CAPTEC

cincoze™

DX-1100

Rugged Embedded Workstation

Key Benefits

- **High-Performance** Processing with 8th and 9th Generation Intel® Xeon® and Core™ processors
- **Compact Fanless Design** with a 42 × 173 × 77 mm footprint
- **Flexible Expansion** with Mini-PCIe, M.2 and optional CMI/CFM modules
- **Versatile Storage** with dual hot-swappable 2.5" SATA bays and RAID support
- **Rugged Reliability** with wide operating temperatures and industrial-grade shock and vibration resistance



Overview

The DX-1100 is a compact, rugged embedded workstation designed for demanding industrial computing applications. Supporting 8th and 9th Generation Intel® Xeon® and Core™ processors, it provides up to 64 GB DDR4 memory, triple independent displays and flexible storage options with RAID support. Modular CMI and CFM expansion enables additional I/O, Power over Ethernet and power ignition sensing functionality. Its fanless construction, wide-range DC power input and robust environmental protection make it suitable for machine vision, transportation and mobile surveillance applications.

Certifications

EN50121-3-2 · E13 · FC · CE · MEC TECHNOLOGY · CMI TECHNOLOGY · CFM TECHNOLOGY





TRIED, TESTED & **TRUSTED**

Specifications

Model Name	DX-1100
System	
Processor	▪ 9th Generation Intel® Coffee Lake-R S Series CPU: - Intel® Xeon® E-2278GEL 8 Cores Up to 3.9 GHz, TDP 35W - Intel® Core™ i7-9700E 8 Cores Up to 4.4 GHz, TDP 65W - Intel® Core™ i5-9500E 6 Cores Up to 4.2 GHz, TDP 65W - Intel® Core™ i3-9100E 4 Cores Up to 3.7 GHz, TDP 65W - Intel® Core™ i7-9700TE 8 Cores Up to 3.8 GHz, TDP 35W - Intel® Core™ i5-9500TE 6 Cores Up to 3.6 GHz, TDP 35W - Intel® Core™ i3-9100TE 4 Cores Up to 3.2 GHz, TDP 35W ▪ 8th Generation Intel® Coffee Lake S Series CPU: - Intel® Xeon® E-2176G 6 Cores Up to 4.7 GHz - 12M Cache, TDP 80W - Intel® Xeon® E-2124G 4 Cores Up to 4.5 GHz - 8M Cache, TDP 71W - Intel® Core™ i7-8700 6 Cores Up to 4.6 GHz - 12M Cache, TDP 65W - Intel® Core™ i5-8500 6 Cores Up to 4.1 GHz - 9M Cache, TDP 65W - Intel® Core™ i3-8100 4 Cores 3.6 GHz - 6M Cache, TDP 65W - Intel® Core™ i7-8700T 6 Cores Up to 4.0 GHz - 12M Cache, TDP 35W - Intel® Core™ i5-8500T 6 Cores Up to 3.5 GHz - 9M Cache, TDP 35W - Intel® Core™ i3-8100T 4 Cores 3.1 GHz - 6M Cache, TDP 35W - Intel® Pentium® G5400 2 Cores 3.7 GHz - 4M Cache, TDP 58W - Intel® Pentium® G5400T 2 Cores 3.1 GHz - 4M Cache, TDP 35W - Intel® Celeron® G4900 2 Cores 3.1 GHz - 2M Cache, TDP 54W - Intel® Celeron® G4900T 2 Cores 2.9 GHz - 2M Cache, TDP 35W
Chipset	Intel® C246
BIOS	▪ AMI 32 MB BIOS
Memory	▪ 2x DDR4-2666/2400 MHz SO-DIMM Sockets ▪ Support up to 64 GB (Un-buffered and Non-ECC type) * i3/Pentium/Celeron: DDR4 2400 MHz
Graphics	
Graphics Engine	▪ Integrated Intel® UHD Graphics (Xeon: UHD P630; i7/i5/i3: UHD 630; Pentium/Celeron: UHD 610) ▪ Supports Triple Independent Display (DVI-I/DisplayPort/HDMI®)
Audio	
Audio Codec	▪ Realtek® ALC888, High Definition Audio
I/O	
Connector	▪ 1x DVI-I Connector (VGA: 1920 x1080 @ 60 Hz; DVI-D: 1920 x1200 @ 60 Hz)
DisplayPort	▪ 1x DisplayPort Connector (4096 x 2304 @ 60Hz, According to CPU Specifications)
HDMI®	▪ 1x HDMI® Connector (3840 x 2160 @30Hz)
LAN	▪ 2x GbE LAN (Support WoL, Teaming, Jumbo Frame, IEEE 1588v2 and PXE), RJ45 - GbE1: Intel® I219-LM - GbE2: Intel® I210
Flow Control	▪ 4x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
USB	▪ 2x USB 3.2 Gen2x1 (10Gbps) ▪ 6x USB 3.2 Gen1x1 (5Gbps)
Mic-in	▪ 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
ATX Power	▪ 1x ATX Power On/Off Button
Reset Button	▪ 1x Reset Button
Mode Switch	▪ 1x AT/ATX Mode Switch
CMOS Switch	▪ 1x Clear CMOS Switch

