Rugged Embedded Computer

DC-1300 Series

User Manual

Rugged Embedded Computer

Intel® Alder Lake-N Processor Entry Performance and Compact Rugged Embedded Computer

Version: V1.04

Contents

Preface

Revision

Revision	Description	Date
1.00	New Release	2025/02/24
1.01	Correction Made	2025/03/31
1.02	Added UL Certification	2025/09/03
1.03	Correction Made	2025/09/26
1.04	Added CMI-FAN	2025/10/27

Copyright Notice

Acknowledgement

Disclaimer

This manual is intended to be used as a practical and informative guide only and is subject to change without notice. It does not represent a commitment on the part of Cincoze. This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

Declaration of Conformity

FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can

radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE

The product(s) described in this manual complies with all application European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

UL

A product that carries the "UL Listed" approval mark means that the product has been tested by UL to nationally recognized Safety Standards and has been found to be free from reasonably foreseeable risk of fire, electric shock and related hazards.

Product Warranty Statement

Warranty

Cincoze products are warranted by Cincoze Co., Ltd. to be free from defect in materials and workmanship for 2 years from the date of purchase by the original purchaser. During the warranty period, we shall, at our option, either repair or replace any product that proves to be defective under normal operation. Defects, malfunctions, or failures of the warranted product caused by damage resulting from natural disasters (such as by lightening, flood, earthquake, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, and the product in question is either software, or an expendable item (such as a fuse, battery, etc.), are not warranted.

RMA

Before sending your product in, you will need to fill in Cincoze RMA Request Form and obtain an RMA number from us. Our staff is available at any time to provide you with the most friendly and immediate service.

- **RMA Instruction**
  - Customers must fill in Cincoze Return Merchandise Authorization (RMA) Request Form and obtain an RMA number prior to returning a defective product to Cincoze for service.
  - Customers must collect all the information about the problems encountered and note anything abnormal and describe the problems on the "Cincoze Service Form" for the RMA number apply process.

- Charges may be incurred for certain repairs. Cincoze will charge for repairs to products whose warranty period has expired. Cincoze will also charge for repairs to products if the damage resulted from acts of God, environmental or atmospheric disturbances, or other external forces through misuse, abuse, or unauthorized alteration or repair. If charges will be incurred for a repair, Cincoze lists all charges, and will wait for customer's approval before performing the repair.
- Customers agree to ensure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.
- Customers can be sent back the faulty products with or without accessories (manuals, cable, etc.) and any components from the system. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, Cincoze is not responsible for the devices/parts.
- Repaired items will be shipped along with a "Repair Report" detailing the findings and actions taken.

Limitation of Liability

Cincoze' liability arising out of the manufacture, sale, or supplying of the product and its use, whether based on warranty, contract, negligence, product liability, or otherwise, shall not exceed the original selling price of the product. The remedies provided herein are the customer's sole and exclusive remedies. In no event shall Cincoze be liable for direct, indirect, special or consequential damages whether based on contract of any other legal theory.

Technical Support and Assistance

1. Visit the Cincoze website at www.cincoze.com where you can find the latest information about the product.
2. Contact your distributor or our technical support team or sales representative for technical support if you need additional assistance. Please have following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Conventions Used in this Manual

WARNING (AVERTIR)	**This indication alerts operators to an operation that, if not strictly observed, may result in severe injury.** **(Cette indication avertit les opérateurs d'une opération qui, si elle n'est pas strictement observée, peut entraîner des blessures graves.)**

CAUTION (ATTENTION)	**This indication alerts operators to an operation that, if not strictly observed, may result in safety hazards to personnel or damage to equipment.** **(Cette indication avertit les opérateurs d'une opération qui, si elle n'est pas strictement observée, peut entraîner des risques pour la sécurité du personnel ou des dommages à l'équipement.)**

NOTE (NOTE)	**This indication provides additional information to complete a task easily.** **(Cette indication fournit des informations supplémentaires pour effectuer facilement une tâche.)**

Safety Precautions

Before installing and using this device, please note the following precautions.

1. Read these safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Disconnected this equipment from any AC outlet before cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
8. Use a power cord that has been approved for using with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by

qualified service personnel.

If one of the following situations arises, get the equipment checked by service personnel:

- The power cord or plug is damaged.
- Liquid has penetrated into the equipment.
- The equipment has been exposed to moisture.
- The equipment does not work well, or you cannot get it work according to the user's manual.
- The equipment has been dropped and damaged.
- The equipment has obvious signs of breakage.

14. CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
15. Equipment intended only for use in a RESTRICTED ACCESS AREA.
16. Output of the external power source shall comply with ES1, PS3 requirements, output rating between 9-48 VDC, minimum 6.8-1.4A, with minimum rated maximum ambient temperature 70°C, and has to be evaluated according to UL/IEC/EN 60950-1 and/or UL/IEC/EN 62368-1. If you need further assistance, please contact Cincoze for further information.
17. Ensure to connect the power cord of power adapter to a socket-outlet with earthing connection.
18. Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

Package Contents

Before installation, please ensure all the items listed in the following table are included in the package.

Item	Description	Q'ty
1	DC-1300 Embedded Computer	1
2	CPU Thermal Pad	1
3	Screws Pack	1
4	Wall Mount Kit	1
5	Power Terminal Block Connector	1
6	Remote Power On/Off + Remote Power LED Connector	1
7	M.2 Key B Type 3052 to Type 3042 Adapter Bracket	1

Note: Notify your sales representative if any of the above items are missing or damaged.

Ordering Information

Model No.	Product Description
DC-1300-i3-R10	Intel® Core™ i3-N305 Entry Performance and Compact Rugged Embedded Computer
DC-1300-N97-R10	Intel® Processor N97 Entry Performance and Compact Rugged Embedded Computer

Chapter 1
Product Introductions

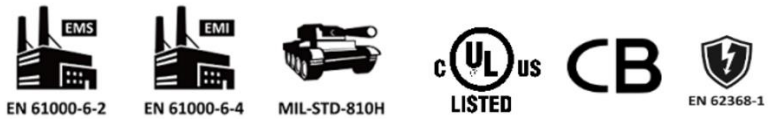
1.1 Overview

The DC-1300 is the entry-level option in the DIAMOND product line specially designed for basic industrial applications. It supports an Intel® Core™ i3 or N97 (Alder Lake-N) processor and maximum expansion flexibility in a compact design, providing a robust and reliable solution for space-constrained industrial automation applications.

