CAPTEC

cincoze™

DX-1200

Rugged Embedded Computer

Key Benefits

- **High-Performance Processing** with Intel® Bartlett Lake-S and 12th–14th Generation Core™ processors
- **High-Speed Memory** supporting up to 96 GB DDR5 with ECC capability
- **Flexible Expansion** with Mini PCIe, M.2 and optional CMI/CFM modules
- **Versatile Connectivity** with quad independent display support and optional 10GbE and PoE expansion
- **Rugged Fanless Design** with wide-range DC power input and industrial-grade shock and vibration resistance

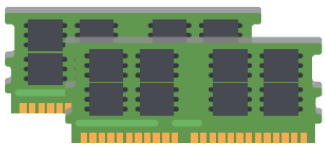


Overview

The DX-1200 is a compact, rugged embedded computer designed for demanding industrial computing applications. Supporting Intel® Bartlett Lake-S and 12th–14th Generation Core™ processors, it delivers high-performance processing with up to 96 GB DDR5 memory and quad independent display support. Flexible CMI and CFM expansion enables additional networking, Power over Ethernet and power ignition sensing functionality. Its fanless construction, 9–48 V DC power input and robust environmental protection make it suitable for smart manufacturing, machine vision and edge AI applications.

Certifications

EN 50121-3-2 · EN 45545 · MIL-STD-810G · EN 62368-1 · c UL us LISTED · CB · E13



DDR5
ECC Memory

CPU Performance

Raptor Lake-S Refresh	250%
Comet Lake-S	

GPU Image Classification Inference Performance

UHD Graphics 770	281%
UHD Graphics 630	

TRIED, TESTED & **TRUSTED**

Specifications

Model Name	DX-1200
System	
Processor	▪ Bartlett Lake-S Intel® Core Series 2 P-Core Only CPU - Intel Core™ Processor 9 273PE 12 Cores Up to 5.7 GHz, TDP 65 W - Intel Core™ Processor 7 253PE 10 Cores Up to 5.5 GHz, TDP 65 W - Intel Core™ Processor 5 223PE 8 Cores Up to 5.4 GHz, TDP 65 W - Intel Core™ Processor 5 213PE 8 Cores Up to 5.2 GHz, TDP 65 W - Intel Core™ Processor 3 201E 4 Cores Up to 4.8 GHz, TDP 60 W - Intel Core™ Processor 9 273PTE 12 Cores Up to 5.5 GHz, TDP 45 W - Intel Core™ Processor 7 253PTE 10 Cores Up to 5.4 GHz, TDP 45 W - Intel Core™ Processor 5 223PTE 8 Cores Up to 5.4 GHz, TDP 45 W - Intel Core™ Processor 5 213PTE 8 Cores Up to 5.2 GHz, TDP 45 W - Intel Core™ Processor 3 201TE 4 Cores Up to 4.6 GHz, TDP 45 W ▪ Bartlett Lake-S Intel® Core Series 2 Hybrid CPU - Intel Core™ Processor 7 251E 24 Cores Up to 5.6 GHz, TDP 65 W - Intel Core™ Processor 5 221E 14 Cores Up to 5.2 GHz, TDP 65 W - Intel Core™ Processor 5 211E 10 Cores Up to 4.9 GHz, TDP 65 W - Intel Core™ Processor 7 251TE 24 Cores