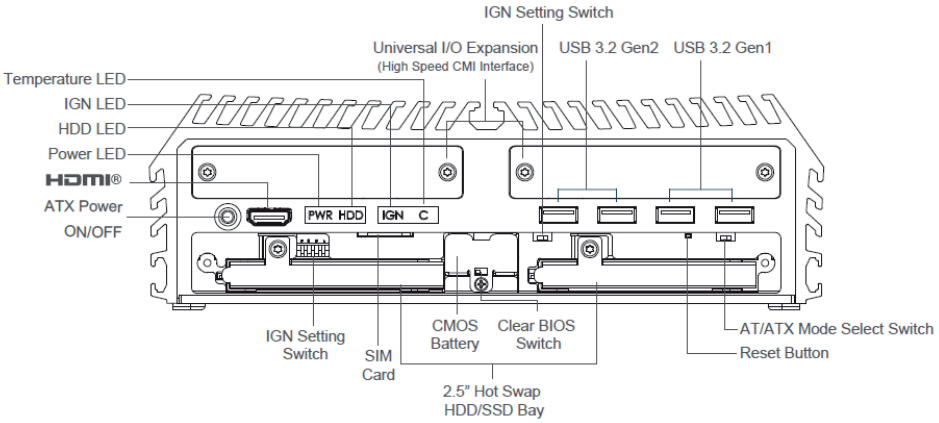
Remote Power On/Off Connector	▪ 1x Remote Power On/Off Connector, 2-pin Terminal Block
Terminal Block	▪ 1x External FAN Connector, 4-pin Terminal Block (Supports Smart Fan by BIOS)
Storage	
HDD/SSD	▪ 2x 2.5" Front Accessible SATA HDD/SSD Bay (SATA 3.0)
mSATA	▪ 3x mSATA Socket (SATA 3.0, shared by Mini-PCIe socket)
RAID	▪ Supports S/W RAID 0, 1, 5 & 10
Expansion	
CFM (Control Function Module) Interface	▪ 1x Control Function Module (CFM) Interface
CMI (Combined Multiple I/O) Interface	▪ 2x Combined Multiple I/O (CMI) High Speed Interface ▪ 1x Combined Multiple I/O (CMI) Low Speed 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	▪ 3x Full-size Mini-PCIe Socket
SIM Socket	▪ 1x SIM Socket
Antenna Hole	▪ 3x Antenna Hole
Other Function	
Instant Reboot	▪ Supports Instant Reboot Technology (0.2 sec)
CMOS	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset
Power Requirement	
Power Type	▪ AT / ATX
Power Supply Voltage	▪ 9~48VDC
Terminal Block	▪ 1x 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 173 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	▪ Windows® 10

Linux	▪ Supports by Project
Environment	
Operating Temperature	▪ 35W TDP Processor: -40°C to 70°C 54~65W TDP Processor: -40°C to 45°C 71~80W TDP Processor: -40°C to 40°C * PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripherals; Ambient with air flow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14 * Comply with EN50155 dry heat thermal test (85°C for 10 minutes)
Storage Temperature	▪ -40°C to 85°C
Relative Humidity	▪ 95% RH @ 40°C (Non-condensing)
Shock	▪ 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	▪ IEC60068-2-64: Operating, 5 Grms, 5-500 Hz, 3 Axes, w/ SSD ▪ IEC/EN61373: Operating, 1 Grms, 5-150 Hz, 3 Axes, w/ SSD
MTBF	▪ 407,391 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3
EMC	▪ CE, UKCA, FCC, ICES-003 Class A ▪ E-mark
EMI	▪ 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	▪ 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 (with optional PPM module): AC Power: 2 kV; DC Power: 1 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	▪ LVD IEC/EN 62368-1
Railway	▪ EMC: EN 50155: 2007 / AC: 2012 Clause 5.4, 5.5 - EN 50121-1: 2017 - EN 50121-3-2: 2016 ▪ Simulated Long Life Test: EN 50155: 2017 Clause 13.4.11.2 - IEC 61373 Edition 2.0: 2010, Category 1, Class B-Body mounted: Operating ▪ Vibration: EN 50155: 2017 Clause 13.4.11.4 - IEC 61373 Edition 2.0: 2010, Category 1, Class B-Body mounted: Operating ▪ Shock: EN 50155: 2017 Clause 13.4.11.3 - IEC 61373 Edition 2.0: 2010, Category 1, Class B-Body mounted: Operating ▪ Dry Heat Thermal Test EN 50155: 2017 Clause 13.4.5.3 - Thermal Test Cycle: B - Operating Temperature: OT4 (-40°C to 70°C), 85°C (for 10 minutes)
Fire Protection	▪ EN 45545-2