Key Features

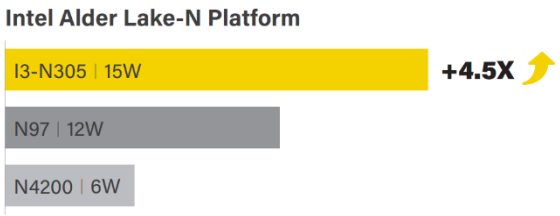
- Onboard Intel® Alder Lake-N Processor N97 and Core™ i3-N305 Processor
- 1 x DDR5 SO-DIMM Sockets, Supports up to 4800MHz 16GB Memory
- 1x M.2 Key B Type 3052/3042 Socket for 5G Module Expansion
- 1x M.2 key B Type 2242 Socket for I/O Module Expansion
- CMI Technology for Optional I/O Module Expansions
- CFM Technology for Power Ignition Sensing Function
- Safety Standard: UL, cUL, CB, IEC, EN 62368-1

Certification



4.5X Performance

The Intel® Core™ i3-N305 processor (Alder Lake-N) option boasts 4.5 times the computing performance of the previous generation model, and features a DDR5 memory slot and multiple storage options (2.5" HDD/SSD, Half-Slim SSD, M.2 SSD, etc.) to flexibly meet various application needs.



Compact Design for Flexible Installation

The compact size of only 185 x 131 x 56.5 mm is suitable for space-constrained installs and it supports various installation methods, including wall mount, side mount and DIN-Rail.

Complete Wireless Solution

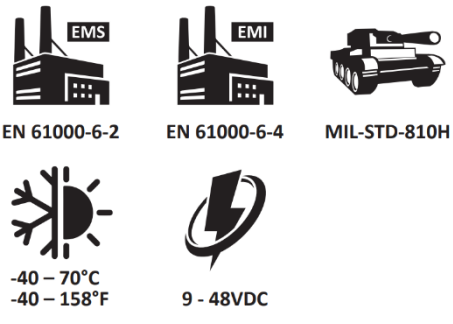
A full range of wireless transmission options, including GSM, GNSS and Wi-Fi, are supported through the built-in SIM card slot, M.2 Key B slot, or M.2 Key E slot (using an adapter to convert from M.2 Key B).

Rich Expandability

The new Stackable Expansion Box (SEB) adds support for more I/O, CANbus, and Fieldbus modules via the DC-1300's dual M.2 B Key slots, while CMI/CFM technology enables extra I/O (COM, DIO, display), and IGN functions.

International Certifications

Industrial-grade protection supports wide temperatures (-40 to 70°C) and wide voltages (9-48 VDC), and passes the EMC standard for industrial environments (IEC 61000-6-2/61000-6-4). US military standard (MIL-STD-810H) and UL safety certification ensure reliable operation across various application scenarios.



1.2 Hardware Specification

Model Name	DC-1300
System	
Processor	• Onboard Intel® Alder Lake-N Series Processor: - Intel® Core™ i3-N305 8 Cores Up to 3.80 GHz, TDP 15W - Intel® Processor N97 4 Cores Up to 3.60 GHz, TDP 12W
Memory	• 1x DDR5 4800 MHz SO-DIMM Socket, Supports Un-buffered and ECC Type, Up to 16 GB
BIOS	• AMI BIOS
Graphics	
Graphics Engine	• Integrated Intel® UHD Graphics
Maximum Display Output	• Supports Two Independent Display (Onboard 1x DisplayPort + Optional CMI 1x Display)
DP	• 1x DisplayPort Connector (4096 x 2304 @60Hz) * Verified maximum resolution: 3840 x 2160 @ 60Hz
Audio	
Audio Codec	• Realtek® ALC888, High Definition Audio
Line-out	• 1x Line-out, Phone Jack 3.5mm
Mic-in	• 1x Mic-in, Phone Jack 3.5mm
I/O	
LAN	• 2x 2.5GbE LAN, RJ45 - GbE1: Intel® I225 - GbE2: Intel® I225
USB	• 2 x USB 3.2 Gen2x1 (10Gbps), Type A • 1 x USB 3.2 Gen1x1 (5Gbps), Type A • 1 x USB 2.0 (480Mbps), Type A
COM	• 2x RS-232/422/485 with Auto Flow Control Supports 5V/12V, DB9
Storage/ Expansion	
2.5” Storage	• 1x 2.5" SATA HDD/SSD or 1x Half-Slim SSD (SATA 3.0)
M.2 Key B Socket	• 1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 3x1/ USB3.2 Gen2 x1 / SATA), Support 5G/ Storage/ GNSS/ Add-on Card Expansion • 1x M.2 Key B Type 2242 (PCIe Gen 3x1 / USB2.0), Support Storage/ GNSS/ Add-on Card Expansion
SIM Socket	• 1x Front Accessible Dual Nano SIM Socket
CMI (Combined Multiple I/O) Interface	• 1x CMI Interface for optional Display or I/O Module Expansion • 1x CMI Interface for optional I/O Module Expansion
CFM (Control Function Module) Interface	• 1x CFM Interface for optional CFM-IGN Module Expansion

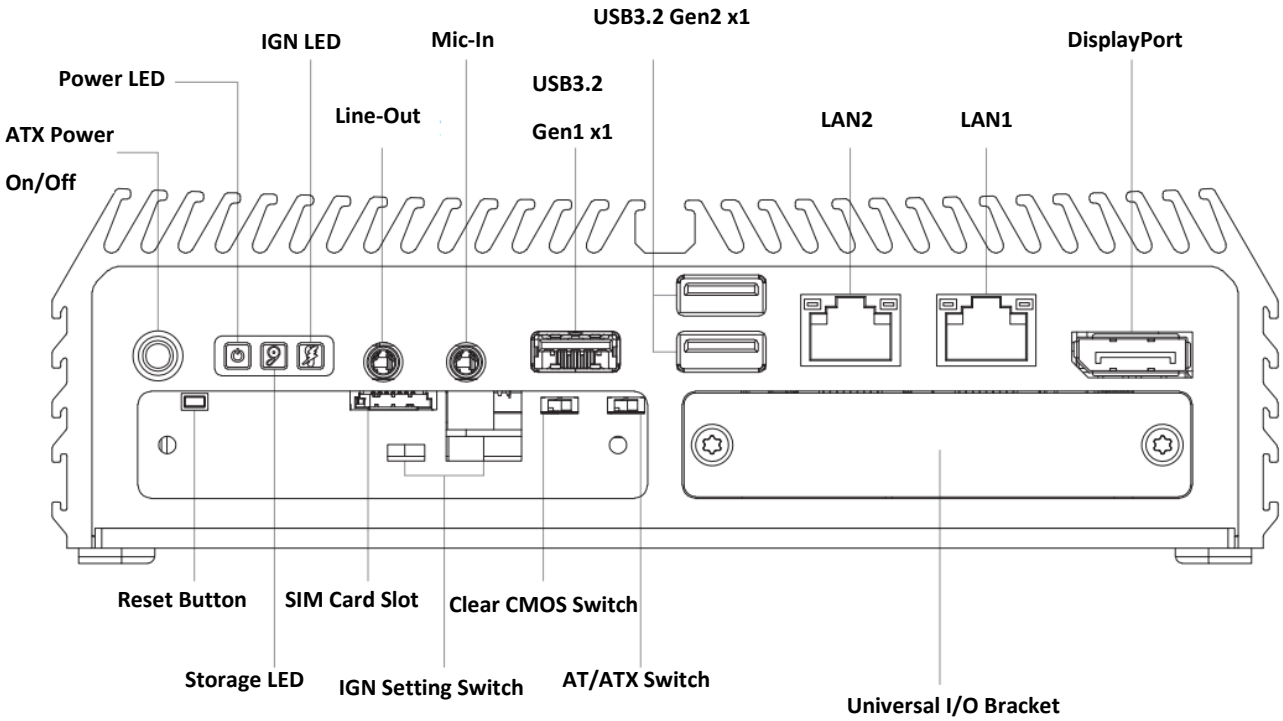
Other Function	
Clear CMOS Switch	• 1x Clear CMOS Switch
Reset Button	• 1x Reset Button
Watchdog Timer	• Software Programmable Supports 256 Levels System Reset
Status LED Indicator	• Power LED, Storage LED, IGN LED
Antenna	• 2x Antenna Holes
Power	
Power Button	• 1x ATX Power On/Off Button
Power Mode Switch	• 1x AT/ATX Mode Switch
Power Input	• 9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	• 1x Remote Power On/Off, 2-pin Terminal Block
Remote Power LED	• 1x Remote Power LED, 2-pin Terminal Block
Max. Power Consumption	• i3-N305 CPU: 49.4W • N97 CPU: 35.9W - Test conducted with CPU, 1x RAM, and 1x storage - 100% load during burn-in testing
Inrush Current (Peak)	• i3-N305 CPU: 4.572 A@12V • N97 CPU: 4.475 A@12V
Physical	
Dimension (W x D x H)	• 185 x 131 x 56.5 mm
Weight Information	• 1.5 KG
Mechanical Construction	• Extruded Aluminum with Heavy Duty Metal
Mounting	• Wall / Side / DIN-RAIL / VESA Mount
Physical Design	• Fanless Design • Cableless Design • Jumper-less Design • Unibody Design
Reliability & Protection	
Reverse Power Input Protection	• Yes
Over Voltage Protection	• Protection Range: 51-58V • Protection Type: shut down operating voltage, re-power on at the present level to recover
Over Current Protection	• 15A
MTBF	• 520,224 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3
Operating System	
Windows	• Windows®11, Windows®10
Linux	• Ubuntu Desktop 22.04 LTS
Environment	
Operating Temperature	• 12W TDP Processor: -40°C to 70°C

