

# DI-1000

6th Generation Intel® Core™ Processor (Skylake-U) High Performance, Compact and Modular Rugged Embedded Computer



## Overview

[CONTACT](#)

Cincoze DI-1000 Series is a high-performance, compact and modular fanless embedded computer powered by 6th generation Intel® Core™ mobile processor (Skylake-U), it integrates Intel® HD graphic engine and accommodates one DDR4 socket up to 32 GB which allows DI-1000 Series to fulfill all kinds of high-end computing demands. Extremely compact size with dimension 203 x 142 x 66.8 mm, comprising unbeatable I/O such as DVI-I, DP, 2x LAN, 6x COM, 6x USB, 8x Optical Isolated DIO, PS/2, Mic-in, Line-out, and remote power on/off switch, supporting two full-size Mini-PCle slots for wireless communication and I/O expansion, accommodating two 2.5" SATA HDD/SSD bay for RAID 0/1 function, making DI-1000 series unmatched in the market for its size and functions. DI-1000 Series weighs only 1.65 kg supporting 4 types of mounting mechanisms (Wall, DIN, Side and VESA) allowing it to be installed everywhere. The unique Cincoze's CMI (Combined Multiple I/O), CFM (Control Function Module) and MEC (Mini-PCle Card) technologies allow DI-1000 Series to be expanded according to the specific needs. The options of ready-to-use modules including Multi-LAN, M12 connections, Power Ignition Sensing and various types of I/O interface, making DI-1000 series application-ready platform for factory automation, machine vision, in-vehicle, and mobile surveillance applications. DI-1000 Series inherited the Rugged DNA design from Cincoze, featuring Fan-less design, cable-less design, wide operating temperature (-40~ 70°C), wide range DC input (9~48 VDC), high tolerance for shock and vibration, high standard electric protection, Long MTBF hours and integrated SuperCAP for CMOS battery maintenance-free. Those Rugged features making DI-1000 series suitable to be deployed in harsh and demanding environment.

## Key Features

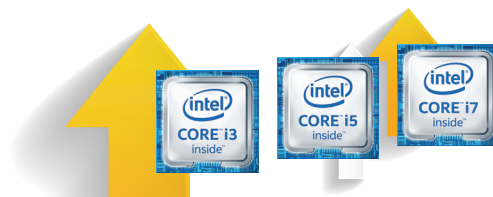
- Onboard 6th Generation Intel® Core™ Mobile Processor (BGA Type)
- 1x DDR4 SO-DIMM Socket, 2133MHz, Supports Up to 32 GB
- Triple Independent Display (DVI-I, DisplayPort)
- Compact Size 203 x 142 x 66.8 mm with Light Weight 1.65 kg
- 1x Hot-swappable 2.5" SATA HDD/SSD Bay and 1x Internal 2.5" SATA HDD/SSD Bay, Supports RAID 0/1
- Rich I/O Including DVI, DP, 2x GbE LAN, 6x COM, 6x USB, 8x Optical Isolated DIO
- Supports Cincoze CMI Technology for LAN & M12 Connector Expansion
- Supports Cincoze CFM Technology for Power Ignition Sensing (IGN) Function Expansion
- Cincoze MEC Module Kits for Various I/O Expansion
- 2x Full-size Mini-PCle Slots for Wireless and I/O Expansion
- Wide Operating Temperature (-40°C to 70°C)
- E-Mark (E13, No.10R-0514273) Certified

## Certifications



## High Performance

- Onboard 6th Generation Intel® Core™ Mobile Processor
- Performance Enhanced by Intel® 14 nm Technology
- Extremely Low Power Consumption 15W TDP
- Intel® HD Graphics Supports Triple Independent Display Resolution Up to Ultra HD 4K

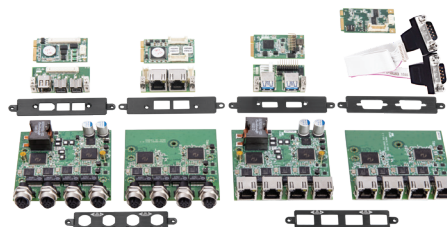


## Compact Size

- Compact Size 203 x 142 x 66.8 mm with Light Weight 1.65 kg
- Rich I/O for Greater Device Connectivity (DVI, DisplayPort, 2x GbE LAN, 6x COM, 6x USB, 8x Optical Isolated DIO, PS/2)

