

# DS-1300

10th Generation Intel® Xeon/Core™ Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer



**High Performance, Highly Expandable**



## Overview

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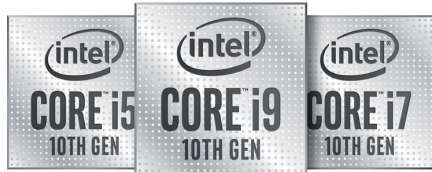
The DS-1300 is a powerful embedded computer and brings unrivalled performance. It has versatile functionalities and rich industrial I/O. Equipped with Cincoze's CMI, CFM, MEC modular expansion, customization for additional I/O or other functionality to fulfill different applications couldn't be easier. The DS-1300 meets the requirements of industrial environments and is certified with industry standards. It delivers ultimate and reliable performance for factory automation, industrial automation and rolling stock applications.

### Key Features

- 10-core 10th-gen Intel® Xeon® and Core™ i9/i7/i5/i3 CPU (max 80 W TDP)
- 2x GbE LAN and optional 2x 10GbE LAN
- 2x 2.5" SATA storage, 3x mSATA sockets, 1x M.2 key M for NVMe SSD
- 3x full-size Mini PCIe sockets, 2x SIM card slots
- Optional CMI modules for I/O expansion
- Optional CFM modules for ignition sensing & PoE
- Wide operating temperature -40°C to 70°C
- MIL-STD-810G military standard and EN50155 (EN 50121-3-2 only)

### Certifications





**10-CORE & 80W**  
Workstation Grade Processor Support!

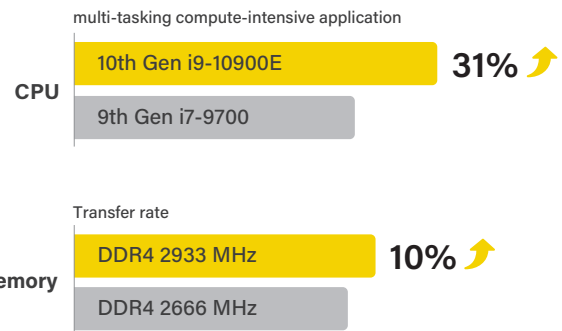
10-Core,  
Up To 80 W CPU

The DS-1300 series, powered by a workstation-grade 10th-gen Intel® Xeon® or Core™ i9/i7/i5/i3 CPU with up to 10-core architecture, provides superior processing performance. The DS-1300 supports Xeon® CPU up to 80 W TDP. It incorporates DDR4 2933/2666 MHz memory up to 128 GB, delivering unparalleled performance in a rugged, fanless system.

More Powerful & Faster  
Multiplies Productivity

The DS-1300 series's 10th-gen CPU brings to 31% better integer multi-tasking for compute-intensive application performance than 9th-gen CPUs\*. DDR4 2933 MHz memory further increases speed by 10%\*\*\*. The processing platform delivers the performance required to consolidate multiple workloads for intelligent devices and applications.

\* 31% increase for 10th-gen i9-10900E 65W vs 9th-gen i7-9700 65W CPU  
\*\* 10% increase for 2933 MHz of DS-1300 vs 2666 MHz of DS-1200.

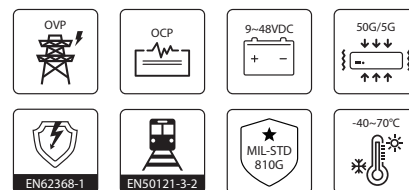


Industrial I/O and  
Modular Expansion

The DS-1300 series offers a vast array of industrial-focused I/O including up to 2x GbE LAN, 6x USB 3.2, and 2x USB 2.0, 2x RS232/422/485, 2x 2.5" SATA, 3x mSATA, 1x M.2 key M for NVMe SSD, 2x SIM card slots, 3x full-size Mini-PCIe and triple independent displays (DisplayPort, HDMI, VGA). It also features modular expansion through Cincoze's CMI/CFM modules, adding additional I/O or other functionality such as high-speed 10GbE LAN, PoE, and ignition sensing.

Rugged Reliability  
Against Rigorous Environments

The DS-1300 series's fanless and cableless industrial-grade design can withstand rigorous environments. Its unique thermal design supports an extended operating temperature range from -40°C to 70°C. It has also passed stringent industry standards, including MIL-STD-810G military standard and EN50155 (EN 50121-3-2 only) for rolling stock environments.