	• 15W TDP Processor: -40°C to 60°C * PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripheral and 1.2 m/s ambient flow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
Storage Temperature	• -40°C to 85°C
Relative Humidity	• 12W TDP Processor: 95% RH @ 70℃ (Non-condensing) • 15W TDP Processor: 95% RH @ 60℃ (Non-condensing)
Shock	• MIL-STD-810H
Vibration	• MIL-STD-810H
EMC	• CE, UKCA, FCC, ICES-003 Class A
EMI	• CISPR 32 Conducted & Radiated: Class A • EN/BS EN 55032 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
EMS	• EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV • EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 10 V/m • EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 1 kV • EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV • EN/IEC 61000-4-6 CS: 10V (**Compliant with the standard when utilizing shielded ethernet cable.) • EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m • EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz
Industrial Environment	• EMC : - EN/BS/IEC 61000-6-4: 2019 Class A - EN/BS/IEC 61000-6-2: 2019
Safety	• UL, cUL, CB, IEC, EN 62368-1

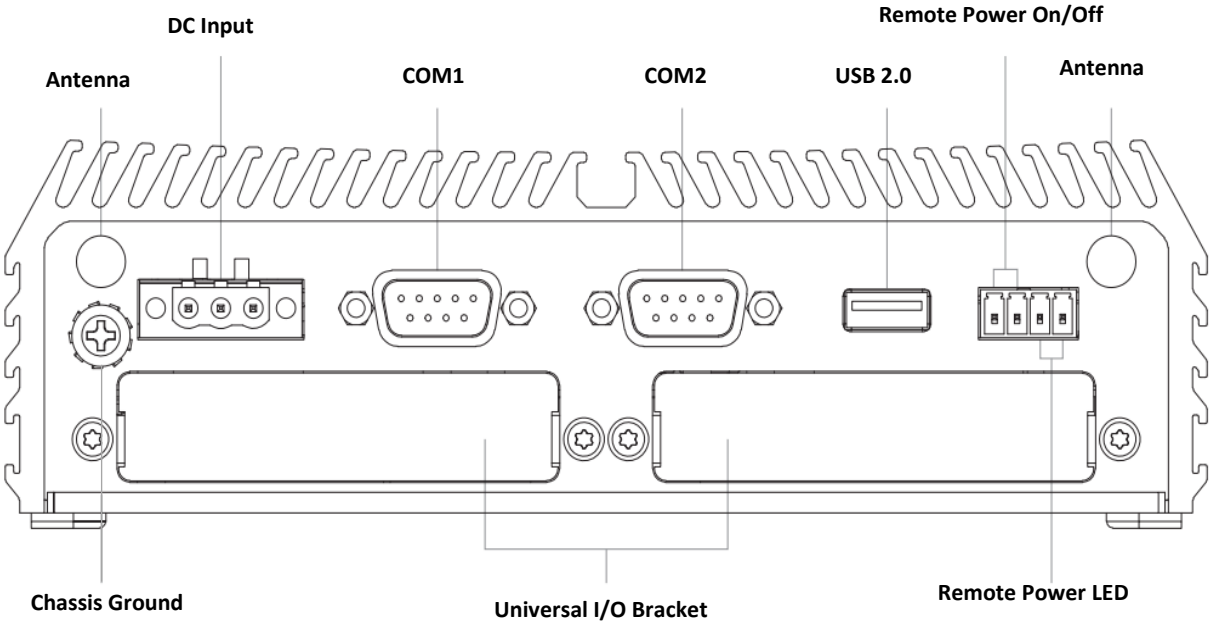
** Product Specifications and features are for reference only and are subject to change without prior notice. For more information, please refer to the latest product datasheet from Cincoze's website.*