Up to 5.4 GHz, TDP 45 W - Intel Core™ Processor 5 221TE 14 Cores Up to 5.0 GHz, TDP 45 W - Intel Core™ Processor 5 211TE 10 Cores Up to 4.8 GHz, TDP 45 W ▪ 14th Generation Intel® Raptor Lake-S Refresh Series P-Core Only CPU: - Intel® Core™ i9-14901E 8 Cores Up to 5.6 GHz, TDP 65W - Intel® Core™ i7-14701E 8 Cores Up to 5.4 GHz, TDP 65W - Intel® Core™ i5-14501E 6 Cores Up to 5.2 GHz, TDP 65W - Intel® Core™ i5-14401E 6 Cores Up to 4.7 GHz, TDP 65W - Intel® Core™ i3-14100 4 Cores Up to 4.7 GHz, TDP 60W - Intel® Core™ i9-14901TE 8 Cores Up to 5.5 GHz, TDP 45W - Intel® Core™ i7-14701TE 8 Cores Up to 5.2 GHz, TDP 45W - Intel® Core™ i5-14501TE 6 Cores Up to 5.1 GHz, TDP 45W - Intel® Core™ i5-14401TE 6 Cores Up to 4.5 GHz, TDP 45W - Intel® Core™ i3-14100T 4 Cores Up to 4.4 GHz, TDP 35W - Intel® Processor 300 2 Cores Up to 3.9 GHz, TDP 46W - Intel® Processor 300T 2 Cores Up to 3.4 GHz, TDP 35W ▪ 14th Generation Intel® Raptor Lake-S Refresh Series Hybrid CPU: - Intel® Core™ i9-14900 24 Cores Up to 5.8 GHz, TDP 65W - Intel® Core™ i7-14700 20 Cores Up to 5.4 GHz, TDP 65W - Intel® Core™ i5-14500 14 Cores Up to 5.0 GHz, TDP 65W - Intel® Core™ i5-14400 10 Cores Up to 4.7 GHz, TDP 65W - Intel® Core™ i9-14900T 24 Cores Up to 5.5 GHz, TDP 35W - Intel® Core™ i7-14700T 20 Cores Up to 5.2 GHz, TDP 35W - Intel® Core™ i5-14500T 14 Cores Up to 4.8 GHz, TDP 35W - Intel® Core™ i5-14400T 10 Cores Up to 4.5 GHz, TDP 35W ▪ 13th Generation Intel® Raptor Lake-S Series P-Core Only CPU: - Intel® Core™ i3-13100E 4 Cores Up to 4.4 GHz, TDP 60W - Intel® Core™ i3-13100 4 Cores Up to 4.5 GHz, TDP 60W - Intel® Core™ i3-13100TE 4 Cores Up to 4.1 GHz, TDP 35W - Intel® Core™ i3-13100T 4 Cores Up to 4.2 GHz, TDP 35W ▪ 13th Generation Intel® Raptor Lake-S Series Hybrid CPU: - Intel® Core™ i9-13900E 24 Cores Up to 5.2 GHz, TDP 65W - Intel® Core™ i9-13900 24 Cores Up to 5.6 GHz, TDP 65W - Intel® Core™ i7-13700E 16 Cores Up to 5.1 GHz, TDP 65W - Intel® Core™ i7-13700 16 Cores Up to 5.2 GHz, TDP 65W - Intel® Core™ i5-13500E 14 Cores Up to 4.6 GHz, TDP 65W - Intel® Core™ i5-13400E 10 Cores Up to 4.6 GHz, TDP 65W - Intel® Core™ i5-13500 14 Cores Up to 4.8 GHz, TDP 65W - Intel® Core™ i5-13400 10 Cores Up to 4.6 GHz, TDP 65W - Intel® Core™ i9-13900TE 24 Cores Up to 5.0 GHz, TDP 35W - Intel® Core™ i7-13700TE 16 Cores Up to 4.8 GHz, TDP 35W - Intel® Core™ i7-13700T 16 Cores Up to 4.9 GHz, TDP 35W - Intel® Core™ i5-13500TE 14 Cores Up to 4.5 GHz, TDP 35W - Intel® Core™ i5-13500T 14 Cores Up to 4.6 GHz, TDP 35W