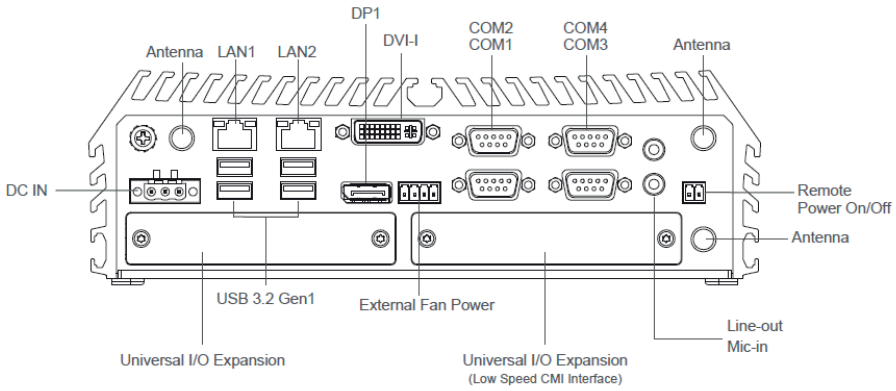
The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

External Layout

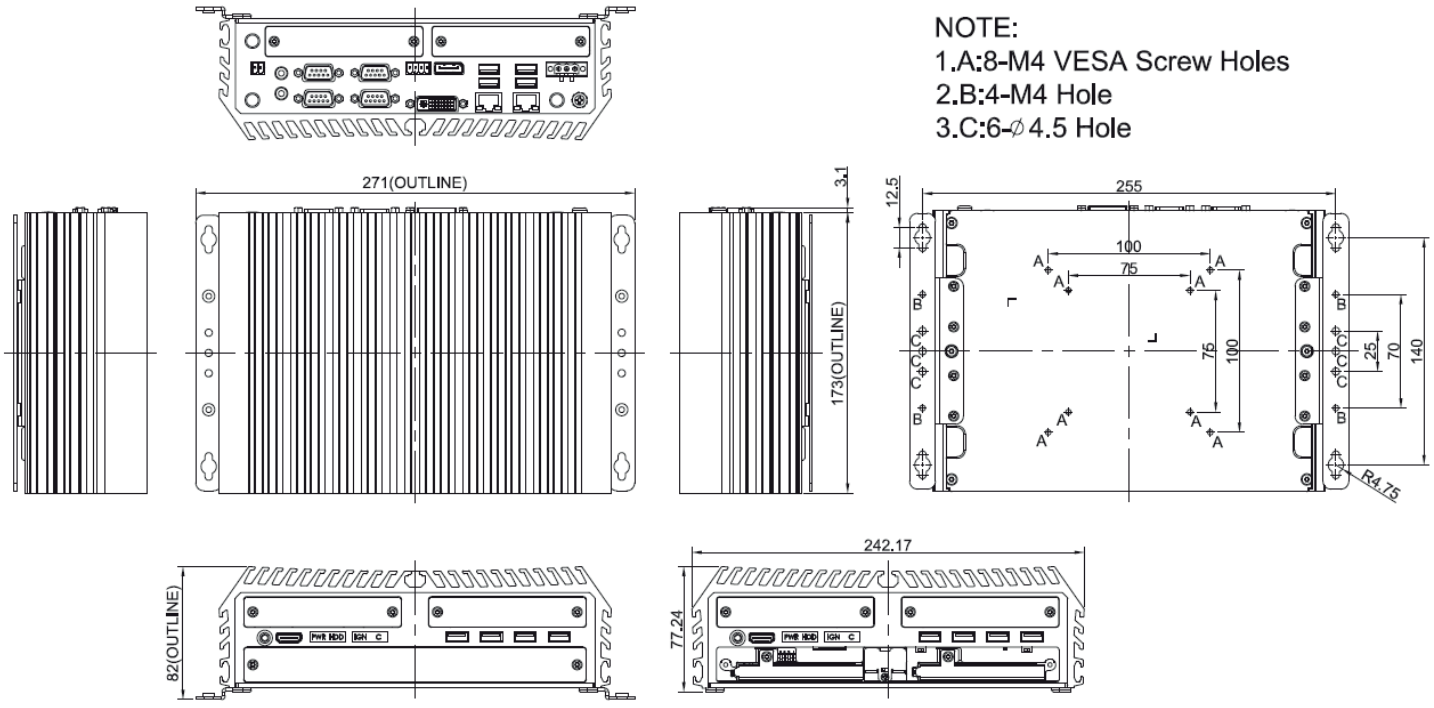
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
DX-1100-R10	9/8th Generation Intel® Xeon® and Core™ Processors, Extreme Performance, Compact and Modular Rugged Workstation