1.3 External Layout

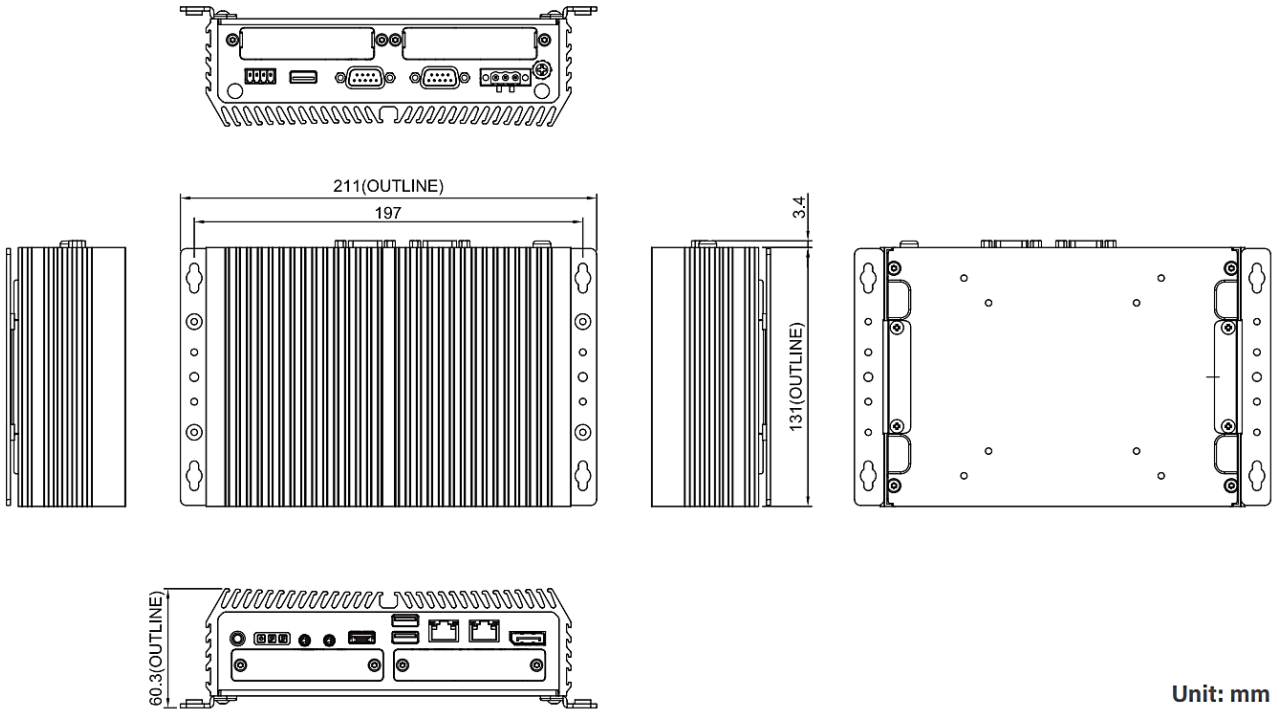
1.3.1 Front



1.3.2 Rear



1.4 Dimensions

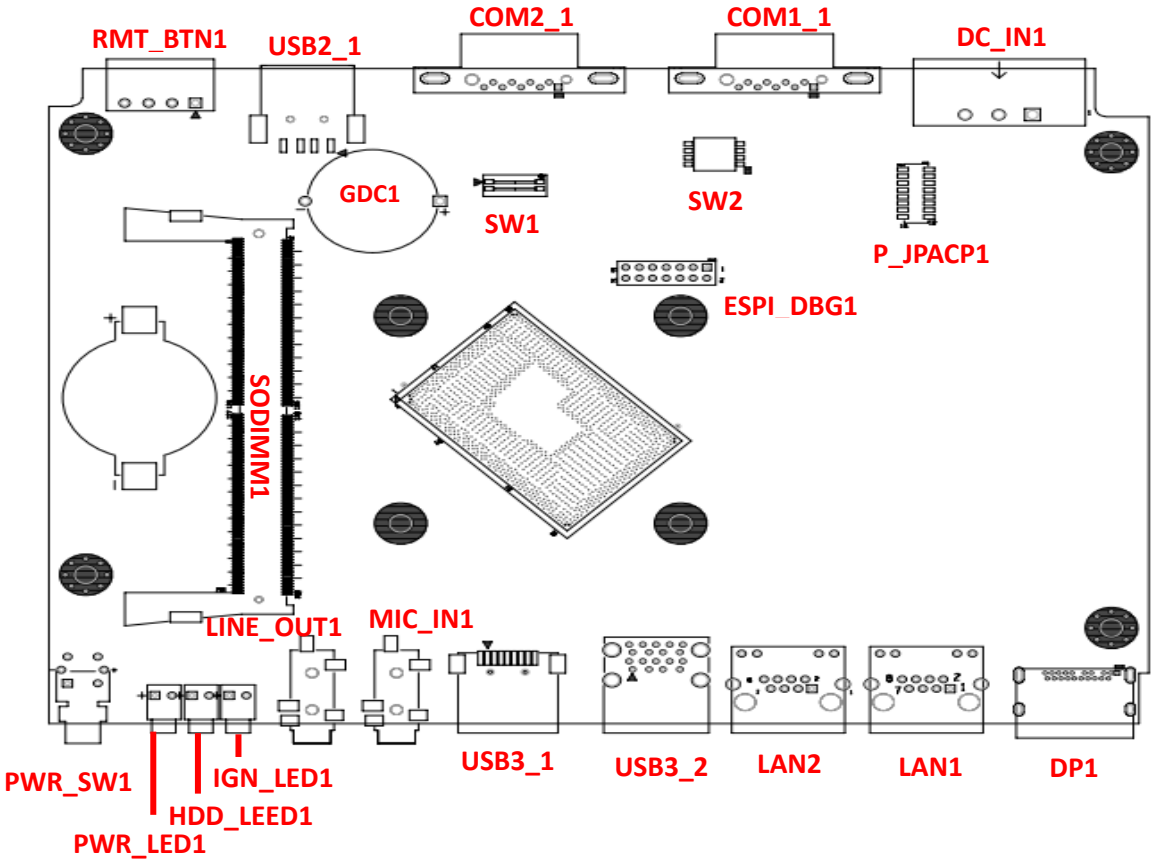


Unit: mm

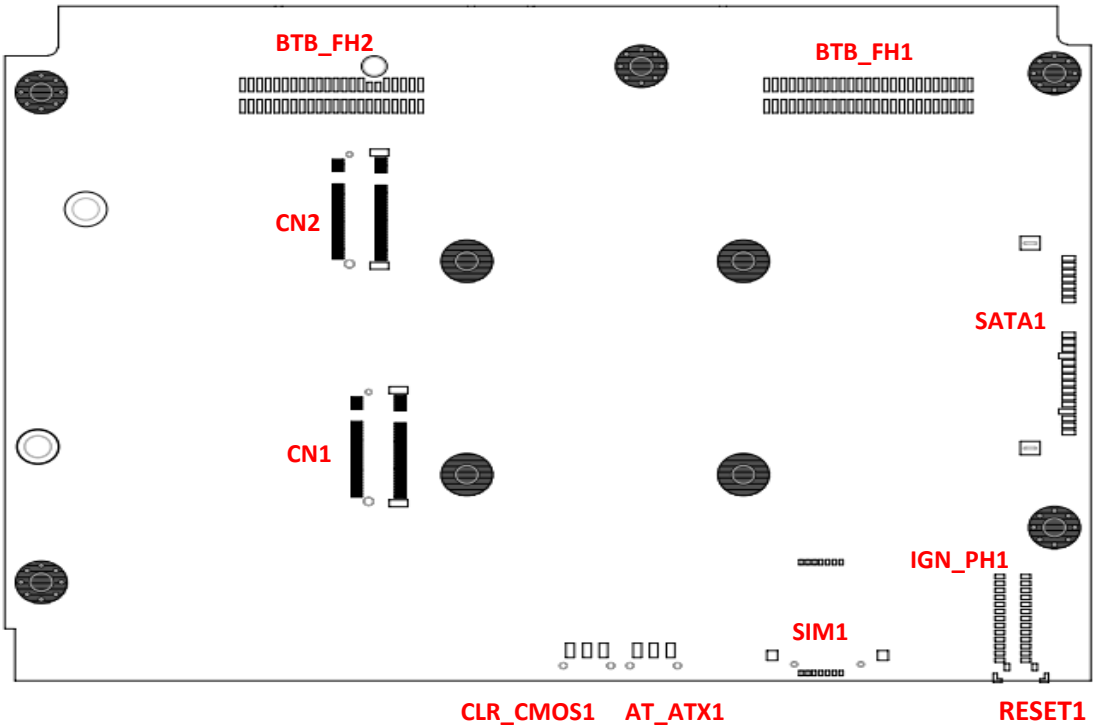
Chapter 2
Switches & Connectors

2.1 Location of Switches and Connectors

2.1.1 Top View



2.1.2 Bottom View



2.2 Switches and Connectors Definition

Location	Definition
AT_ATX1	AT / ATX Power Mode Switch
BTB_FH1	CMI Module (DIO, COM Port5/6, or Display) Board-to-Board Connector
BTB_FH2	CMI Module (DIO, COM Port3/4) Board-to-Board Connector
CLR_CMOS1	Clear CMOS SRAM Setting Switch
CN1	M.2 Key B Type 3052 Connector (Support PCIE/USB3.0/ SATA Interface)
CN2	M.2 Key B Type 2242 Connector (Support PCIE Interface)
COM_1_1,	COM1 DB9 Connectors (Support RS232/RS422/RS485)
COM_2_1	COM2 DB9 Connectors (Support RS232/RS422/RS485)
DC_IN1	3 Pins DC 9-48V Power Input with Power Ignition Connector
DP1	Display Port Connector
ESPI_DBG1	Debug port Header
GDC1	Super Cap for CMOS Backup
HDD_LED1	LED for Showing HDD Status
IGN_LED1	LED for Showing IGN Module Status
IGN_PH1	CFM-IGN Module Board-to-Board Connector
LAN1	LAN1 (2.5GbE) RJ45 Connectors
LAN2	LAN2 (2.5GbE) RJ45 Connectors
LINE_OUT1	Headphone Line out Connector
MIC_IN1	MIC Phone in Connector
P_JPCAP1	Cap Board Board-to-Board Connector
PWR_LED1	LED for Showing System Power Status
PWR_SW1	System Power Button
RESET1	System Reset Button
RMT_BTN1	Remote Power on/off Switch Connector and Remote Power LED Connector
SATA1	2.5" SATA HDD/SSD Connector
SIM1	Dual Nano SIM Card Socket
SODIMM1	DDR5 SO-DIMM Connector
SW1	Super CAP Control Switch
SW2	COM1/COM2 Power Select Switch
USB2_1	1 x USB 2.0 (480Mbps) Type A Connector
USB3_1	1 x USB 3.2 Gen1x1 (5Gbps) Type A Connector
USB3_2	2 x USB 3.2 Gen2x1 (10Gbps) Type A Connector

2.3 Switches Definition

AT_ATX1: AT / ATX Power Mode Switch

Switch	Definition
Left	AT Power Mode
Right	ATX Power Mode (Default)

CLR_CMOS1: Clear CMOS SRAM Setting Switch

Switch	Definition
Left	Clear CMOS
Right	Normal (Default)

WARNING
(AVERTIR)

After performing Clear CMOS, the system will take several minutes to start. This is normal. During this process, the system will POST three times, and the system's Power LED will alternate between green and blue lights.

(Après avoir effectué Clear CMOS, le système prendra plusieurs minutes pour démarrer. Cela est normal. Pendant ce processus, le système effectuera trois fois le POST, et la LED d'alimentation du système alternera entre les lumières verte et bleue.)

