

# DS-1300

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



**High Performance, Highly Expandable**



## Overview

CONTACT

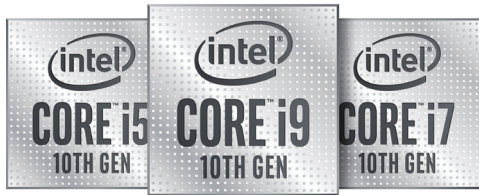
The DS-1300 is a powerful embedded computer and brings unrivalled performance. It has versatile functionalities and rich industrial I/O. Equipped with Cincoze's CMI, CFM, MEC modular expansion, customization for additional I/O or other functionality to fulfill different applications couldn't be easier. 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**

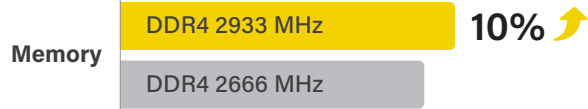
The DS-1300 series's 10th-gen CPU brings to 31% better integer multi-tasking for compute-intensive application performance than 9th-gen CPUs\*. DDR4 2933 MHz memory further increases speed by 10%\*\*.

\* 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.

multi-tasking compute-intensive application



Transfer rate

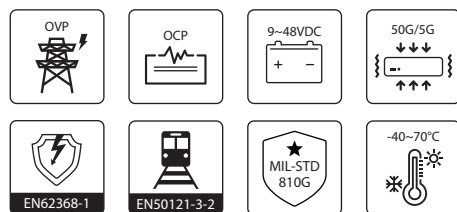


**Industrial I/O and  
Modular Expansion**

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.