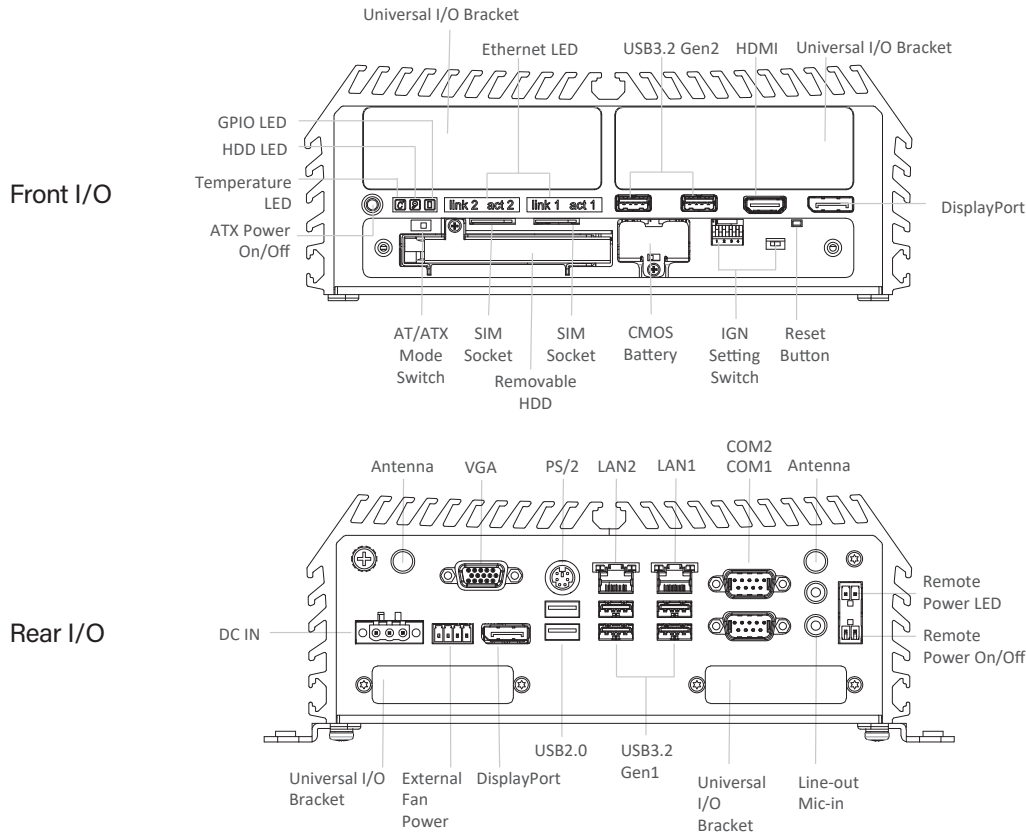
## Specifications

Model Name	DS-1300
<b>System</b>	
Processor	<ul style="list-style-type: none"> <li>Intel® Xeon® Series Processor ( 80W / 35W ):               <ul style="list-style-type: none"> <li>- Intel® Xeon® W-1270E 8 Cores Up to 4.8 GHz, TDP 80W</li> <li>- Intel® Xeon® W-1250E 6 Cores Up to 4.7 GHz, TDP 80W</li> <li>- Intel® Xeon® W-1290TE 10 Cores Up to 4.5 GHz, TDP 35W</li> <li>- Intel® Xeon® W-1270TE 8 Cores Up to 4.4 GHz, TDP 35W</li> <li>- Intel® Xeon® W-1250TE 6 Cores Up to 3.8 GHz, TDP 35W</li> </ul> </li> <li>Intel® Core® Series Processor ( 65W / 35W ):               <ul style="list-style-type: none"> <li>- Intel® Core™ i9-10900E 10 Cores Up to 4.7 GHz, TDP 65W</li> <li>- Intel® Core™ i7-10700E 8 Cores Up to 4.5 GHz, TDP 65W</li> <li>- Intel® Core™ i5-10500E 6 Cores Up to 4.2 GHz, TDP 65W</li> <li>- Intel® Core™ i3-10100E 4 Cores Up to 3.8 GHz, TDP 65W</li> <li>- Intel® Core™ i9-10900TE 10 Cores Up to 4.5 GHz, TDP 35W</li> <li>- Intel® Core™ i7-10700TE 8 Cores Up to 4.5 GHz, TDP 35W</li> <li>- Intel® Core™ i5-10500TE 6 Cores Up to 3.7 GHz, TDP 35W</li> <li>- Intel® Core™ i3-10100TE 4 Cores Up to 3.6 GHz, TDP 35W</li> </ul> </li> </ul>
Chipset	<ul style="list-style-type: none"> <li>Intel® W480E Chipset</li> </ul>
Memory	<ul style="list-style-type: none"> <li>2x DDR4 2933/2666/2400 SO-DIMM Socket</li> <li>* Xeon / i9 / i7 Processor Supports Up to 2933MHz</li> <li>* i5 / i3 Processor Supports Up to 2666 MHz</li> <li>Supports Un-buffered and Non-ECC Type Up to 64GB</li> </ul>
BIOS	<ul style="list-style-type: none"> <li>AMI BIOS</li> </ul>
<b>Graphics</b>	
Graphics Engine	<ul style="list-style-type: none"> <li>Integrated Intel® UHD-630 Graphics</li> </ul>