PWR_LED1 : LED for Showing System Power Status

LED Type	Status	LED Color
Power LED	Power off (S4/S5)	Blue
	Power on (S0)	Green
	Stand by (S3)	Blinking Blue & Green

HDD_LED1 : LED for Showing HDD Status

Switch	Status	LED Color
HDD LED	HDD Read/Write	Orange
	No activity	No light

IGN_LED1: LED for Showing IGN Module Status

LED Type	Status			LED Color
IGN LED	IGN module not installed			No light
	IGN module installed	IGN disabled		Green
		IGN enabled	ACC OFF	Blue
			ACC ON	Green

PWR_SW1 : System Power Button

Switch	Definition
Push	Push to Power up the System

RESET1: System Reset Button

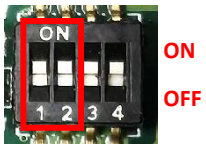
Switch	Definition
Push	Push to Reset the System

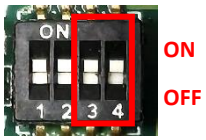
SW1: Super CAP Control Switch

Location	Function	DIP1	DIP2
SW1	Super CAP Enabled	ON (Default)	ON (Default)
	Super CAP Disabled	OFF	

SW2: COM1/COM2 Power Select Switch

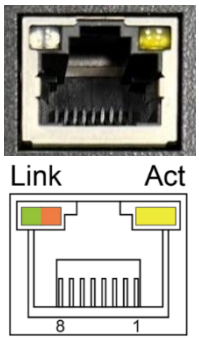
Location	Function		DIP1	DIP2
SW2	COM1	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF
Location	**Function**		**DIP3**	**DIP4**
SW2	COM2	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF





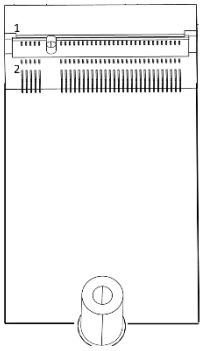
LAN1 and LAN2 LED Status Definition

Link Speed LED Status	Definition
Steady Green	2.5 Gbps Network Link
Steady Orange	1 Gbps Network Link
Off	100 Mbps/ 10 Mbps Network Link
Link Act LED Status	**Definition**
Blinking Yellow	Link and Data Activity
Steady Yellow	Link but No Activity
Off	No Link



2.4 Definition of Connectors

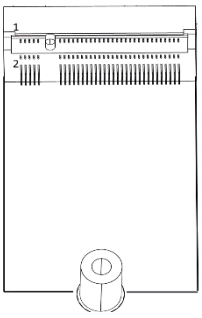
CN1 : M.2 Key B Type 3052 Connector (Support PCIE/USB3.0/SATA Interface)



Pin No.	PIN Name	Pin No.	Pin name
1	CFG3	2	+3.3V
3	GND	4	+3.3V
5	GND	6	PULL-UP
7	USB2-	8	PULL-UP
9	USB2+	10	LED
11	GND	12	Key
13	Key	14	Key
15	Key	16	Key
17	Key	18	Key
19	Key	20	M.2_BT_PCMCLK
21	CFG0	22	M.2_BT_PCMIN
23	NC	24	M.2_BT_PCMOUT
25	NC	26	NC
27	GND	28	M.2_BT_PCMFRM
29	PCIE4_RXN/USB3 RXN	30	USIM_RESET
31	PCIE4_RXP/USB3 RXP	32	USIM_CLK
33	GND	34	USIM_DATA
35	PCIE4_TXN/USB3 TXN	36	USIM_PWR
37	PCIE4_TXP/USB3 TXP	38	DEVSLP
39	GND	40	USIM_DET2
41	PCIE11_RXP /SATA_RXP	42	USIM_DATA2
43	PCIE11_RXN /SATA_RXN	44	USIM_CLK2
45	GND	46	USIM_RESET2
47	PCIE11_TXN/SATA_TXN	48	USIM_PWR2
49	PCIE11_TXP/SATA_TXP	50	RESET#
51	GND	52	CLKREQ#
53	100M_CLKN	54	WAKE#
55	100M_CLKP	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	USIM_DET
67	RESET2#	68	SUSCLK