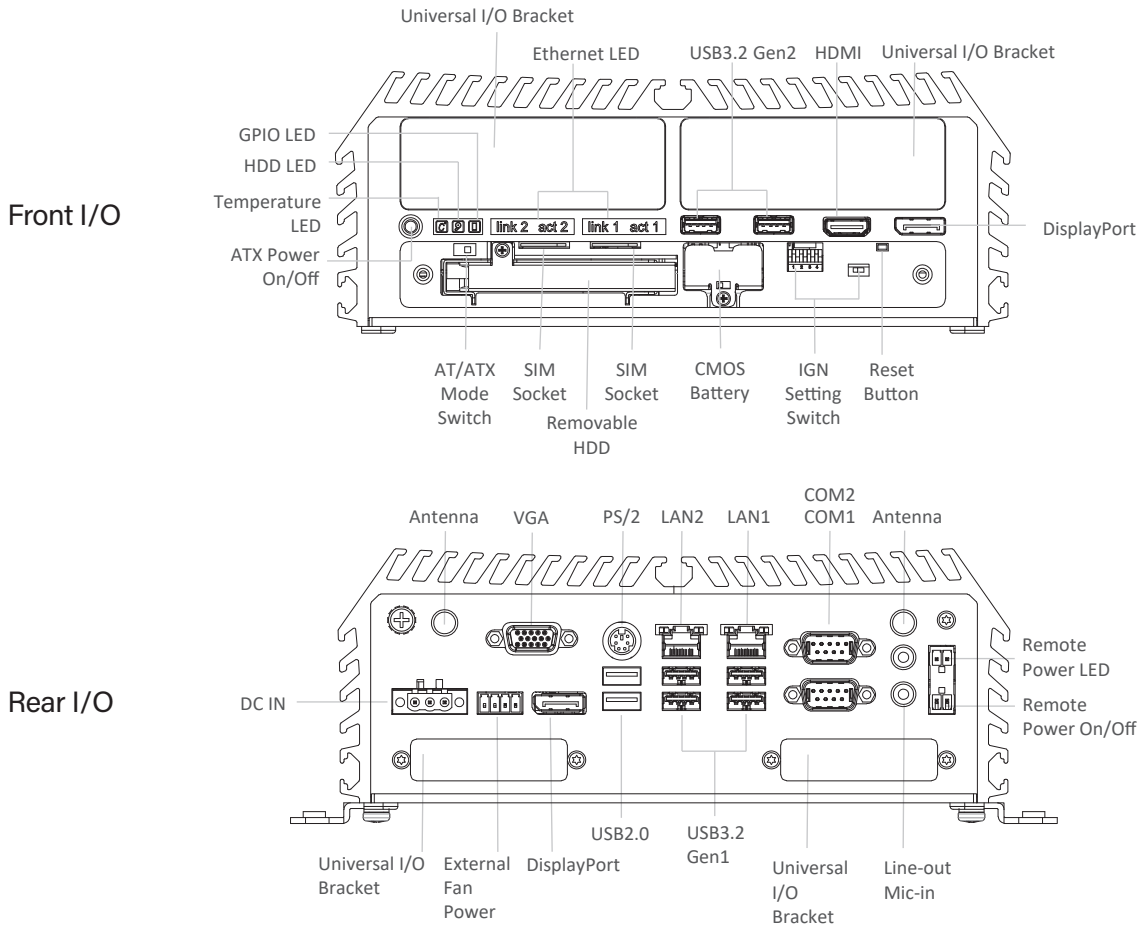
## Specifications

| 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>  |

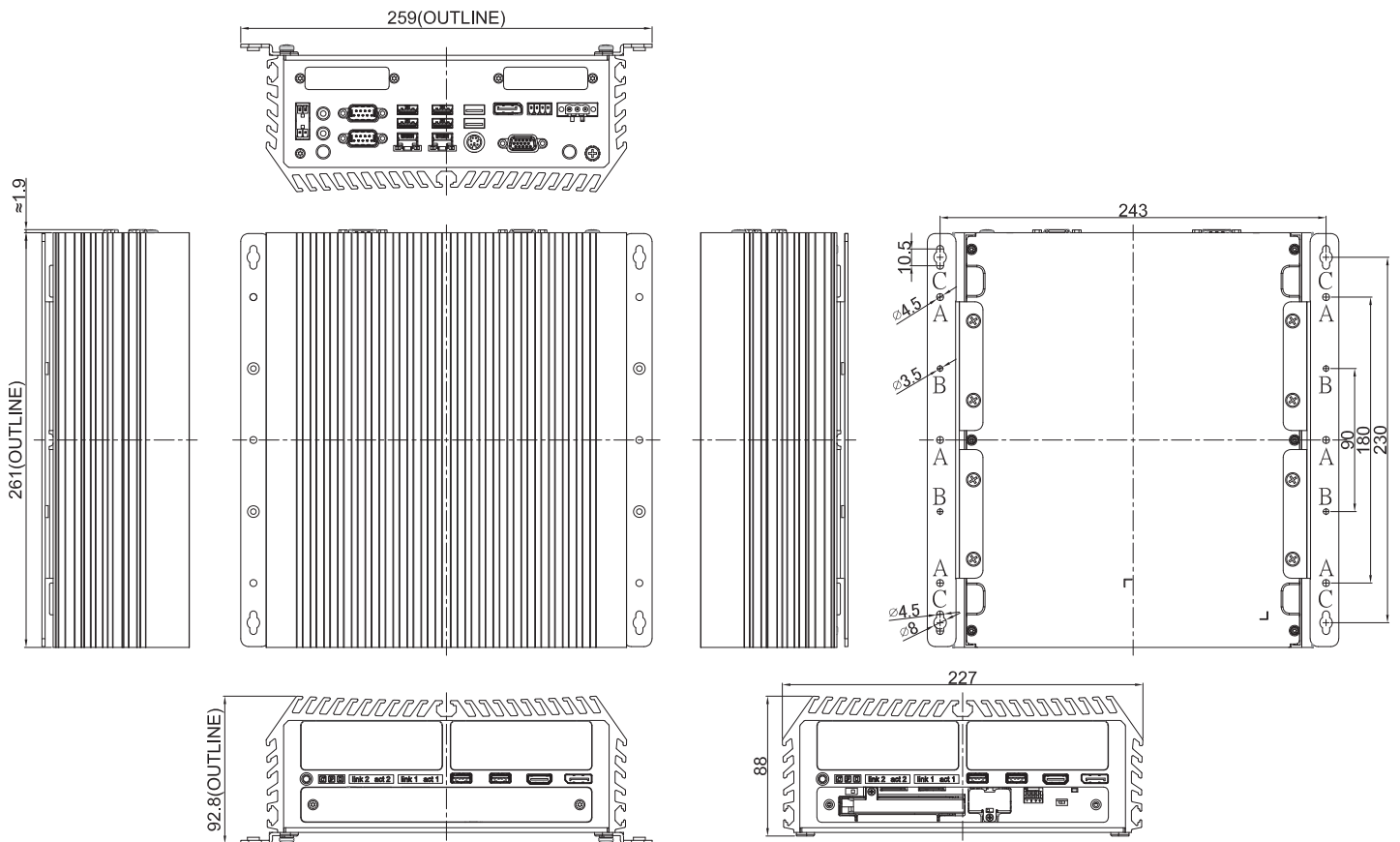
|   |   |
|---|---|
| RAID                                    | <ul style="list-style-type: none"> <li>• Support RAID 0/1/5/10</li> </ul>   |
| <b>Expansion</b>                        |   |
| Mini PCI Express                        | <ul style="list-style-type: none"> <li>• 3 x Full-size Mini-PCIe Socket</li> </ul>  |
| SIM Socket                              | <ul style="list-style-type: none"> <li>• 2 x SIM Socket</li> </ul>  |
| CMI (Combined Multiple I/O) Interface   | <ul style="list-style-type: none"> <li>• 2 x High Speed CMI Interface for optional CMI Module Expansion</li> <li>• 2 x Low Speed CMI Interface for optional CMI Module Expansion</li> </ul> |
| CFM (Control Function Module) Interface | <ul style="list-style-type: none"> <li>• 1 x CFM IGN Interface for optional CFM-IGN Module Expansion</li> </ul>   |
| <b>Other Function</b>                   |   |
| External FAN Connector                  | <ul style="list-style-type: none"> <li>• 1 x External FAN Connector, 4-pin Terminal Block (Support Smart Fan by BIOS)</li> </ul>  |
| Power Ignition Sensing                  | <ul style="list-style-type: none"> <li>• Support Power Ignition Sensing Function with Delay Time Management and Selectable 12V/24V (With Optional CFM Module)</li> </ul>                    |
| Clear CMOS Switch                       | <ul style="list-style-type: none"> <li>• 1 x Clear CMOS Switch</li> </ul>   |
| Reset Button                            | <ul style="list-style-type: none"> <li>• 1 x Reset Button</li> </ul>  |
| Instant Reboot                          | <ul style="list-style-type: none"> <li>• Support 0.2sec Instant Reboot Technology</li> </ul>  |
| Watchdog Timer                          | <ul style="list-style-type: none"> <li>• Software Programmable Supports 256 Levels System Reset</li> </ul>  |
| <b>Power</b>                            |   |
| Power Button                            | <ul style="list-style-type: none"> <li>• 1 x ATX Power On/Off Button</li> </ul>   |
| Power Mode Switch                       | <ul style="list-style-type: none"> <li>• 1 x AT/ATX Mode Switch</li> </ul>  |
