

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-PCIe 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-PCIe 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

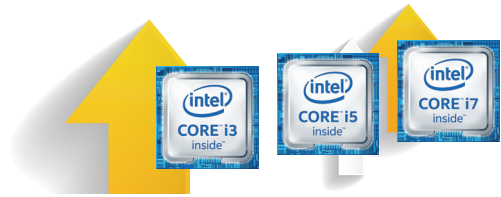
- Onboard 6th Generation Intel® Core™ Mobile Processor (BGA Type)
- 1x DDR4 SO-DIMM Socket, 2133MHz, Supports Up to 32 GB
- Triple Independent Display (DVI-I, DisplayPort)
- Compact Size 203 x 142 x 66.8 mm with Light Weight 1.65 kg
- 1x Hot-swappable 2.5" SATA HDD/SSD Bay and 1x Internal 2.5" SATA HDD/SSD 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-PCIe 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

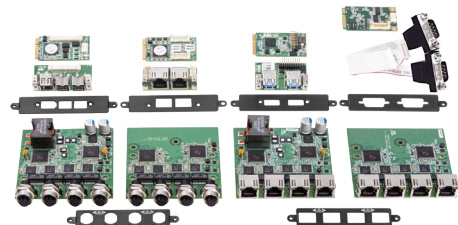


Compact Size

- 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



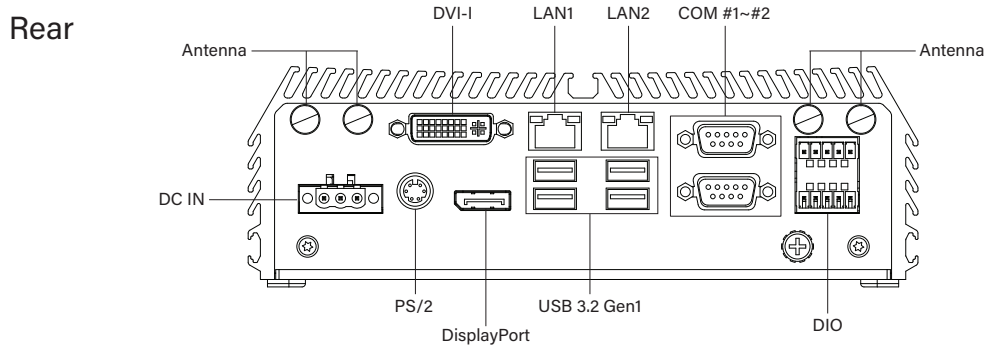
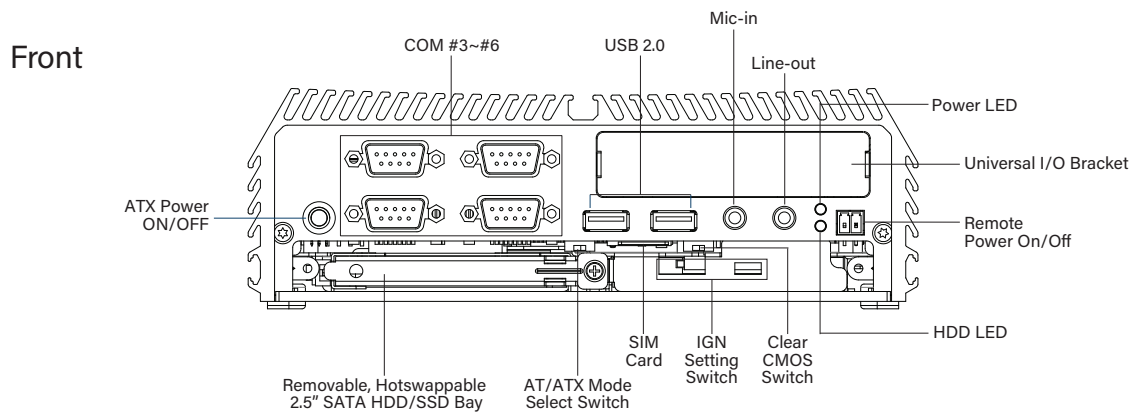
Specifications