69	CFG1	70	+3.3V
71	GND	72	+3.3V
73	GND	74	+3.3V
75	CFG2	76	NC

CN2 : M.2 Key B Type 2242 Connector (Support PCIE Interface)



Pin No.	PIN Name	Pin No.	Pin name
1	CFG3	2	+3.3V
3	GND	4	+3.3V
5	GND	6	PULL-UP
7	USB2-	8	PULL-UP
9	USB2+	10	LED
11	GND	12	Key
13	Key	14	Key
15	Key	16	Key
17	Key	18	Key
19	Key	20	M.2_BT_PCMCLK
21	CFG0	22	M.2_BT_PCMIN
23	NC	24	M.2_BT_PCMOUT
25	NC	26	NC
27	GND	28	M.2_BT_PCMFRM
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	NC
39	GND	40	NC
41	PCIE3_RXP /SATA_RXP	42	NC
43	PCIE3_RXN /SATA_RXN	44	NC
45	GND	46	NC
47	PCIE3_TXN/SATA_TXN	48	NC
49	PCIE3_TXP/SATA_TXP	50	RESET#
51	GND	52	CLKREQ#
53	100M_CLKN	54	WAKE#
55	100M_CLKP	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC

65	NC	66	NC
67	RESET2#	68	SUSCLK
69	NC	70	+3.3V
71	GND	72	+3.3V
73	GND	74	+3.3V
75	NC	76	NC

COM_1_1, COM_2_1: COM1, COM2 DB9 Connectors (Support RS232/RS422/RS485)

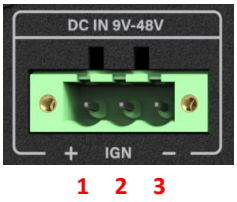
Connector Type: 9-pin D-Sub

Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD	TX-	DATA -
2	RXD	TX+	DATA +
3	TXD	RX+	
4	DTR	RX-	
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI		

DC_IN1: 3 Pins DC 9-48V Power Input with Power Ignition Connector

Connector Type: Terminal Block 1x3 3-pin, 5.0mm pitch

Pin	Definition
1	+9-48VIN
2	Ignition (IGN)
3	GND



CAUTION (ATTENTION)

Please disconnect the power source before mounting the DC power cables or connecting the DC power connector to system.

(Veuillez débrancher la source d'alimentation avant de monter les câbles d'alimentation CC ou de connecter le connecteur d'alimentation CC au système.)

RMT_BTN1: Remote Power on/off Switch Connector and Remote Power LED Connector

Remote Power LED connector can connect an external LED indicator up to 10mA @ 3.3V.

Connector Type: Terminal Block 1X4 4-pin, 3.5mm pitch

Pin	Definition
1	Remote Power Button
2	GND
3	Remote Power LED
4	GND

WARNING
(AVERTIR)

For Remote Power on/off Switch Connector (pin 1 & pin 2) : Do not apply any power to this connector! This port is used to connect a SWITCH!

(Pour la télécommande de mise sous/hors tension (broche 1 et broche 2) : Ne fournissez aucune alimentation à ce connecteur ! Ce port est utilisé pour connecter un INTERRUPTEUR !)

2.5 Optional Module: Definition of Switches and Connectors

2.5.1 CMI-COM03

2.5.1.1 Installed at BTB_FH1 Connector

When a CMI-COM03 module is installed at the BTB_FH1 connector, the COM ports on the CMI module will be assigned as COM 3 and COM 4 by the system, as shown below.

COM3~4 : COM3~4 Connectors on the system (Support RS232/RS422/RS485)

Connector Type: 9-pin D-Sub

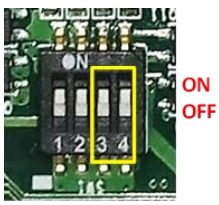
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD	TX-	DATA -
2	RXD	TX+	DATA +
3	TXD	RX+	
4	DTR	RX-	
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI		

SW1 on the Module: COM3~4 with Power Select Switch

Function Setting via DIP Switch

Location	Function		DIP1	DIP2
SW1	COM3	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF

Location	Function		DIP3	DIP4
SW1	COM4	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF



2.5.1.2 Installed at BTB_FH2 Connector

When a CMI-COM03 module is installed at the BTB_FH2 connector, the COM ports on the CMI module will be assigned as COM 3 and COM 4 by the system, as shown below.

COM3~4: COM3~4 Connectors on the system (Support RS232/RS422/RS485)

Connector Type: 9-pin D-Sub

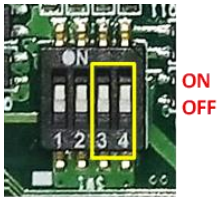
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD	TX-	DATA -
2	RXD	TX+	DATA +
3	TXD	RX+	
4	DTR	RX-	
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI		

SW1 on the Module: COM3~4 with Power Select Switch

Function Setting via DIP Switch

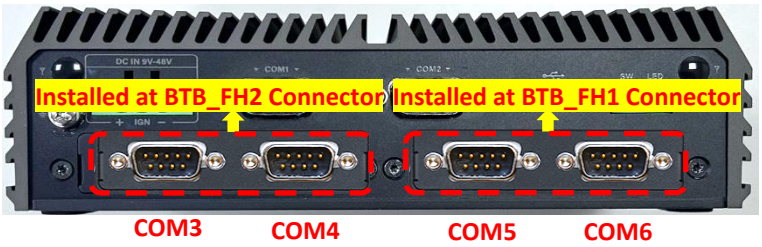
Location	Function		DIP1	DIP2
SW1	COM3	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF

Location	Function		DIP3	DIP4
SW1	COM4	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF



2.5.1.3 Installed at BTB_FH1 & BTB_FH2 Connectors

When two CMI-COM03 modules are installed at the BTB_FH1 and BTB_FH2 connectors, the COM ports on the CMI modules will be assigned as COM 3, COM4, COM5, and COM6 by the system, as shown below.