Maximum Display Output	<ul style="list-style-type: none"> <li>Supports Triple Independent Display</li> </ul>
HDMI	<ul style="list-style-type: none"> <li>1 x HDMI Connector (4096 x 2160@30Hz)</li> </ul>
DP	<ul style="list-style-type: none"> <li>2x DisplayPort Connector (4096 x 2304 @ 60Hz, According to CPU Specifications)</li> <li>* Verified maximum resolution: 3840x2160.</li> </ul>
VGA	<ul style="list-style-type: none"> <li>1 x VGA Connector (1920 x 1200 @60Hz)</li> </ul>
<b>Audio</b>	
Audio Codec	<ul style="list-style-type: none"> <li>Realtek® ALC888, High Definition Audio</li> </ul>
Line-out	<ul style="list-style-type: none"> <li>1 x Line-out, Phone Jack 3.5mm</li> </ul>
Mic-in	<ul style="list-style-type: none"> <li>1 x Mic-in, Phone Jack 3.5mm</li> </ul>
<b>I/O</b>	
LAN	<ul style="list-style-type: none"> <li>2 x GbE LAN, RJ45</li> <li>- GbE1: Intel® I219</li> <li>- GbE2: Intel® I210</li> </ul>
COM	<ul style="list-style-type: none"> <li>2 x RS-232/422/485 with Auto Flow Control ( Supports 5V / 12V ), DB9</li> </ul>
USB	<ul style="list-style-type: none"> <li>2 x 10Gbps USB 3.2 Gen2, Type A</li> <li>4 x 5Gbps USB 3.2 Gen1, Type A</li> <li>2 x 480Mbps USB 2.0, Type A</li> </ul>
PS/2	<ul style="list-style-type: none"> <li>1 x PS/2, 6 Pin Mini-DIN Female Connector</li> </ul>
<b>Storage</b>	
SSD/HDD	<ul style="list-style-type: none"> <li>1x 2.5" Front Accessible SATA HDD/SSD Bay ( SATA 3.0 )</li> <li>1x 2.5" Internal SATA HDD/SSD Bay ( SATA 3.0 )</li> </ul>
mSATA	<ul style="list-style-type: none"> <li>3x mSATA Socket ( SATA 3.0, shared by Mini-PCIe socket )</li> </ul>
M.2 SSD	<ul style="list-style-type: none"> <li>1x M.2 Key M Type 2280 Socket, Support PCIe x4 NVMe SSD or SATA SSD ( SATA 3.0 )</li> </ul>