	▪ 12th Generation Intel® Alder Lake-S Series P-Core Only CPU: - Intel® Core™ i5-12500E 6 Cores Up to 4.5 GHz, TDP 65W - Intel® Core™ i5-12500 6 Cores Up to 4.6 GHz, TDP 65W - Intel® Core™ i5-12400 6 Cores Up to 4.4 GHz, TDP 65W - Intel® Core™ i3-12100E 4 Cores Up to 4.2 GHz, TDP 60W - Intel® Core™ i3-12100 4 Cores Up to 4.3 GHz, TDP 60W - Intel® Core™ i5-12500TE 6 Cores Up to 4.3 GHz, TDP 35W - Intel® Core™ i3-12100TE 4 Cores Up to 4.0 GHz, TDP 35W - Intel® Pentium® G7400E 2 Cores Up to 3.6 GHz, TDP 46W - Intel® Pentium® G7400TE 2 Cores Up to 3.0 GHz, TDP 35W - Intel® Celeron® G6900E 2 Cores Up to 3.0 GHz, TDP 46W - Intel® Celeron® G6900TE 2 Cores Up to 2.4 GHz, TDP 35W - Intel® Pentium® G7400 2 Cores Up to 3.7 GHz, TDP 46W - Intel® Pentium® G7400T 2 Cores Up to 3.1 GHz, TDP 35W - Intel® Celeron® G6900 2 Cores Up to 3.4 GHz, TDP 46W - Intel® Celeron® G6900T 2 Cores Up to 2.8 GHz, TDP 35W ▪ 12th Generation Intel® Alder Lake-S Series Hybrid CPU: - Intel® Core™ i9-12900E 16 Cores Up to 5 GHz, TDP 65W - Intel® Core™ i9-12900 16 Cores Up to 5.1 GHz, TDP 65W - Intel® Core™ i7-12700E 12 Cores Up to 4.8 GHz, TDP 65W - Intel® Core™ i7-12700 12 Cores Up to 4.9 GHz, TDP 65W - Intel® Core™ i9-12900TE 16 Cores Up to 4.8 GHz, TDP 35W - Intel® Core™ i7-12700TE 12 Cores Up to 4.7 GHz, TDP 35W
Chipset	▪ Intel R680E Chipset
Memory	▪ 2x DDR5 SO-DIMM sockets, support Un-buffered and ECC Type memory, up to 96GB. - Core™ i9/i7: Support 5600/4800 MHz with Single Rank memory and 5200/4800 MHz with Dual Rank memory. - Core™ i5/i3/Pentium®/Celeron®/Intel® Processor: Support 4800 MHz.
BIOS	▪ AMI BIOS
Graphics	
Graphics Engine	▪ Integrated Intel® UHD Graphics 770: Core™ i9/i7/i5 ▪ Integrated Intel® UHD Graphics 730: Core™ i3 ▪ Integrated Intel® UHD Graphics 710: Pentium®/Celeron®
Maximum Display Output	▪ Supports Quad Independent Display
DVI	▪ 1x DVI-I Connector - VGA: 1920 x 1080 @ 60 Hz - DVI-D: 1920 x 1200 @ 60 Hz
DP	▪ 1x DP Connector: 4096 x 2304 @ 60Hz * Verified maximum resolution: 3840 x 2160 @ 60Hz
HDMI®	▪ 1x HDMI® Connector: 3840 x 2160 @ 30Hz
Audio	
Audio Codec	▪ Realtek® ALC888, High Definition Audio
Line-out	▪ 1x Line-out, Phone Jack 3.5mm
Mic-in	▪ 1x Mic-in, Phone Jack 3.5mm
I/O	
LAN	▪ 2x 1GbE LAN, RJ45(Supports Wake on LAN, PXE) - GbE1: Intel® I219 - GbE2: Intel® I210
COM	▪ 4x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9
USB	▪ 4 x USB 3.2 Gen2x1 (10Gbps), Type A ▪ 4 x USB 3.2 Gen1x1 (5Gbps), Type A
Storage	
SSD/HDD	▪ 2x 2.5" SATA HDD/SSD Bay Supporting Hot Swap Function (SATA 3.0)
mSATA	▪ 2x mSATA Socket (SATA 3.0, shared by Mini-PCIe socket)
RAID	▪ Support RAID 0/1/5/10