COM3~6: COM3~6 Connectors on the system (Support RS232/RS422/RS485)

Connector Type: 9-pin D-Sub

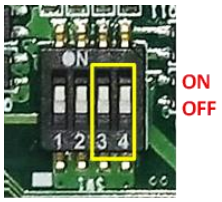
Pin	RS232 Definition	RS422 / 485 Full Duplex Definition	RS485 Half Duplex Definition
1	DCD	TX-	DATA -
2	RXD	TX+	DATA +
3	TXD	RX+	
4	DTR	RX-	
5	GND		
6	DSR		
7	RTS		
8	CTS		
9	RI		

SW1 on the Module (installed at BTB_FH2): COM3~4 with Power Select Switch

Function Setting via DIP Switch

Location	Function		DIP1	DIP2
SW1	COM3	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF

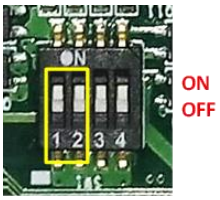
Location	Function		DIP3	DIP4
SW1	COM4	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF



SW1 on the Module (installed at BTB_FH1): COM5~6 with Power Select Switch

Function Setting via DIP Switch

Location	Function		DIP1	DIP2
SW1	COM5	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF



Location	Function		DIP3	DIP4
SW1	COM6	RI	ON (Default)	ON (Default)
		5V	ON	OFF
		12V	OFF	OFF

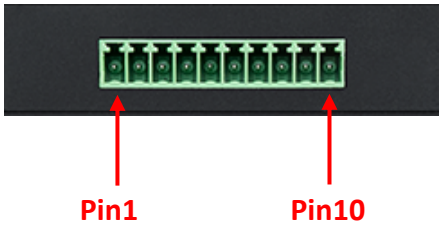
2.5.2 CMI-DIO03

2.5.2.1 Installed at BTB_FH1 Connector

DIO1: Digital Input / Output Connector

Connector Type: Terminal Block 1X10 10-pin, 3.5mm pitch

Pin	Definition	Pin	Definition
1	XCOM+ (DC INPUT)	6	DO1
2	DI1	7	DO2
3	DI2	8	DO3
4	DI3	9	DO4
5	DI4	10	XCOM- (GND)

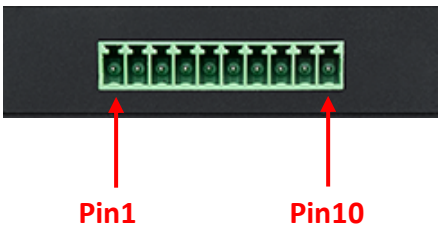


2.5.2.2 Installed at BTB_FH2 Connector

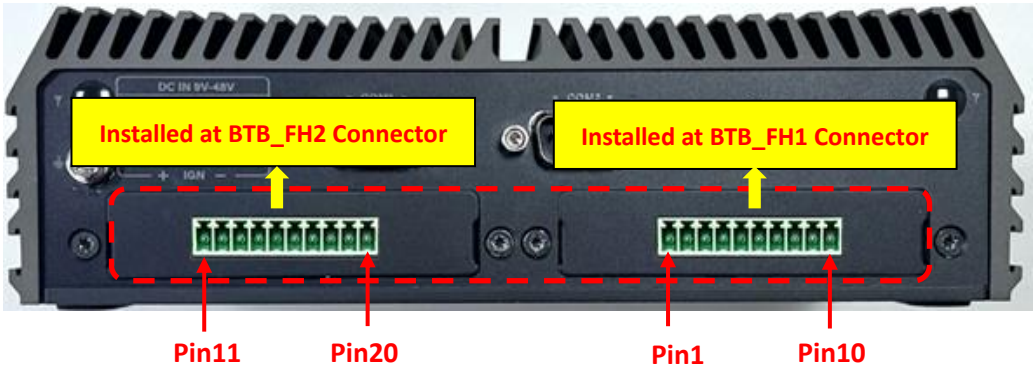
DIO1: Digital Input / Output Connector

Connector Type: Terminal Block 1X10 10-pin, 3.5mm pitch

Pin	Definition	Pin	Definition
1	XCOM+ (DC INPUT)	6	DO1
2	DI1	7	DO2
3	DI2	8	DO3
4	DI3	9	DO4
5	DI4	10	XCOM- (GND)



2.5.2.3 Installed at BTB_FH1 & BTB_FH2 Connectors



DIO1: Digital Input / Output Connector

Connector Type: Terminal Block 1X10 10-pin, 3.5mm pitch

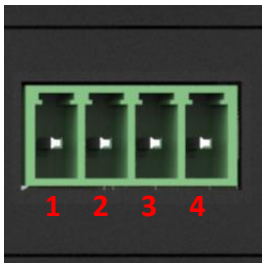
Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	XCOM+ (DC INPUT)	6	DO1	11	XCOM+ (DC INPUT)	16	DO5
2	DI1	7	DO2	12	DI5	17	DO6
3	DI2	8	DO3	13	DI6	18	DO7
4	DI3	9	DO4	14	DI7	19	DO8
5	DI4	10	XCOM- (GND)	15	DI8	20	XCOM- (GND)

2.5.3 CMI-FAN01

FAN1: External PWM Fan Connector

Connector Type: Terminal Block 1X4 4-pin, 3.5mm pitch

Pin	Definition
1	GND
2	+12V
3	SENSE
4	Control

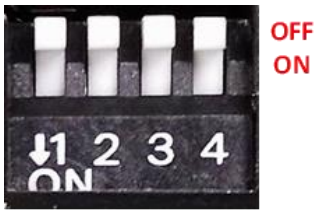


2.5.4 CFM-IGN02

SW2 on the Module: IGN Module Function and Boot Delay Time Setting Switch

Set shutdown delay timer when ACC is turned off

Pin 1	Definition	Pin 2	Pin 3	Pin 4	Definition
ON	IGN enabled	ON	ON	ON	0 second
		ON	ON	OFF	1 minute
		ON	OFF	ON	5 minutes
		ON	OFF	OFF	10 minutes
OFF	IGN disabled	OFF	ON	ON	30 minutes
		OFF	ON	OFF	1 hour
		OFF	OFF	ON	2 hours
		OFF	OFF	OFF	Reserved (0 second)



Default setting of Pin1 to Pin4 is OFF/OFF/OFF/OFF.

24V_12V_1 on the Module: IGN Module Voltage Mode Setting Switch

12V / 24V Car Battery Switch

Pin	Definition
1-2	24V Car Battery Input (Default)
2-3	12V Car Battery Input

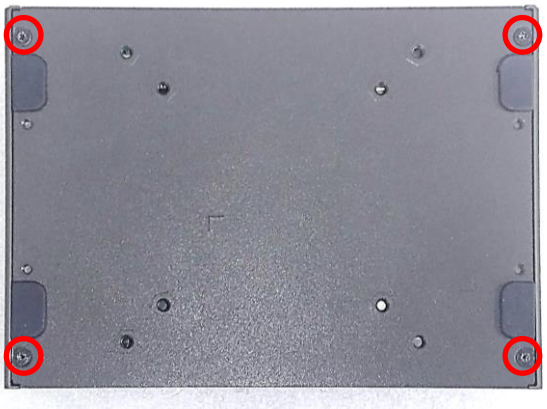
Chapter 3
System Setup

3.1 Removing Top Cover

WARNING (AVERTIR)

In order to prevent electric shock or system damage, must turn off power and disconnect the unit from power source before removing the chassis cover.
(Afin d'éviter tout risque d'électrocution ou d'endommagement du système, vous devez couper l'alimentation et débrancher l'appareil de la source d'alimentation avant de retirer le couvercle du châssis.)

