DS-1202

9/8th Generation Intel® Core™ Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer with 2x PCI/PCIe Expansion Slots



- Supports 9/8th Generation Intel® Core™ / Pentium® / Celeron® Octa Cores 35W/65W LGA 1151 Processors
- 2x DDR4 SO-DIMM Socket, Supports Up to 2666MHz, 64GB
- Triple Independent Displays: 1x DVI-I and 2x DP (4K Resolution)
- 1x M.2 2280 M Key Socket, Auto-detection for PCIex4 NVMe SSD or SATA Gen3 SSD
- 2x Front Accessible SIM Card Slots for Signal Redundancy
- 2x PCI/PCIe Slots for Add-on Cards (Maximum Length: 235 mm)
- 4x CMI Slots for Modular I/O Expansions
- 1x CFM Slot for Power Ignition Sensing Function
- Wide Operating Temperature (-40°C to 70°C)
- EN50155 (EN50121-3-2) Certified/ EN60950-1

Overview

DS-1202 is a high performance fanless embedded computer, powered by 9/8th Generation Intel® Core™ processor (Coffee Lake) with up to 8 cores and 64GB DDR4 memory capacity for unprecedented performance to fulfill all kinds of high-end computing requirements. The system also incorporates rich I/O, such as 2x Intel® GbE ports, 2x USB 3.1 (Gen2), 4x USB 3.0, 1x DVI-I, 2x DisplayPort, and 1x M.2 Key M 2280 socket for ultra-fast data transfer speed.

Based on Cincoze' innovative CMI & CFM Technology, it allows users to expand I/O and functionalities through ready-to-use modules, such as GbE/PoE ports, serial ports, optical isolated digital I/O and power ignition function. Furthermore, DS-1202 is available with two PCI(e) expansion slots to accommodate versatile add-on cards.

Designed to operate under harsh conditions, DS-1202 has passed rigorous testing like EN50155 (EN50121-3-2) and EN60950-1 to fulfill industrial applications such as rolling stock. Besides, DS-1202 features with wide operating temperature (-40°C to 70°C), wide range DC power input (from 9V to 48V), high tolerance of shock/vibration (5G/50G), and industrial-grade protections (OVP, OCP, ESD Surge, ...etc).

Highlights



High Performance

The new 9/8th Generation Intel® Core™ processor (Coffee Lake) offers for the first time up to 8 cores, 16 threads and 1.4 times computing performance improvement comparing to the previous generation (Kaby Lake).



Fully Modular and Expandable

Featuring PCI/PCIe expansion slots, Mini-PCIe slots, CMI (Combined Multiple I/O), CFM (Control Function Module), and versatile ready-to-use modules, DS-1202 provides great flexibility to configure the system according to your need.



Wide Temperature

DS-1202 is designed for continuous operation in wide temperature range from -40°C to 70°C. In addition, it also features with anti-shock/vibration and ESD/surge protection for tough industrial environ-ments.

Specifications

Processor
- 9th Generation Intel® Coffee Lake-R S Series CPU:
  - Intel® Core™ i7-9700E 8 Cores Up to 4.4 GHz, TDP 65W
  - Intel® Core™ i5-9500E 6 Cores Up to 4.2 GHz, TDP 65W
  - Intel® Core™ i3-9100E 4 Cores Up to 3.7 GHz, TDP 65W
  - Intel® Core™ i7-9700TE 8 Cores Up to 3.8 GHz, TDP 35W
  - Intel® Core™ i5-9500TE 6 Cores Up to 3.6 GHz, TDP 35W
  - Intel® Core™ i3-9100TE 4 Cores Up to 3.2 GHz, TDP 35W
- 8th Generation Intel® Coffee Lake S Series CPU:
  - Intel® Core™ i7-8700 6 Cores Up to 4.6 GHz - 12M Cache, TDP 65W
  - Intel® Core™ i5-8500 6 Cores Up to 4.1 GHz - 9M Cache, TDP 65W
  - Intel® Core™ i3-8100 4 Cores 3.6 GHz - 6M Cache, TDP 65W
  - Intel® Core™ i7-8700T 6 Cores Up to 4.0 GHz - 12M Cache, TDP 35W
  - Intel® Core™ i5-8500T 6 Cores Up to 3.5 GHz - 9M Cache, TDP 35W
  - Intel® Core™ i3-8100T 4 Cores 3.1 GHz - 6M Cache, TDP 35W
  - Intel® Pentium® G5400 2 Cores 3.7 GHz - 4M Cache, TDP 58W
  - Intel® Pentium® G5400T 2 Cores 3.1 GHz - 4M Cache, TDP 35W
  - Intel® Celeron® G4900 2 Cores 3.1 GHz - 2M Cache, TDP 54W
  - Intel® Celeron® G4900T 2 Cores 2.9 GHz - 2M Cache, TDP 35W