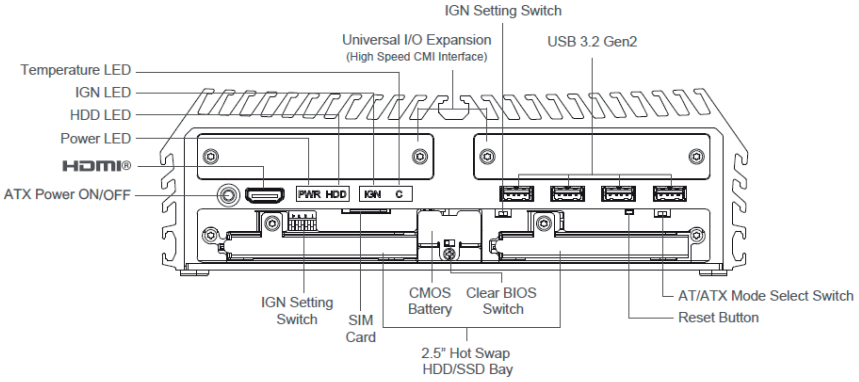
Expansion	
Mini PCI Express	▪ 1x Full-size Mini PCIe Socket (mPCIe / USB 2.0 / mSATA), Support Storage/Add-on Card Expansion ▪ 1x Full-size Mini PCIe Socket (mPCIe / USB 3.2 / mSATA), Support 5G/GNSS/Storage/Add-on Card Expansion
M.2 E Key Socket	▪ 1x M.2 Key E Type 2230 Socket (PCIe Gen 3x2 / USB2.0 / CNVi), Support Wireless / Bluetooth / Storage / Intel CNVi Module Expansion
SIM Socket	▪ 1x SIM Socket
CMI (Combined Multiple I/O) Interface	▪ 2x High Speed CMI Interface for optional CMI Module Expansion ▪ 1x Low Speed CMI Interface for optional CMI Module Expansion
CFM (Control Function Module) Interface	▪ 1x CFM IGN Interface for optional CFM-IGN Module Expansion
Other Function	
External FAN Connector	▪ 1x External FAN Connector, 4-pin Terminal Block (Support Smart Fan by BIOS)
Clear CMOS Switch	▪ 1x Clear CMOS Switch
Reset Button	▪ 1x Reset Button
Instant Reboot	▪ Support 0.2sec Instant Reboot Technology
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset
Power	
Power Button	▪ 1x ATX Power On/Off Button
Power Mode Switch	▪ 1x AT/ATX Mode Switch
Power Input	▪ 9-48VDC, 3-pin Terminal Block
Remote Power On/Off	▪ 1x Remote Power On/Off, 2-pin Terminal Block
Max. Power Consumption	▪ 35WCPU: 201.17W ▪ 65WCPU: 274.80W - Test conducted with CPU, 1x RAM, and 1x storage - 100% load during burn-in testing
Inrush Current (Peak)	▪ 35W CPU: 4.151 A@24V ▪ 65W CPU: 4.360 A@24V
Physical	
Dimension (W x D x H)	▪ 242 x 173 x 75 mm
Weight Information	▪ 3.05 kg
Mechanical Construction	▪ Extruded Aluminum with Heavy Duty Metal
Mounting	▪ Wall / DIN-RAIL / VESA / Side Mount
Physical Design	▪ Fanless Design ▪ Cableless Design ▪ Jumper-less Design ▪ Unibody Design
Reliability & 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
CMOS Battery Backup	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation
MTBF	▪ 394,488 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3