## Modular Design

- CMI (Combined Multiple I/O) Technology for LAN and M12 Connector Expansion
- CFM (Control Function Module) Technology for Power Ignition Sensing (IGN) Function Expansion
- Mini-PCIe Module Kits for Various I/O Expansion



## Specifications

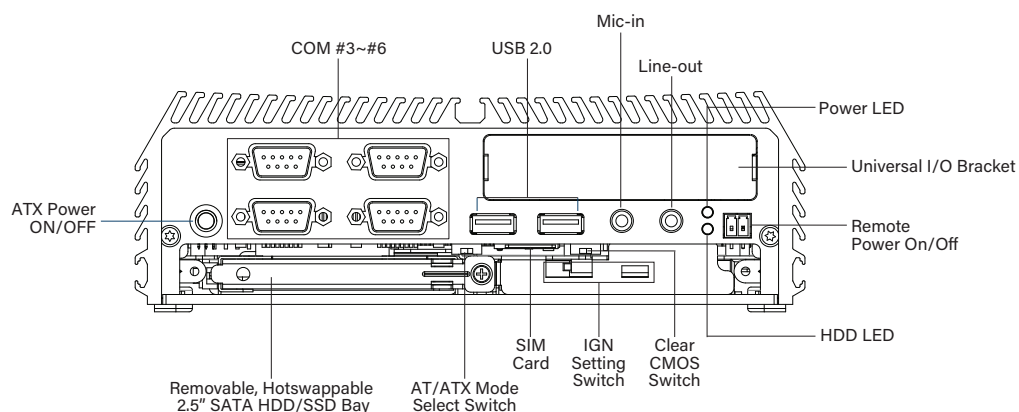
| Model Name                              | DI-1000                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System</b>                           |                                                                                                                                                                                                                                                                                                    |
| Processor                               | <ul style="list-style-type: none"> <li>On board Intel® Core™ i7-6600U Processor (4M Cache, up to 3.40 GHz, 15W TDP)</li> <li>Onboard Intel® Core™ i5-6300U Processor (3M Cache, up to 3.00 GHz, 15W TDP)</li> <li>Onboard Intel® Core™ i3-6100U Processor (3M Cache, 2.30 GHz, 15W TDP)</li> </ul> |
| Chipset                                 | <ul style="list-style-type: none"> <li>SoC</li> </ul>                                                                                                                                                                                                                                              |
| BIOS                                    | <ul style="list-style-type: none"> <li>AMI 8Mbit SPI BIOS</li> </ul>                                                                                                                                                                                                                               |
| Memory                                  | <ul style="list-style-type: none"> <li>1x DDR4 260-pin SO-DIMM Socket, Support up to 32 GB (2133MHz, Un-buffered and Non-ECC type)</li> </ul>                                                                                                                                                      |
| <b>Graphics</b>                         |                                                                                                                                                                                                                                                                                                    |
| Graphics Engine                         | <ul style="list-style-type: none"> <li>Integrated Intel® HD Graphics</li> <li>Two Independent Display</li> </ul>                                                                                                                                                                                   |
| <b>Audio</b>                            |                                                                                                                                                                                                                                                                                                    |
| Audio Codec                             | <ul style="list-style-type: none"> <li>Realtek® ALC888-GR</li> <li>High Definition Audio</li> </ul>                                                                                                                                                                                                |
| <b>I/O</b>                              |                                                                                                                                                                                                                                                                                                    |
| Connector                               | <ul style="list-style-type: none"> <li>1x DVI-I Connector, Resolution 1920 x 1080</li> </ul>                                                                                                                                                                                                       |
| DisplayPort                             | <ul style="list-style-type: none"> <li>1x DisplayPort Connector (4096 x 2304 @ 60Hz, According to CPU Specifications)</li> <li>* Verified maximum resolution: 3840x2160.</li> </ul>                                                                                                                |
| LAN                                     | <ul style="list-style-type: none"> <li>2x GbE LAN (Support Wake-on-LAN, Teaming, Jumbo Frame, IEEE 1588v2 and PXE), RJ45</li> <li>- GbE1: Intel I210</li> <li>- GbE2: Intel I219-LM</li> </ul>                                                                                                     |
| Flow Control                            | <ul style="list-style-type: none"> <li>6x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9</li> </ul>                                                                                                                                                                                   |
| USB                                     | <ul style="list-style-type: none"> <li>4x USB 3.2 Gen1 (Type-A) &amp; 2x USB 2.0 (Type-A)</li> </ul>                                                                                                                                                                                               |
| Mini-DIN                                | <ul style="list-style-type: none"> <li>1x PS/2, 6-Pin Mini-DIN Female Connector</li> </ul>                                                                                                                                                                                                         |
| Terminal Block                          | <ul style="list-style-type: none"> <li>1x Mic-in and 1x Line-out, Phone Jack 3.5mm</li> </ul>                                                                                                                                                                                                      |
| Mic-in                                  | <ul style="list-style-type: none"> <li>1x Mic-in, Phone Jack 3.5mm</li> </ul>                                                                                                                                                                                                                      |
| Terminal Block                          | <ul style="list-style-type: none"> <li>8x Optical Isolated DIO (4x DI, 4x DO), 10-Pin Terminal Block Support 5~48V</li> </ul>                                                                                                                                                                      |
| Line-out                                | <ul style="list-style-type: none"> <li>1x Line-out, Phone Jack 3.5mm</li> </ul>                                                                                                                                                                                                                    |
| ATX Power                               | <ul style="list-style-type: none"> <li>1x ATX Power On/Off Button</li> </ul>                                                                                                                                                                                                                       |
| Mode Switch                             | <ul style="list-style-type: none"> <li>1x AT/ATX Mode Switch</li> </ul>                                                                                                                                                                                                                            |
| CMOS Switch                             | <ul style="list-style-type: none"> <li>1x Clear CMOS Switch</li> </ul>                                                                                                                                                                                                                             |
| Remote Power On/Off Connector           | <ul style="list-style-type: none"> <li>1x Remote Power On/Off Connector, 2-Pin Terminal Block</li> </ul>                                                                                                                                                                                           |
| <b>Storage</b>                          |                                                                                                                                                                                                                                                                                                    |
| SSD / HDD                               | <ul style="list-style-type: none"> <li>2x 2.5" SATA HDD/SSD Bay, Support RAID 0/1 (Gen3) (One Internal, One Front Accessible &amp; Hot-swappable)</li> </ul>                                                                                                                                       |
| mSATA                                   | <ul style="list-style-type: none"> <li>2x mSATA (shared by Mini-PCIe socket) (Gen3)</li> </ul>                                                                                                                                                                                                     |
| <b>Expansion</b>                        |                                                                                                                                                                                                                                                                                                    |
| CFM (Control Function Module) Interface | <ul style="list-style-type: none"> <li>1x CFM Interface for Cincoze CFM Modules</li> </ul>                                                                                                                                                                                                         |
| CMI (Combined Multiple I/O) Interface   | <ul style="list-style-type: none"> <li>1x CMI Interface for Cincoze CMI Modules</li> </ul>                                                                                                                                                                                                         |