BIOS
- AMI 32MB SPI BIOS

Chipset
- Intel® Q370

Memory
- 2x DDR4-2400/2666 MHz SO-DIMM Sockets, Supports up to 64 GB (Un-buffered and Non-ECC Type)

Graphics
- Integrated Intel® UHD Graphics 630: Core™ i7/i5/i3
- Integrated Intel® UHD Graphics 610: Pentium® /Celeron®
- Supports Triple Independent Display (1x DVI-I, 2x DisplayPort)

Audio
- Realtek® ALC888
- High Definition Audio

External I/O Interface
- 1x DVI-I (DVI-D: 1920 x 1200 @60Hz / VGA: 1920 x 1080 @60Hz)
- 2x DisplayPort (DisplayPort: 4096 x 2304 @60Hz)
- 2x GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45
  - GbE1: Intel® I210-IT
  - GbE2: Intel® I219-LM
- 2x USB 3.1 Gen2 (Type A)
- 4x USB 3.0 (Type A)
- 2x USB 2.0 (Type A)
- 2x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9
- 1x PS/2, 6-pin mini-DIN Female Connector
- 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
- 1x ATX Power On/Off Button
- 1x AT/ATX Mode Switch
- 1x Clear CMOS Switch
- 1x Remote Reset Connector, 2-pin Terminal Block
- 1x Remote Power On/Off Connector, 2-pin Terminal Block
- 1x External Fan Connector, 4-Pin Terminal Block (Supports smart fan function)

Storage
- 2x 2.5" SATA HDD/SSD bay (Gen3), 1x Internal, 1x Front Accessable Supports RAID 0/1
- 3x mSATA (shared by Mini-PCIe socket) (Gen3), BIOS Selectable
- 1x M.2 Key M 2280 Socket, Supports PCIe x4 NVMe SSD or SATA SSD (Gen3)

Expansion
- 3x Full-size Mini-PCIe Socket
- 2x SIM Socket
- 1x CFM (Control Function Module) Interface
- 2x CMI (Combined Multiple I/O) High Speed Interface
- 2x CMI (Combined Multiple I/O) Low Speed Interface
- 2x Antenna Hole
- 2x PCI/PCIe Expansion slot (with Optional Riser Card)
  * Supports maximum dimensions of add-on card (H x L):111.15 x 235 mm

Other Functions
- Supports Instant Reboot Technology (0.2 sec)
- SuperCap Integrated for CMOS Battery Maintenance-free Operation
- Watchdog Timer: Software Programmable Supports 256 Levels System Reset

Power Requirement
- Supports AT/ATX Power Type
- Power Input Voltage 9~48VDC
- 1x 3-Pin Terminal Block
- Power Adapter AC/DC 24V/5A 120W or 24V/9.2A 220W (Optional)

Physical
- Dimensions (WxDxH): 227 x 261 x 128 mm
- Weight: 5.14 kg
- Construction: Extruded Aluminum with Heavy Duty Metal
- Mounting: Wall Mount
- Unibody Chassis
- Fanless Design
- Jumper-less Design

Protection
- Reverse Power Input Protection
- Over Voltage Protection: 58V
- Over Current Protection: 15A
- ESD Protection: +/-15kV (air), +/-8kV (contact)
- Surge Protection: 3.84 kV (impedance 12 ohm 1.2/50us waveform)

