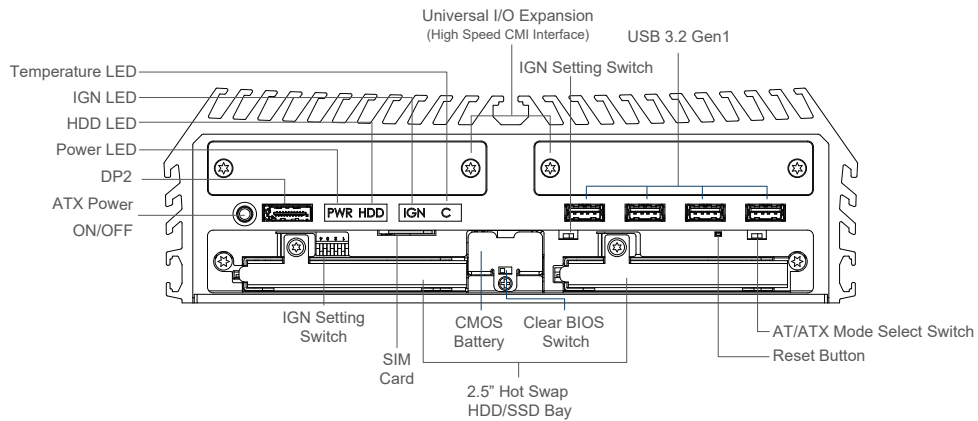
Model Name	DX-1000
System	
Processor	<ul style="list-style-type: none"> 7th Generation Intel® CPU (Kaby Lake-S) <ul style="list-style-type: none"> - Intel® Core i3-7101TE: 3M Cache, 3.4 GHz, TDP 35W - Intel® Core i5-7500T: 6M Cache, up to 3.3 GHz, TDP 35W - Intel® Core i7-7700T: 8M Cache, up to 3.8 GHz, 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) <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> AMI 16MB BIOS
Memory	<ul style="list-style-type: none"> 2x DDR4 SO-DIMM Sockets <ul style="list-style-type: none"> * Intel 7th Generation Processor Supports Up to 2400MHz * Intel 6th Generation Processor Supports Up to 2133MHz Supports Un-buffered and Non-ECC Type Up to 64 GB
Graphics	
Graphics Engine	<ul style="list-style-type: none"> Integrated Intel® HD Graphics supports triple independent display (1x DVI-I, 2x DisplayPort)
Audio	
Audio Codec	<ul style="list-style-type: none"> Realtek® ALC888 High Definition Audio
I/O	
Connector	<ul style="list-style-type: none"> 1x DVI-I Connector (1920 x 1080 @60Hz)
DisplayPort	<ul style="list-style-type: none"> 2x DisplayPort Connector (4096 x 2304 @ 60Hz, According to CPU Specifications) * Verified maximum resolution: 3840x2160
LAN	<ul style="list-style-type: none"> 2x GbE LAN (Support WoL, Teaming, Jumbo Frame, IEEE 1588v2 and PXE), RJ45 <ul style="list-style-type: none"> - GbE1: Intel® I219-LM - GbE2: Intel® I210
Flow Control	<ul style="list-style-type: none"> 4x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
USB	<ul style="list-style-type: none"> 8x USB 3.2 Gen1 Type-A
Mic-in	<ul style="list-style-type: none"> 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
ATX Power	<ul style="list-style-type: none"> 1x ATX Power On/Off Button
Reset Button	<ul style="list-style-type: none"> 1x Reset Button
Mode Switch	<ul style="list-style-type: none"> 1x AT/ATX Mode Switch
CMOS Switch	<ul style="list-style-type: none"> 1x Clear CMOS Switch
Remote Power On/Off Connector	<ul style="list-style-type: none"> 1x Remote Power On/Off Connector, 2-pin Terminal Block
Terminal Block	<ul style="list-style-type: none"> 1x External FAN Connector, 4-pin Terminal Block (supports smart fan by BIOS)