Operating System	
Windows	▪ Windows®11, Windows® 10
Linux	▪ Ubuntu Desktop 22.04 LTS
Environment	
Operating Temperature	▪ 35W TDP Processor: -40°C to 70°C (-40°F to 158°F) ▪ 45W TDP Processor: -40°C to 60°C (-40°F to 140°F) (With External Fan Kit) ▪ 65W TDP Processor: -40°C to 50°C (-40°F to 122°F) (With External Fan Kit) - 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 (-40°F to 185°F)
Relative Humidity	▪ 95% RH @ 70°C (Non-condensing)
Shock	▪ MIL-STD-810G
Vibration	▪ MIL-STD-810G
EMC	▪ CE, UKCA, FCC, ICES-003 Class A
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	▪ UL, cUL, CB, IEC, EN 62368-1
Railway	▪ EMC: EN 50155: 2021 Clause 4.4.6, 13.4.9 - EN 50121-1 : 2017 - EN 50121-3-2: 2016 + A1: 2019 ▪ Simulated Long Life Test: EN 50155: 2021 Clause 13.4.10.2 - EN/IEC 61373: 2010 Clause 9, Category 1 Class B Body mounted ▪ Vibration: EN 50155: 2021 Clause 13.4.10.4 - EN/IEC 61373: 2010 Clause 8, Category 1 Class B Body mounted ▪ Shock: EN 50155: 2021 Clause 13.4.10.3 - EN/IEC 61373: 2010 Clause 10, Category 1 Class A and Class B Body mounted
Fire Protection	▪ EN 45545-2
In-Vehicle	▪ E-Mark

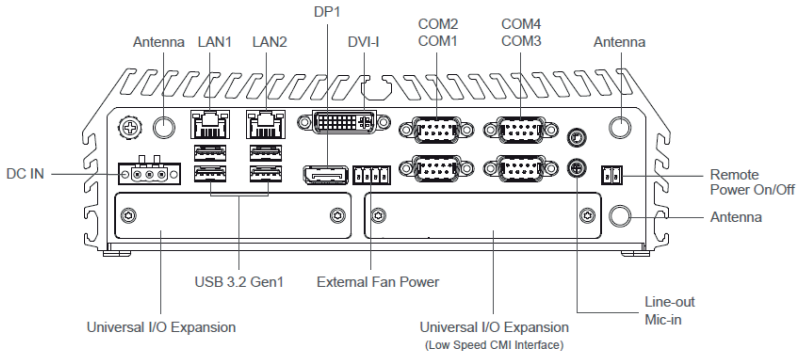
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External Layout