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

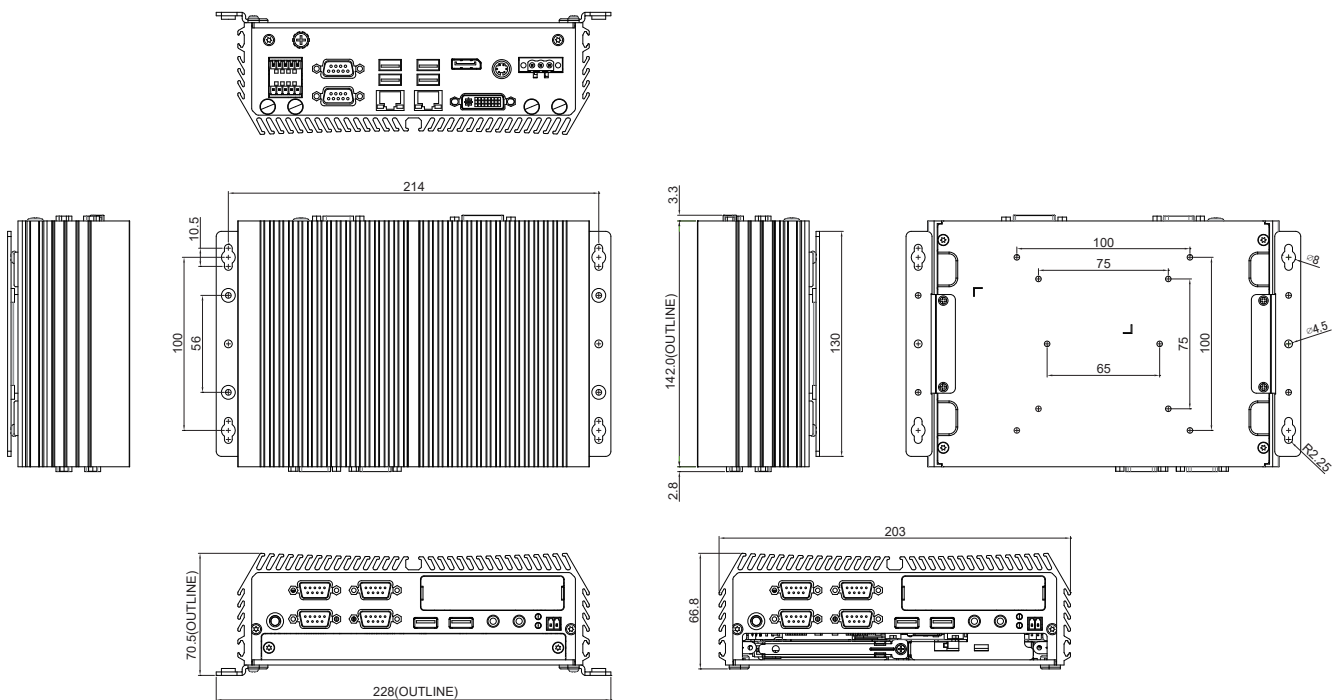
Mini-PCle	<ul style="list-style-type: none"> • 2x Full-size Mini-PCle Sockets for Wireless & I/O Expansion
SIM Socket	<ul style="list-style-type: none"> • 1x SIM Socket
Other Function	
Instant Reboot	<ul style="list-style-type: none"> • Support Instant Reboot Technology (0.2 sec)
WatchDog Timer	<ul style="list-style-type: none"> • Software Programmable Supports 256 Levels System Reset
CMOS	<ul style="list-style-type: none"> • SuperCap Integrated for CMOS Battery Maintenance-free
Power Requirement	
Power Type	<ul style="list-style-type: none"> • AT / ATX
Power Supply Voltage	<ul style="list-style-type: none"> • 9~48VDC
Connector	<ul style="list-style-type: none"> • One 3-Pin Terminal Block Connector
Power Adaptor	<ul style="list-style-type: none"> • Optional Power Adapter AC/DC 12V/5A 60W or 24V/5A 120W
Physical	
Dimension (W x D x H)	<ul style="list-style-type: none"> • 203 x 142 x 66.8 mm
Weight	<ul style="list-style-type: none"> • 1.65 kg
Construction	<ul style="list-style-type: none"> • Extruded Aluminum with Heavy Duty Metal
Mounting	<ul style="list-style-type: none"> • Support Wall / Side / DIN-RAIL / VESA Mounting
Physical Design	<ul style="list-style-type: none"> • Fanless Design • Cable-less Design • Unibody Chassis • Jumper-less Design
Protection	
Reverse Power Input Protection	<ul style="list-style-type: none"> • Yes
Over Voltage Protection	<ul style="list-style-type: none"> • Protection Range: 51~58V • Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	<ul style="list-style-type: none"> • 15A
ESD Protection	<ul style="list-style-type: none"> • +/-8kV (air), +/-4kV (contact)
Surge Protection	<ul style="list-style-type: none"> • 2 kV
Operating System	
Windows	<ul style="list-style-type: none"> • Windows® 10 / 8.1 / 7
Environment	
Operating Temperature	<ul style="list-style-type: none"> • -40°C to 70°C (With extended temperature peripherals; Ambient with air flow; According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
Storage Temperature	<ul style="list-style-type: none"> • -40°C to 85°C
Relative Humidity	<ul style="list-style-type: none"> • 95% RH @ 40°C (Non-condensing)
Shock	<ul style="list-style-type: none"> • Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)
Vibration	<ul style="list-style-type: none"> • Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)
EMC	<ul style="list-style-type: none"> • CE, UKCA, FCC, ICES-003 Class A • EN 50155 (EN 50121-3-2 Only) • E-mark

<p>EMI</p>	<ul style="list-style-type: none"> • 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
<p>EMS</p>	<ul style="list-style-type: none"> • 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: AC Power: 2 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
<p>MTBF</p>	<ul style="list-style-type: none"> • Time: 360,145 Hours • Calculation Model: Telcordia SR-332 Issue 3, Method 1, Case 3 • Environment: GB, GC • Temperature: 40°C

External Layout



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

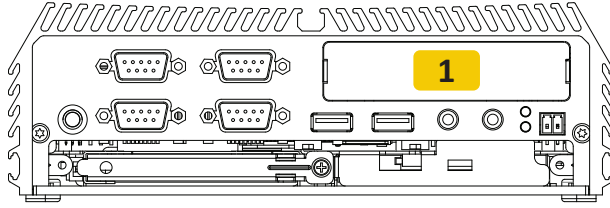
Package Checklist





• 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
<p>CMI-LAN01-R12/UB0712</p> 	<p>CMI Module with 4x Intel I210 GbE LAN, RJ45 Port / 1x Universal Bracket</p>	<p>V</p>
<p>CMI-M12LAN01-R12/UB0710</p> 	<p>CMI Module with M12 Connector, 4x Intel I210 GbE LAN / 1x Universal Bracket</p>	<p>V</p>
<p>MEC-COM-M212-DB9/UB0703</p> 	<p>Mini-PCIe Module with 2x COM Ports, 1x Standard DB9 Cable, 1x Universal Bracket with 2x DB9 Cutout for DI-1000</p>	<p>V</p>
<p>MEC-LAN-M102-15/UB0711</p> 	<p>Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket</p>	<p>V</p>

V : Compatible