|                                |                                                                                                                                                                                                   |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mini-PCle                      | • 2x Full-size Mini-PCle Sockets for Wireless & I/O Expansion                                                                                                                                     |
| SIM Socket                     | • 1x SIM Socket                                                                                                                                                                                   |
| <b>Other Function</b>          |                                                                                                                                                                                                   |
| Instant Reboot                 | • Support Instant Reboot Technology (0.2 sec)                                                                                                                                                     |
| WatchDog Timer                 | • Software Programmable Supports 256 Levels System Reset                                                                                                                                          |
| CMOS                           | • SuperCap Integrated for CMOS Battery Maintenance-free                                                                                                                                           |
| <b>Power Requirement</b>       |                                                                                                                                                                                                   |
| Power Type                     | • AT / ATX                                                                                                                                                                                        |
| Power Supply Voltage           | • 9~48VDC                                                                                                                                                                                         |
| Connector                      | • One 3-Pin Terminal Block Connector                                                                                                                                                              |
| Power Adaptor                  | • Optional Power Adapter AC/DC 12V/5A 60W or 24V/5A 120W                                                                                                                                          |
| <b>Physical</b>                |                                                                                                                                                                                                   |
| Dimension ( W x D x H )        | • 203 x 142 x 66.8 mm                                                                                                                                                                             |
| Weight                         | • 1.65 kg                                                                                                                                                                                         |
| Construction                   | • Extruded Aluminum with Heavy Duty Metal                                                                                                                                                         |
| Mounting                       | • Support Wall / Side / DIN-RAIL / VESA Mounting                                                                                                                                                  |
| Physical Design                | <ul style="list-style-type: none"> <li>• Fanless Design</li> <li>• Cable-less Design</li> <li>• Unibody Chassis</li> <li>• Jumper-less Design</li> </ul>                                          |
| <b>Protection</b>              |                                                                                                                                                                                                   |
| Reverse Power Input Protection | • Yes                                                                                                                                                                                             |
| 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        | • 15A                                                                                                                                                                                             |
| ESD Protection                 | • +/-8kV (air), +/-4kV (contact)                                                                                                                                                                  |
| Surge Protection               | • 2 kV                                                                                                                                                                                            |
| <b>Operating System</b>        |                                                                                                                                                                                                   |
| Windows                        | • Windows® 10 / 8.1 / 7                                                                                                                                                                           |
| <b>Environment</b>             |                                                                                                                                                                                                   |
| Operating Temperature          | <ul style="list-style-type: none"> <li>• -40°C to 70°C</li> <li>(With extended temperature peripherals; Ambient with air flow; According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)</li> </ul> |
| Storage Temperature            | • -40°C to 85°C                                                                                                                                                                                   |
| Relative Humidity              | • 95% RH @ 40°C (Non-condensing)                                                                                                                                                                  |
| Shock                          | • Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)                                                                                                               |
| Vibration                      | • Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)                                                                                                                        |
| 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> <li>• E-mark</li> </ul>                                                     |