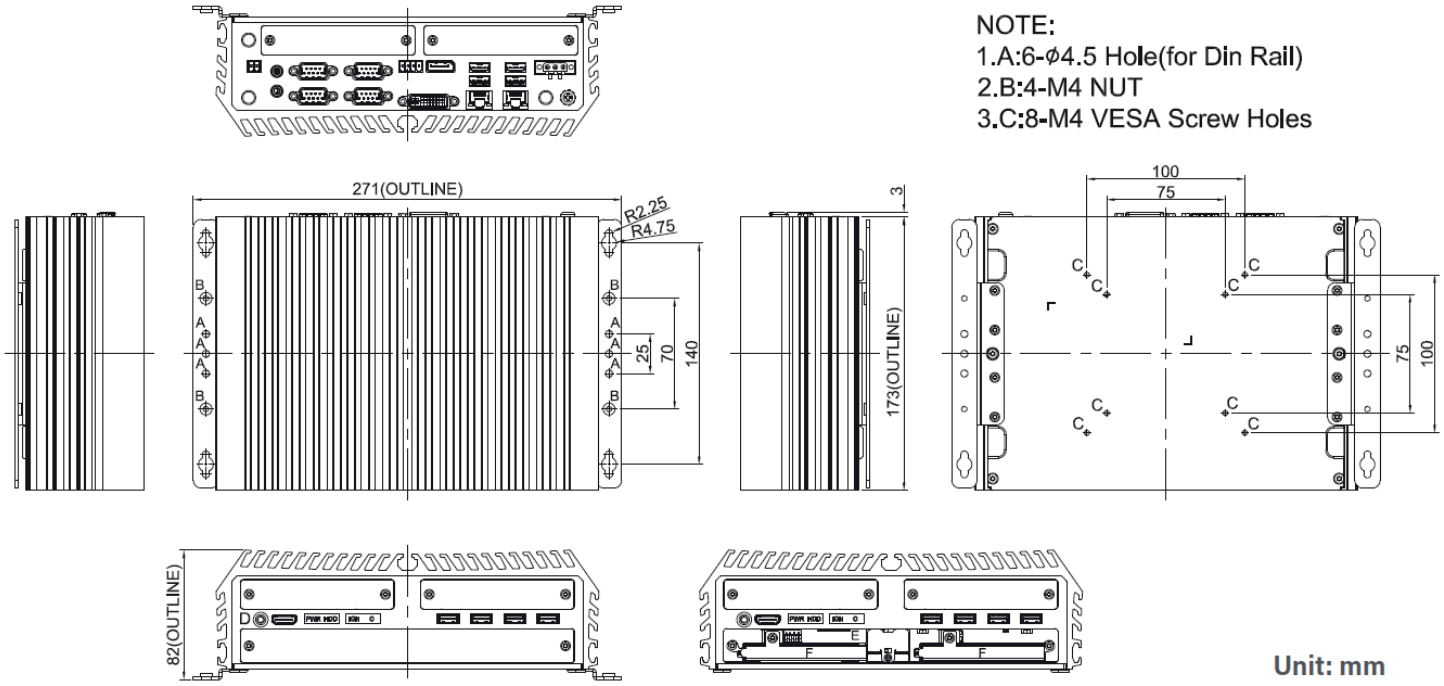
Front I/O



Rear I/O



Dimensions



Ordering Information

Available Models

Model No.	Description
DX-1200-R10	BTL-S/14/13/12th Gen. Intel® Core Series High Performance and Compact Rugged Embedded Computer

Package Checklist

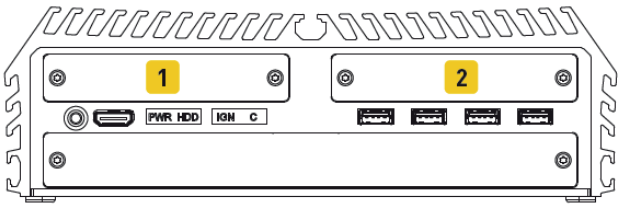
▪ DX-1200 Rugged Computer x1	▪ Power Terminal Block Connector x1
▪ CPU Heatsink Pack x1	▪ Remote Power On/Off Terminal Block Connector x 1
▪ Screw Pack x 1	▪ Fan Terminal Block Connector x 1
▪ Wall Mounting Kit x1	▪ DVI-I to VGA Adaptor x 1