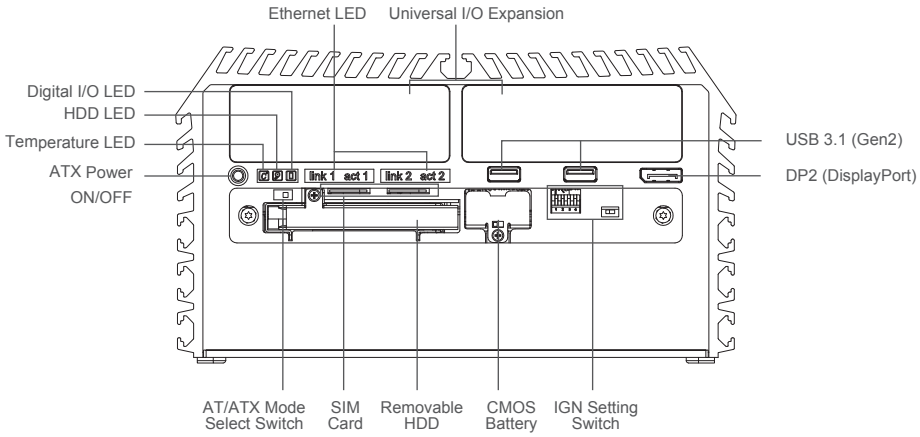
Operating System
- Windows® 10
- Linux: Supports by project

Environment
- Operating Temperature:
  35W TDP Processor: -40°C to 70°C
  51~65W TDP Processor: -40°C to 45°C
  * 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
- Storage Temperature: -40°C to 85°C
- Relative Humidity: 95%RH @ 70°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
- MTBF: 396,565 Hours

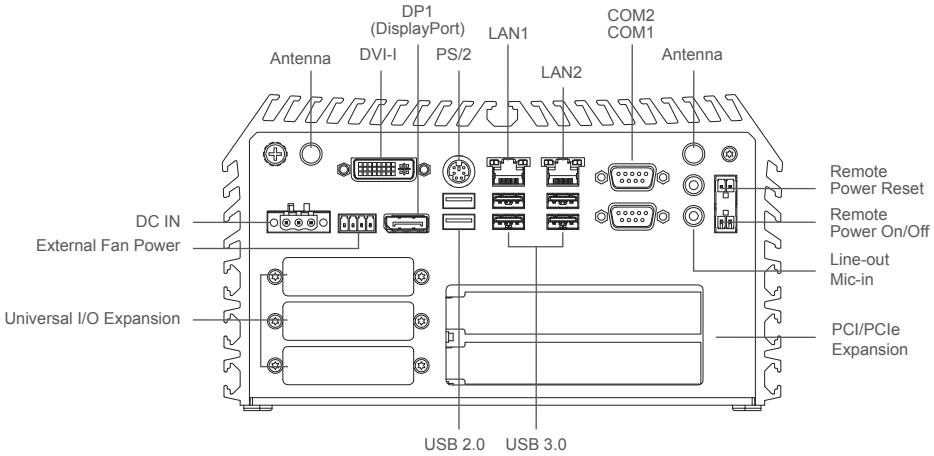
Certification
- EMC: CE, FCC Class A
- Safety: LVD, EN60950-1
- Railway: EN50155, EN50121-3-2