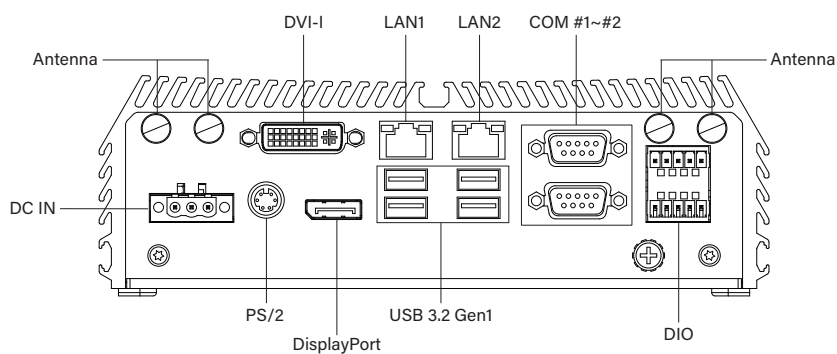
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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> |
| MTBF | <ul style="list-style-type: none"><li>• Time: 360,145 Hours</li><li>• Calculation Model: Telcordia SR-332 Issue 3, Method 1, Case 3</li><li>• Environment: GB, GC</li><li>• Temperature: 40°C</li></ul>                                                                                                                                                                                                                                             |