| Power Input                             | <ul style="list-style-type: none"> <li>• 9 - 48VDC, 3-pin Terminal Block</li> </ul>   |
| Remote Power On/Off                     | <ul style="list-style-type: none"> <li>• 1 x Remote Power On/Off, 2-pin Terminal Block</li> </ul>   |
| Remote Power LED                        | <ul style="list-style-type: none"> <li>• 1 x Remote Power LED, 2-pin Terminal Block</li> </ul>  |
| Total Power Budget                      | <ul style="list-style-type: none"> <li>• 180W</li> </ul>  |
| <b>Physical</b>                         |   |
| Dimension ( W x D x H )                 | <ul style="list-style-type: none"> <li>• 227 x 261 x 88 mm</li> </ul>   |
| Weight Information                      | <ul style="list-style-type: none"> <li>• 4.5 KG</li> </ul>  |
| Mechanical Construction                 | <ul style="list-style-type: none"> <li>• Extruded Aluminum with Heavy Duty Metal</li> </ul>   |
| Mounting                                | <ul style="list-style-type: none"> <li>• Wall Mount</li> </ul>  |
| Physical Design                         | <ul style="list-style-type: none"> <li>• Fanless Design</li> <li>• Cableless Design</li> <li>• Jumper-less Design</li> <li>• Unibody Design</li> </ul>                                      |
| <b>Reliability &amp; Protection</b>     |   |
| Reverse Power Input Protection          | <ul style="list-style-type: none"> <li>• Yes</li> </ul>   |
| Over Voltage Protection                 | <ul style="list-style-type: none"> <li>• Protection Range: 51~58V</li> <li>• Protection Type: shut down operating voltage, re-power on at the preset level to recover</li> </ul>            |
| Over Current Protection                 | <ul style="list-style-type: none"> <li>• 15A</li> </ul>   |
| CMOS Battery Backup                     | <ul style="list-style-type: none"> <li>• SuperCap Integrated for CMOS Battery Maintenance-free Operation</li> </ul>   |
| MTBF                                    | <ul style="list-style-type: none"> <li>• 371,393 Hours</li> <li>- Database: Telcordia SR-332 Issue 3, Method 1, Case 3</li> </ul>   |
| <b>Operating System</b>                 |   |
| Windows                                 | <ul style="list-style-type: none"> <li>• Windows® 10</li> </ul>   |