External Layout

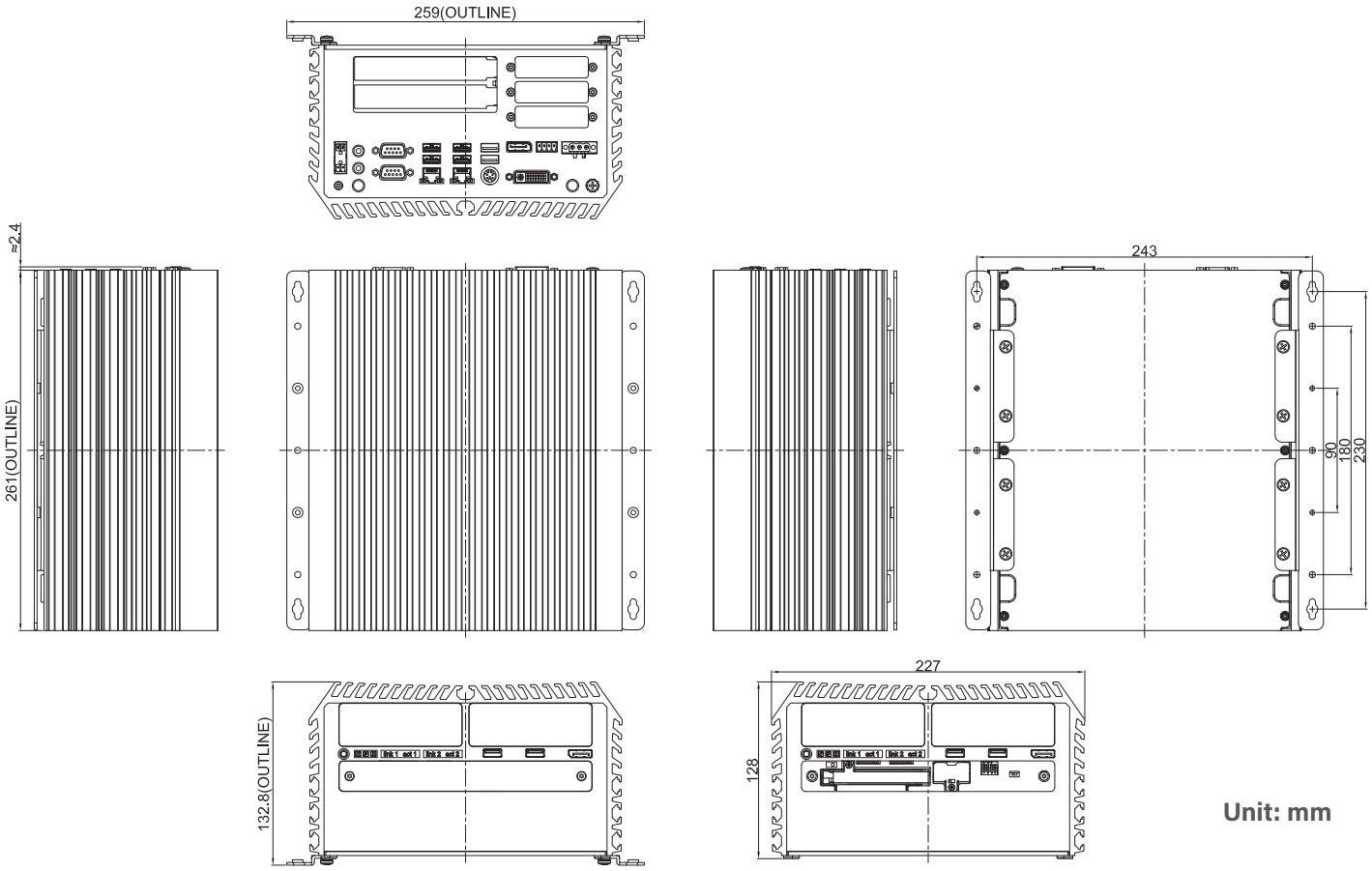
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
DS-1202-R10	9/8th Generation Intel® Core™ Series Processors, High Performance, Expandable and Modular Rugged Embedded Computer with 2x PCI/PCIe Expansion Slots

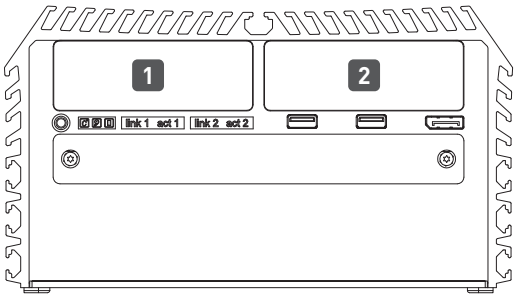
Package Checklist

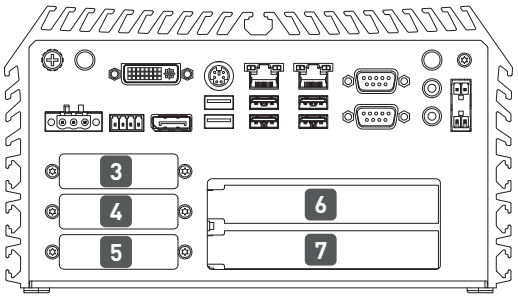
- DS-1202 Embedded System x 1
- Utility DVD Driver x 1
- Heat Sink Pack x 1
- Screw Pack x 1
- Wall Mount Kit x1
- Power Terminal Block Connector x 1
- Remote Power On/Off Terminal Block Connector x 1
- Remote Power Reset Terminal Block Connector x 1
- Fan Terminal Block Connector x 1
- DVI-I to VGA Adaptor