## External Layout

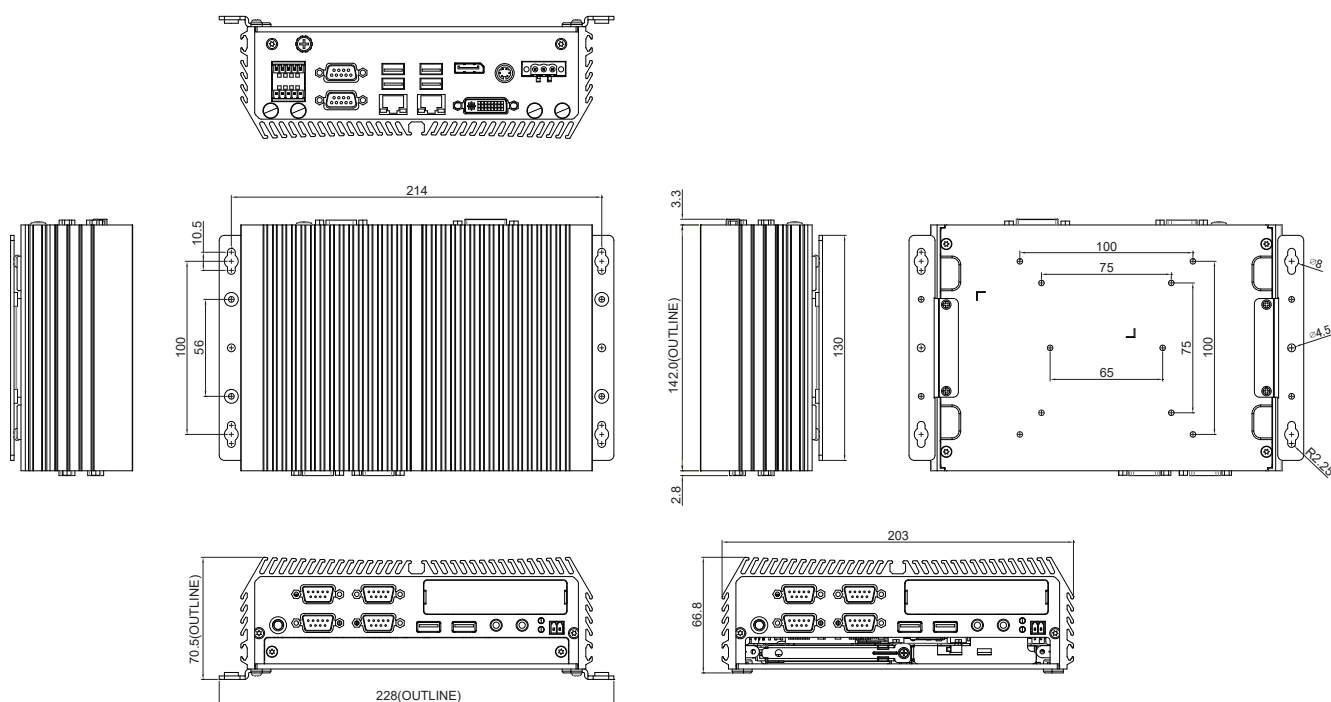
Front



Rear



## Dimensions



Unit: mm

Ordering Information

Available Models

| Model No.      | Description                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------|
| DI-1000-i7-R11 | 6th Gen. Intel® Core™ i7-6600U High Performance, Compact and Modular Rugged Embedded Computer |
| DI-1000-i5-R11 | 6th Gen. Intel® Core™ i5-6300U High Performance, Compact and Modular Rugged Embedded Computer |
| DI-1000-i3-R11 | 6th Gen. Intel® Core™ i3-6100U High Performance, Compact and Modular Rugged Embedded Computer |

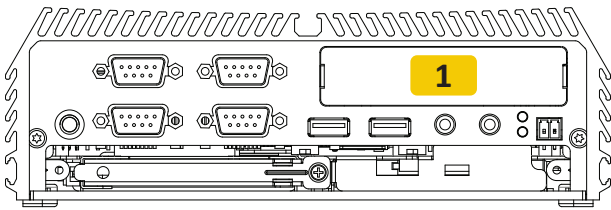
Package Checklist

|                                |                                                    |
|--------------------------------|----------------------------------------------------|
| • DI-1000 Embedded System 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               | • DIO Terminal Block Connector x 2                 |
| • Wall Mounting Kit x 1        | • DVI-I to VGA Adaptor                             |

Optional Modules & Accessories

| Model No.               | Description                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------|
| CFM-IGN102              | CFM Module with Power Ignition Sensing Control Function, Selectable 12V/24V                                    |
| CMI-LAN01-R12/UB0712    | CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket                                        |
| CMI-M12LAN01-R12/UB0710 | CMI Module with M12 Connector, 4x Intel I210 GbE LAN / 1x Universal Bracket                                    |
| MEC-COM-M212-DB9/UB0703 | Mini-PCIe Module with 2x COM Ports, 1x Standard DB9 Cable, 1x Universal Bracket with 2x DB9 Cutout for DI-1000 |
| MEC-LAN-M102-15/UB0711  | Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket                                                      |
| DIN01                   | DIN-RAIL Mount Kit, KMRH-K175                                                                                  |
| SIDE01                  | SIDE Mount Kit                                                                                                 |
| GST60A12-CIN1           | Adapter AC/DC 12V 5A 60W with 3pin Terminal Block Plug 5.0mm Pitch, with Tubes, Level VI                       |
| GST120A24-CIN           | Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug 5.0mm Pitch, with Tubes, Level VI                      |

Optional Module Configuration



| Model No.                                                                                                            | Description                                                                                                    | 1 |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---|
| <div>CMI-LAN01-R12/UB0712</div>     | CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket                                        | V |
| <div>CMI-M12LAN01-R12/UB0710</div>  | CMI Module with M12 Connector, 4x Intel I210 GbE LAN / 1x Universal Bracket                                    | V |
| <div>MEC-COM-M212-DB9/UB0703</div>  | Mini-PCle Module with 2x COM Ports, 1x Standard DB9 Cable, 1x Universal Bracket with 2x DB9 Cutout for DI-1000 | V |
| <div>MEC-LAN-M102-15/UB0711</div>  | Mini-PCle Module with 2x LAN Ports / 1x Universal Bracket                                                      | V |

V : Compatible