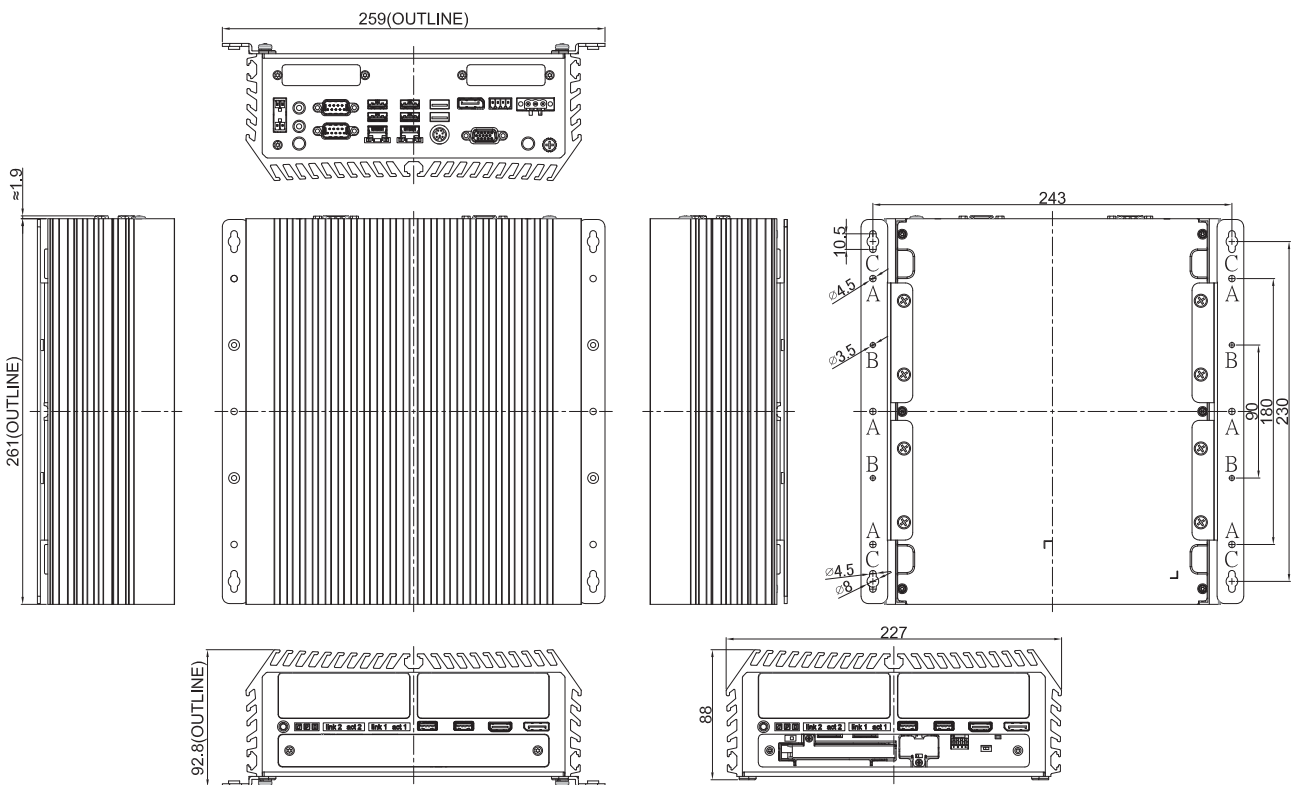
RAID	• Support RAID 0/1/5/10
<b>Expansion</b>	
Mini PCI Express	• 3 x Full-size Mini-PCIe Socket
SIM Socket	• 2 x SIM Socket
CMI (Combined Multiple I/O) Interface	• 2 x High Speed CMI Interface for optional CMI Module Expansion • 2 x Low Speed CMI Interface for optional CMI Module Expansion
CFM (Control Function Module) Interface	• 1 x CFM IGN Interface for optional CFM-IGN Module Expansion
<b>Other Function</b>	
External FAN Connector	• 1 x External FAN Connector, 4-pin Terminal Block (Support Smart Fan by BIOS)
Power Ignition Sensing	• Support Power Ignition Sensing Function with Delay Time Management and Selectable 12V/24V (With Optional CFM Module)
Clear CMOS Switch	• 1 x Clear CMOS Switch
Reset Button	• 1 x Reset Button
Instant Reboot	• Support 0.2sec Instant Reboot Technology
Watchdog Timer	• Software Programmable Supports 256 Levels System Reset
<b>Power</b>	
Power Button	• 1 x ATX Power On/Off Button
Power Mode Switch	• 1 x AT/ATX Mode Switch
Power Input	• 9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	• 1 x Remote Power On/Off, 2-pin Terminal Block
Remote Power LED	• 1 x Remote Power LED, 2-pin Terminal Block
Total Power Budget	• 180W
<b>Physical</b>	
Dimension ( W x D x H )	• 227 x 261 x 88 mm
Weight Information	• 4.5 KG
Mechanical Construction	• Extruded Aluminum with Heavy Duty Metal
Mounting	• Wall Mount
Physical Design	• Fanless Design • Cableless Design • Jumper-less Design • Unibody Design
<b>Reliability &amp; Protection</b>	
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	• 371,393 Hours - Database: Telcordia SR-332 Issue 3, Method 1, Case 3
<b>Operating System</b>	
Windows	• Windows® 10