Optional Modules & Accessories

Model No.	Description
CFM-PoE03	CFM Module with PoE Function, Individual Port 25.5W for DS-1200 Series
CFM-IGN101	CFM Module with Power Ignition Sensing Function, 12V/24V Selectable for DS-1200/ DS-1100/ P1101 Series
CMI-LAN01-R12/UB1012	CMI Module with 4x Intel I210-AT GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout for DS-1200 Series
CMI-M12LAN01-R12/UB1010	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 Cutout for DS-1200 Series
CMI-DIO02/UB1018	CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout for DS-1200 Series
CMI-COM02/UB1004	CMI Module with 4x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout for DS-1200 Series
CMI-ICOM01/UB1004	CMI Module with 4x Isolated RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout for DS-1200 Series
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 for DS / P1000 Series
MEC-USB-M102-15/UB0314	Mini-PCIe Module with 2x USB 3.0 Ports, 1x 15cm cable / 1xUniversal Bracket with 2x USB Cutout for DS Series
MEC-LAN-M002-30/UB0311	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for DS Series
FAN-EX101	External Fan with 4pin Terminal Block Plug and Mounting Bracket, Support Smart Fan
FAN-UB100	Exhaling fan with 4pin Connector and Mounting Bracket
FAN-UB101	Inhaling fan with 4pin Connector and Mounting Bracket
PAH01	Power Adapter Holder for GST120A24
PAH02	Power Adapter Holder for GST220A24
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI
RC-E8E8-01	Riser Card with 2x PCIex8 Slots
RC-E16E1-01	Riser Card with 1x PCIex16 and 1x PCIex1 Slots
RC-E16PI-01	Riser Card with 1x PCIex16 and 1x PCI Slots
RC-PIPI-01	Riser Card with 2x PCI Slots

Optional Module Configuration





Model No.	Description	1	2	3	4	5	6	7
CMI-LAN01-R12	CMI Module with 4x Intel I210-AT GbE LAN, RJ45 Port / 1x Universal Bracket with 4x RJ45 Cutout for DS-1202 Series	V		-			-	
CMI-M12LAN01-R12	CMI Module with M12 Connector, 4x Intel GbE LAN / 1x Universal Bracket with 4x M12 Cutout for DS-1202 Series	V		-			-	
CMI-DIO02	CMI Module with 16DIO (8in 8out) / 1x Universal Bracket with DIO Cutout for DS-1202 Series	V		-			-	
CMI-COM02*	CMI Module with 4x RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout for DS-1202 Series	V		-			-	
CMI-ICOM01*	CMI Module with 4x Isolated RS232/422/485 Ports (Support 5V/12V) / 1x Universal Bracket with 4x DB9 Cutout for DS-1202 Series	V		-			-	
MEC-COM-M212-DB9	Mini-PCIe Module with 2x RS-232 Ports, 1x Standard DB9 Cable / 2x Universal Bracket each with 1x DB9 Cutout for DS / P1000 Series	-		V			-	
MEC-USB-M102-15	Mini-PCIe Module with 2x USB 3.0 Ports, 1x 15cm cable / 1xUniversal Bracket with 2x USB Cutout for DS Series	-		V			-	
MEC-LAN-M002-30	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for DS Series	-		V			-	
RC-E8E8-01	Riser Card with 2x PCIex8 Slots	-		-			V	
RC-E16E1-01	Riser Card with 1x PCIex16 and 1x PCIex1 Slots	-		-			V	
RC-E16PI-01	Riser Card with 1x PCIex16 and 1x PCI Slots	-		-			V	
RC-PIPI-01	Riser Card with 2x PCI Slots	-		-			V	

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

V : Compatible

© Cincoze Co., Ltd. All Rights Reserved. Specifications subject to change without notice.
All product names, logos, and brands are the property of their respective owners. All company, product and service names used in this document are for identification purposes only. The use of these names, logos, and brands does not imply endorsement.