Storage	
HDD/SSD	• 2x SATA III (6Gbps) for 2.5" HDD/SSD
mSATA	• 4x mSATA (Shared by Mini-PCIe Socket) (Gen3)
RAID	• Supports S/W RAID 0, 1, 5 & 10
Expansion	
CFM (Control Function Module) Interface	• Supports CFM (Control Function Module) Technology - CFM IGN Module, CFM PoE Module
CMI (Combined Multiple I/O) Interface	• 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)
M.2 E Key Socket	• 1x M.2 2230 Socket (Key E), supports WiFi/Bluetooth module or BIOS Selectable Intel® CNVi (Integrated WiFi/Bluetooth)
Mini-PCIe	• 4x Full-size Mini-PCIe Sockets
SIM Socket	• 1x SIM Socket
Other Function	
Instant Reboot	• Supports Instant Reboot Technology (0.2 sec)
CMOS	• SuperCap Integrated for CMOS Battery-free Operation
Watchdog Timer	• Software Programmable Supports 256 Levels System Reset
Power Requirement	
Power Type	• AT / ATX
Power Supply Voltage	• 9~48VDC
Terminal Block	• 3-pin Terminal Block
Power Adapter	• Power Adapter AC/DC 24V/5A 120W or 24V/9.2A 220W (Optional)
Physical	
Dimension (W x D x H)	• 242 x 174 x 77 mm
Weight	• 3.6 kg
Construction	• Extruded Aluminum with Heavy Duty Metal
Mounting	• Wall mount / VESA mount / DIN Rail Mount / Side Mount
Physical Design	• Unibody Chassis • Fanless Design • Jumper-less Design • Cable less Design
Protection	
Reverse Power Input Protection	• Yes
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
Operating System	
Windows	• 7th Generation Intel® CPU (Kaby Lake-S); Windows® 10 • 6th Generation Intel® CPU (Skylake-S); Windows® 10/ 8.1/ 7
Linux	• Supports by project

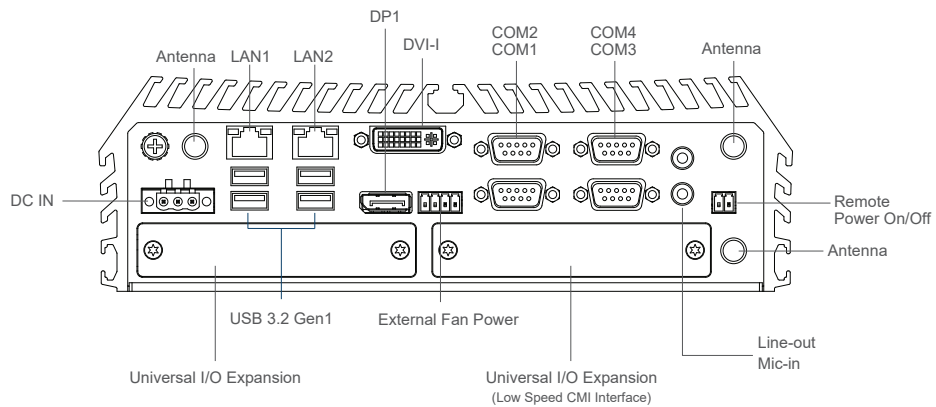
Environment	
Operating Temperature	<ul style="list-style-type: none"> 7th Generation Intel® CPU (Kaby Lake-S) <ul style="list-style-type: none"> - 35W TDP CPU: -40°C to 50°C - 51W~65W TDP CPU: -40°C to 45°C - 73W TDP CPU: -40°C to 40°C 6th Generation Intel® CPU (Skylake-S) <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -40°C to 85°C
Relative Humidity	<ul style="list-style-type: none"> 95% RH @ 40°C (Non-condensing)
Shock	<ul style="list-style-type: none"> IEC60068-2-27: Operating, 50 Grms, Half-sine 11 ms Duration, w/ SSD IEC/EN61373: Operating, 50 Grms, Half-sine 30 ms Duration, w/ SSD
Vibration	<ul style="list-style-type: none"> IEC60068-2-64: Operating, 5 Grms, 5-500 Hz, 3 Axes, w/ SSD IEC/EN61373: Operating, 1 Grms, 5-150 Hz, 3Axes, w/ SSD IEC/EN61373 (Simulated Long Life Testing): Non-Operating, 5-150Hz, 3Axed, w/ SSD
EMC	<ul style="list-style-type: none"> CE, UKCA, FCC, ICES-003 Class A EN 50155 (EN 50121-3-2 Only) E-mark
EMI	<ul style="list-style-type: none"> CISPR 32 Conducted & Radiated: Class A EN/BS EN 50121-3-2 Conducted & Radiated: Class A EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A EN/BS EN61000-3-3 Voltage fluctuations & flicker FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	<ul style="list-style-type: none"> EN/IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 20 V/m EN/IEC 61000-4-4 EFT: AC Power: 2 kV; Signal: 2 kV EN/IEC 61000-4-5 Surges: AC Power: 2 kV EN/IEC 61000-4-6 CS: 10V EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz
Safety	<ul style="list-style-type: none"> LVD (EN60950-1)
Fire Protection	<ul style="list-style-type: none"> EN 45545-2
MTBF	<ul style="list-style-type: none"> 457,941 Hours Database: Telcordia SR-332 Issue 3, Method 1, Case 3