Linux	<ul style="list-style-type: none"> <li>• Supports by project</li> </ul>
<b>Environment</b>	
Operating Temperature	<ul style="list-style-type: none"> <li>• 35W TDP Processor: -40°C to 70°C</li> <li>• 58W – 65W TDP Processor: -40~50°C (With External Fan Kit)</li> <li>• 80W TDP Processor: -40~40°C (With External Fan Kit)</li> </ul> <p>* 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</p>
Storage Temperature	<ul style="list-style-type: none"> <li>• -40°C to 85°C</li> </ul>
Relative Humidity	<ul style="list-style-type: none"> <li>• 95%RH @ 70°C (non-Condensing)</li> </ul>
Ingress Protection	<ul style="list-style-type: none"> <li>• IP30 Compliant * According to IEC60529</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• MIL-STD-810G</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• MIL-STD-810G</li> </ul>
EMC	<ul style="list-style-type: none"> <li>• CE, UKCA, FCC, ICES-003 Class A</li> <li>• EN 50155 (EN 50121-3-2 Only)</li> </ul>
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 50121-3-2 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A</li> <li>• EN/BS EN61000-3-3 Voltage fluctuations &amp; flicker</li> <li>• FCC 47 CFR Part 15B, ICES-003 Conducted &amp; Radiated: Class A</li> </ul>
EMS	<ul style="list-style-type: none"> <li>• EN/IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV</li> <li>• EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 20 V/m</li> <li>• EN/IEC 61000-4-4 EFT: AC Power: 2 kV; Signal: 2 kV</li> <li>• EN/IEC 61000-4-5 Surges: AC Power: 2 kV</li> <li>• EN/IEC 61000-4-6 CS: 10V</li> <li>• EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m</li> <li>• EN/IEC 61000-4-11 Voltage Dips &amp; Voltage Interruptions: 0.5 cycles at 50 Hz</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• IEC/EN 62368-1</li> </ul>

**External Layout**



**Dimensions**



Unit: mm

## Ordering Information

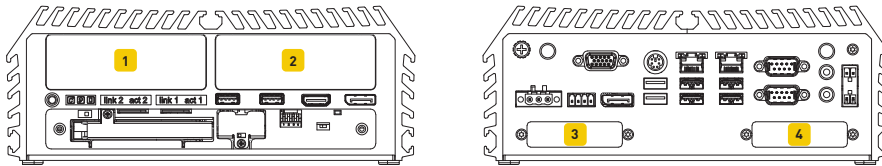
### Available Models








Model No.	Description
DS-1300-R10	10th Generation Intel® Xeon/Core™ Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer

### Package Checklist




• DS-1300 Embedded System x1	• Heatsink Pack x1
• Wall Mount Kit x1	• Screw Pack x1
• Remote Function Terminal Block Connector x 2	• Power Terminal Block Connector x1
• Fan Terminal Block Connector x 1	

### Optional I/O Modules



Model No.	Description	1	2	3	4
 CMI-LAN01-R12/UB1012	CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout	V	V	-	-
 CMI-M12LAN01-R12/UB1010	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 Cutout	V	V	-	-
 CMI-10GLAN03-R10/UB1028	CMI Module with 2x Intel X550 10GbE LAN, RJ45 Port / 1x Universal Bracket with 2x RJ45 Cutout	V	-	-	-
 CMI-COM02/UB1004	CMI Module with 4x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout	V	V	-	-
 CMI-ICOM01/UB1004	CMI Module with 4x Isolated RS232 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout	V	V	-	-
 CMI-DIO02/UB1018	CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout	V	V	-	-
 CMI-XM12LAN01-R10/UB1030-R10	CMI Module with M12 X-Coded Connector, 4x Intel I210 GbE LAN Ports / Universal Bracket with 4x M12 X-Coded Cutout	V	V	-	-

V : Compatible

Model No.	Description	1	2	3	4
MEC-COM-M212-DB9 /UB0303 	Mini-PCIe Module with 2x RS-232 Ports, 1x Standard DB9 Cable / 2x Universal Bracket each with 1x DB9 Cutout	-	-	V	V
MEC-USB-M102-30 /UB0314 	Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x30 cm cable, 1x Universal Bracket with 2x USB Cutout	-	-	V	V
MEC-LAN-M102-30/UB0311 	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout	-	-	V	V

Remark:

Maximum one CMI-COM02 or CMI-ICOM01 module can be installed in this system.

V : Compatible

### Optional Function Modules

Model No.	Description
CFM-PoE03	CFM Module with PoE Function, Individual Port 25.5W
CFM-IGN101	CFM Module with Power Ignition Sensing Function, 12V/24V Selectable

### Optional Accessories

Model No.	Description
FAN-EX101	External Fan with 4pin Terminal Block Plug and Mounting Bracket, Support Smart Fan
GST120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug and Tubes, Level VI

Updated: Apr. 25, 2024

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## Assured Systems

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