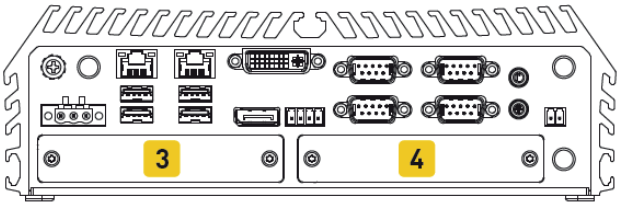
Optional Modules and Accessories

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	CMI Module with 4x RJ45 Intel I210 1GbE LAN Ports
CMI-2P5GLAN01-R10	CMI Module with 4x Intel 2.5GbE LAN, RJ45 Port
CMI-10GLAN05-R10	CMI Module with 2x Intel 10GbE LAN, RJ45 Port
CMI-M12LAN01-R12	CMI Module with 4 x M12 Intel I210 1GbE LAN Ports
CMI-XM12LAN01-R10	CMI Module with M12 X-Coded Connector, 4x Intel I210 1GbE LAN Ports
CMI-10GXM12LAN01-R10	CMI Module with 2x Intel 10GbE LAN, M12 X-Coded Connector
CMI-CAN01-R10	CMI Module with 2x CAN FD Ports
CMI-DIO01	CMI Module with 16DIO (8in 8out)
CMI-COM01	CMI Module with 2x RS232/422/485 (Support 5V/12V)
MEC-COM-M212-TDB9	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Thin DB9 Cable
MEC-COM-M334-TDB9	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 2x Thin DB9 Cable
MEC-LAN-M102-30	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable
UB0930-R10	Universal Bracket with 4x M12 X-Coded Cutout
UB0932-R10	Universal Bracket with 3x Antenna Cutout
UB1303	Universal Bracket with 2x DB9 Cutout
UB1311	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion
UB1318	Universal Bracket with DIO Cutout
UB1710-R10	Universal Bracket with 4x M12 A-Coded Cutout
UB1712-R10	Universal Bracket with 4x RJ45 Cutout
UB1728-R10	Universal Bracket with 2x RJ45 Cutout for CMI-10GLAN Expansion

UB1737-R10	Universal Bracket with 2x M12 X-coded Cutout
UB1738-R10	Universal Bracket with 2x DB9 and 1× Switch Cutout for CMI-CAN Expansion
SIDE-DX	DX Series side mount kit
DIN01	DIN-RAIL Mount Kit, KMRH-K175
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug and 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
PPM-I360-01-R10	360W Power Protection Module for DV/DX Series

Optional Module Configuration





Model No.	Description	1	2	3	4
UB0932-R10 	Universal Bracket with 3x Antenna Cutout	V	V	V	V
CMI-LAN01-R12/UB1712-R10 	CMI Module with 4x Intel I210 1GbE LAN, RJ45 Port / Universal Bracket with 4x RJ45 Cutout	V	V	-	-
CMI-2P5GLAN01-R10/UB1712-R10 	CMI Module with 4x Intel 2.5GbE LAN, RJ45 Port / Universal Bracket with 4x RJ45 Cutout	V	V	-	-
CMI-10GLAN05-R10/UB1728-R10 	CMI Module with 2x Intel 10GbE LAN, RJ45 Port/ Universal Bracket with 2x RJ45 Cutout	V	V	-	-
CMI-M12LAN01-R12/UB1710-R10 	CMI Module with M12 Connector, 4x Intel 1GbE LAN / Universal Bracket with 4x M12 A-Coded Cutout	V	V	-	-
CMI-XM12LAN01-R10/UB0930-R10 	CMI Module with M12 X-Coded Connector, 4x Intel I210 1GbE LAN Ports / Universal Bracket with 4x M12 X-Coded Cutout	V	V	-	-
CMI-10GXM12LAN01-R10/UB1737-R10 	CMI Module with 2x Intel 10GbE LAN, M12 X-Coded Connector / Universal Bracket with 2x M12 X-coded Cutout	V	V	-	-
CMI-CAN01-R10 /UB1738-R10 	CMI Module with 2x CAN FD Ports / Universal Bracket with 2x DB9 and 1x Switch Cutout for CMI-CAN Expansion	V	V	-	-

CMI-DIO01/UB1318 	CMI Module with 16DIO (8in 8out) / Universal Bracket with DIO Cutout	-	-	-	V
CMI-COM01/UB1303 	CMI Module with 2x RS232/422/485 (Support 5V/12V) / Universal Bracket with 2x DB9 Cutout	-	-	-	V
MEC-COM-M212-TDB9/UB1303 	Mini-PCIe Module with 2x RS-232 Serial Ports, 1x Thin DB9 Cable / Universal Bracket with 2x DB9 Cutout	-	-	V	V
MEC-COM-M334-TDB9/2xUB1303 	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 2x Thin DB9 Cable / 2x Universal Bracket with 2x DB9 Cutout	-	-	V	V
MEC-LAN-M102-30/UB1311 	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	-	-	V	-

V : Compatible

cincoze™

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

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