External Layout

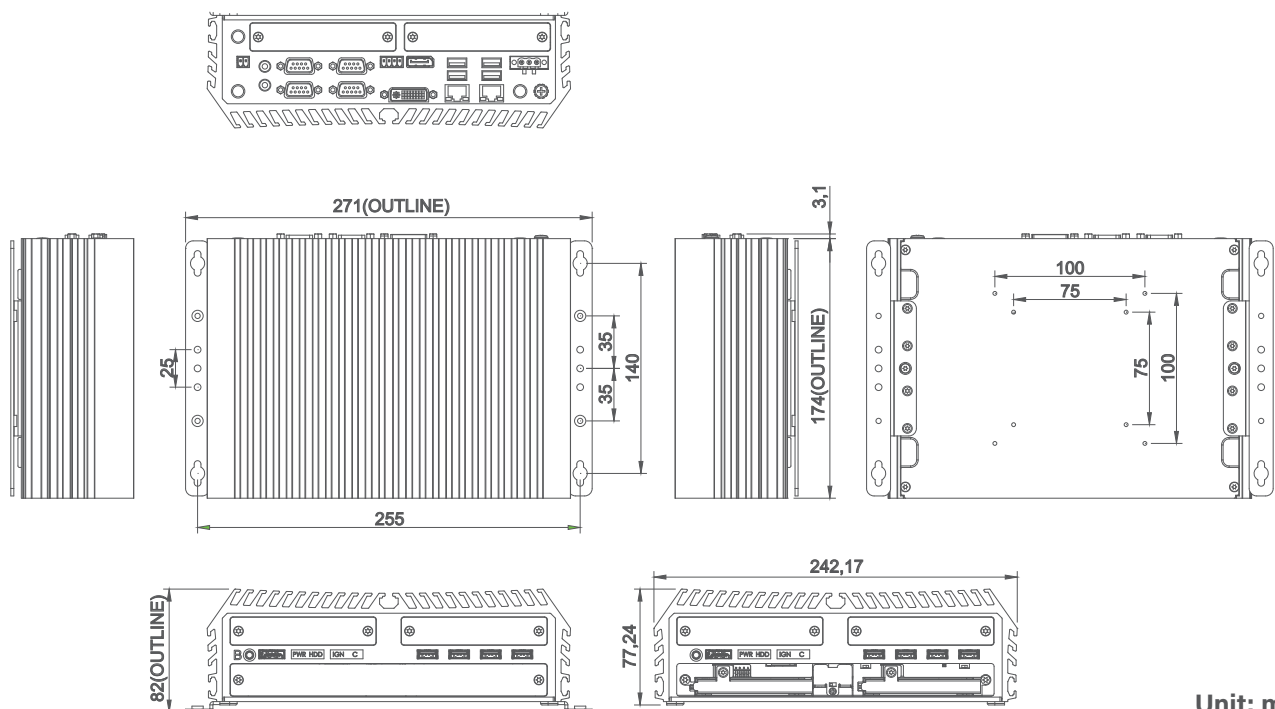
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
DX-1000-R11	7/6th Generation Intel® Xeon® and Core™ Processors, Extreme Performance, Compact and Modular Rugged Workstation

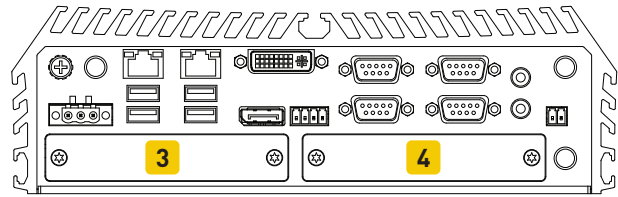
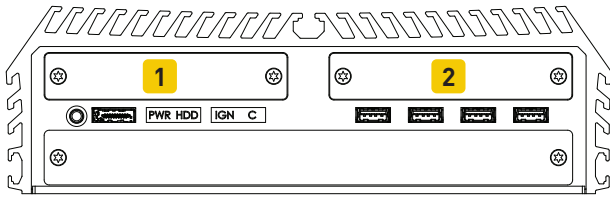
Package Checklist

• DX-1000 Rugged Workstation x 1	• Power Terminal Block Connector x 1
• CPU Heatsink Thermal Pad x 1	• Remote Power On/Off Terminal Block Connector x 1
• Screw Pack x 1	• Fan Terminal Block Connector x 1
• Wall Mounting Kit x 1	• DVI-I to VGA Adaptor x 1

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-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	-	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-LAN-M102-30/UB0911	Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket [97 x 18 mm]	V	V	V	-

V : Compatible