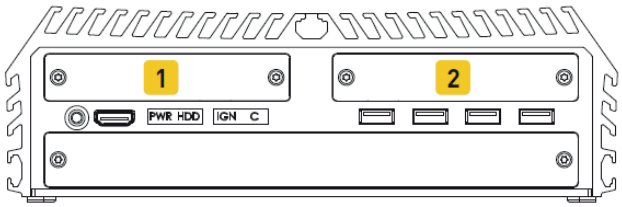
Package Checklist

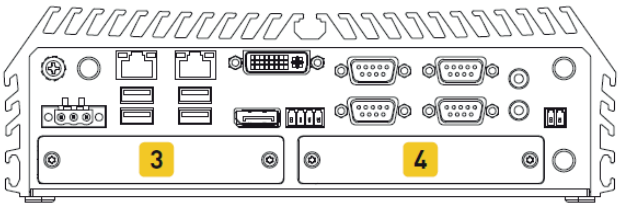
▪ DX-1100 Rugged Workstation x 1	▪ Power Terminal Block Connector x 1
▪ CPU Heatsink Pack x 1	▪ Remote Power On/Off Terminal Block Connector x 1
▪ Screw Pack x 1	▪ Fan Terminal Block Connector x 1
▪ Wall Mounting Kit x 1	▪ DVI-I to VGA Adaptor x 1

Optional Modules & Accessories

Model No.	Description
CFM-PoE01	CFM Module with PoE Control Function, Individual Port 25.5W
CFM-IGN01	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable
CMI-LAN01-R12/UB1712	CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout for DX Series
CMI-M12LAN01-R12/UB1710-R10	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 A-Coded Cutout for DX Series
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-CAN01-R10 /UB1738-R10	CMI Module with 2x CAN FD Ports / Universal Bracket with 2x DB9 and 1× Switch Cutout for CMI-CAN Expansion
CMI-DIO01/UB1318	CMI Module with 16DIO (8in 8out) / 1xUniversal Bracket with DIO Cutout
CMI-COM01/UB0903	CMI Module with 2x RS232/422/485 (Support 5V/12V) / 1x Universal Bracket with 2x DB9 Cutout for DX Series
MEC-COM-M212-TDB9/UB0903	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Thin DB9 Cable / 1x Universal Bracket with 2x DB9 Cutout for DX Series
MEC-COM-M334-TDB9/2xUB0903	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 2x Thin DB9 Cable / 2x Universal Bracket with 2x DB9 Cutout for DX Series
MEC-LAN-M102-30/UB1311	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion
UB0932-R10	Universal Bracket with 3x Antenna Cutout
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W, with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI
GST360A24-CIN	Adapter AC/DC 24V 15A 360W with 3pin Terminal Block Plug and TUBES, Level VI
RSD-200D-24	Railway Single Output DC-DC Converter 200W / DC 24V
FAN-EX101	External Fan with 4pin Terminal Block Plug and Mounting Bracket, Support smart fan
SIDE-DX	DX Series side mount kit
DIN01	DIN-RAIL Mount Kit, KMRH-K175
PPM-I360-01-R10	360W Power Protection Module for DV/DX Series

Optional Module Configuration





Model No.	Description	1	2	3	4
CFM-PoE01	CFM Module with PoE Control Function, Individual Port 25.5W	V	V	-	-
CMI-LAN01-R12/UB1712	CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout for DX Series	V	V	-	-
CMI-M12LAN01-R12/UB1710-R10	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 A-Coded Cutout for DX Series	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-CAN01-R10 /UB1738-R10	CMI Module with 2x CAN FD Ports / Universal Bracket with 2x DB9 and 1× Switch Cutout for CMI-CAN Expansion	V	V	-	-
CMI-DIO01/UB1318	CMI Module with 16DIO (8in 8out) / 1xUniversal Bracket with DIO Cutout	-	-	-	V
CMI-COM01/UB0903	CMI Module with 2x RS232/422/485 (Support 5V/12V) / 1x Universal Bracket with 2x DB9 Cutout for DX Series	-	-	-	V
MEC-COM-M212-TDB9/UB0903	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Thin DB9 Cable / 1x Universal Bracket with 2x DB9 Cutout for DX Series	V	V	V	V
MEC-COM-M334-TDB9/2xUB0903	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 2x Thin DB9 Cable / 2x Universal Bracket with 2x DB9 Cutout for DX Series	V	V	V	V
MEC-LAN-M102-30/UB1311	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	-	-	V	-
UB0932-R10	Universal Bracket with 3x Antenna Cutout	V	V	V	V

V : Compatible

cincoze™

Delivering end-to-end, like no one else.
Bring us your challenge & experience the difference.

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