|                       |  |
|-----------------------|--|
| 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)<br/>           * With extended temperature peripherals; Ambient with air flow<br/>           * 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

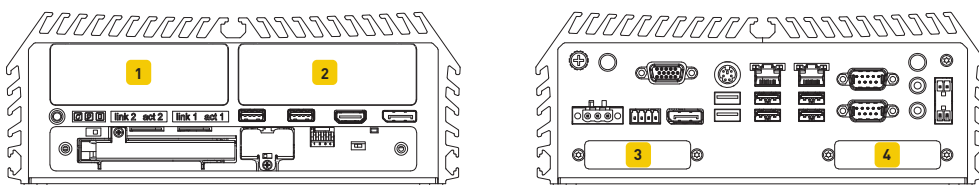
### Available Models








| 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 |
|---|---|---|---|---|---|
| <br>CMI-LAN01-R12/ UB1012        | CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout                       | V | V | - | - |
| <br>CMI-M12LAN01-R12 /UB1010     | CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 Cutout                         | V | V | - | - |
| <br>CMI-10GLAN03-R10/UB1028      | CMI Module with 2x Intel X550 10GbE LAN, RJ45 Port / 1x Universal Bracket with 2x RJ45 Cutout                     | V | - | - | - |
| <br>CMI-COM02/UB1004             | CMI Module with 4x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout                 | V | V | - | - |
| <br>CMI-ICOM01/UB1004            | CMI Module with 4x Isolated RS232 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout                | V | V | - | - |
| <br>CMI-DIO02/UB1018             | CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout   | V | V | - | - |
| <br>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 | - | - |

| Model No.   | Description   | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| MEC-COM-M212-DB9 /UB0303<br> | 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<br>  | Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x30 cm cable, 1x Universal Bracket with 2x USB Cutout         | - | - | V | - |
| MEC-LAN-M102-30/UB0311<br>   | 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      |