Step 1. Turn over the unit to have the bottom side face up, loosen the 4 screws on the bottom cover then remove the bottom cover, and place them aside for later use.



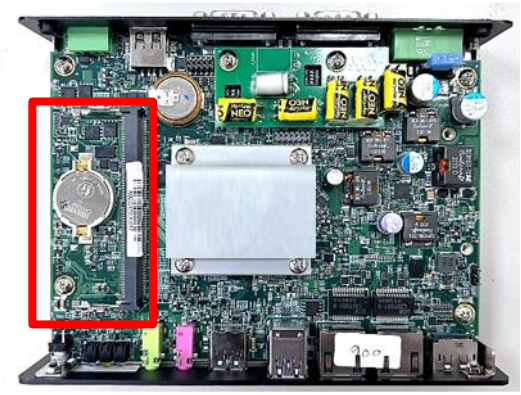
Step 2. Remove the bottom cover from the chassis.

Step 3. Hold front and rear panel together and then remove the system body from the top cover.

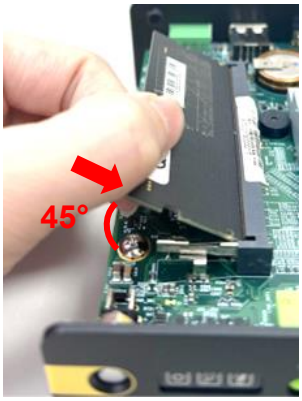
Step 5. Place the system body aside gently.

3.2 Installing SO-DIMM

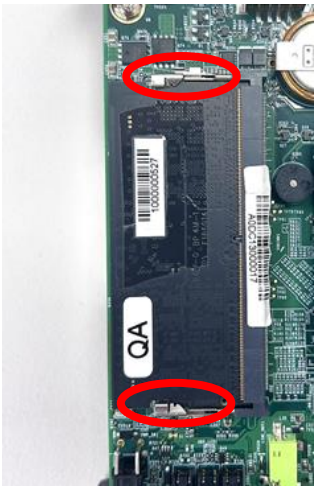
Step 1. Locate the SO-DIMM sockets on the top side of system.



Step 2. Align the notch on the SO-DIMM module with the corresponding notch in the socket. Insert the module into the socket at a 45-degree angle, ensuring that the edge connector is fully seated.



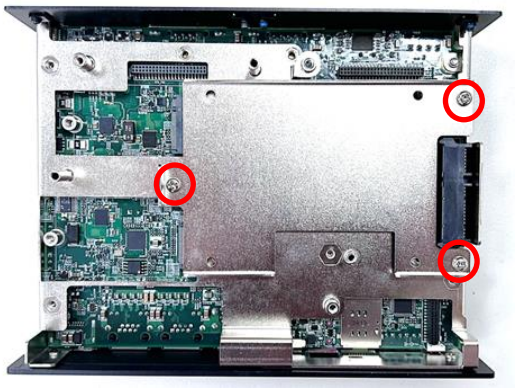
Step 3. Gently press down on the SO-DIMM module until it clicks into place, securing it within the socket.



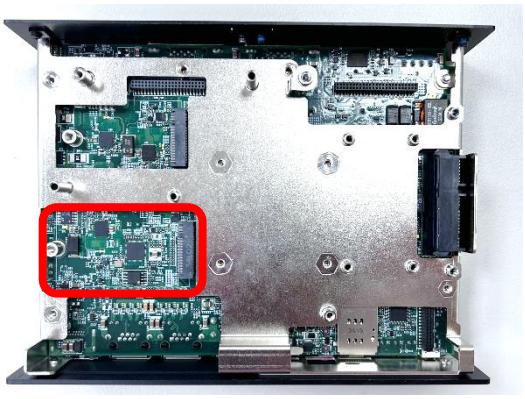
3.3 Installing M.2 Key B Module

3.3.1 M.2 Key B type 3052

Step 1. Loosen the screws to remove the HDD bracket.



Step 2. Locate the M.2 Key B type 3052 connector (CN1) on the bottom side of the system motherboard.



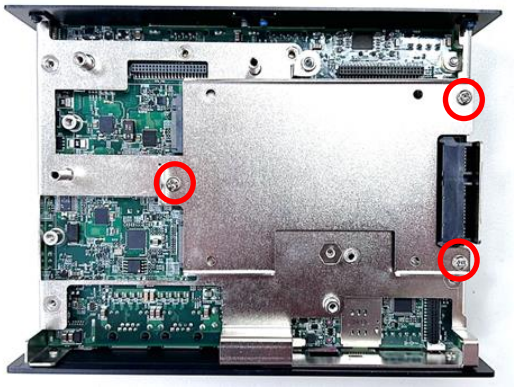
Step 2. Insert the M.2 Key B type 3052 module at a 45-degree angle and insert it to the slot until the gold-pated connector of module contacted firmly with the slot.

Step 3. Press down the module and fasten the screw to secure the module. (M3X5L, included in the system screw pack).

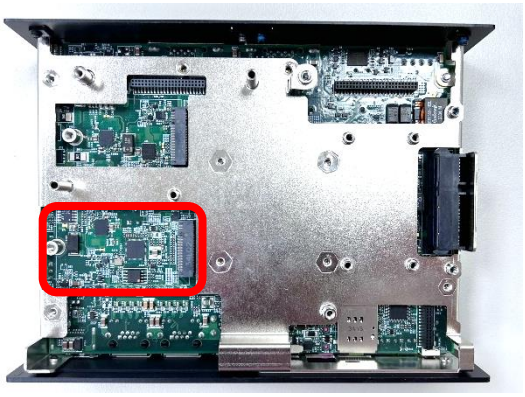
3.3.2 M.2 Key B type 3042

In this section, we will use the M.2 Key B 2242 module as an example for installing the M.2 Key B 3042 module.

Step 1. Loosen the screws to remove the HDD bracket.



Step 2. Locate the M.2 Key B type 3052 connector (CN1) on the bottom side of the system motherboard.



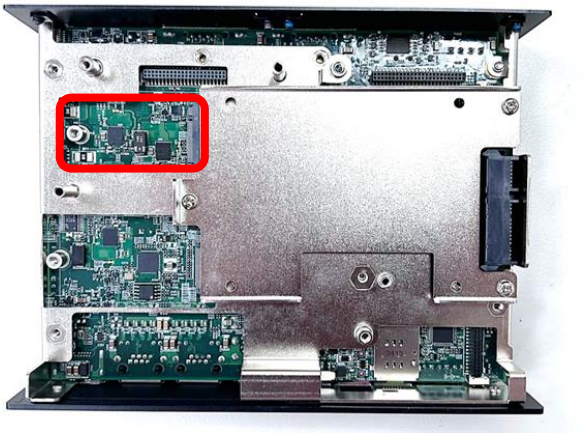
Step 3. Align the M.2 Key B Type 3052 to 3042 Adapter Bracket (included in the system screw pack) with the corresponding screw hole. Secure the bracket in place and fasten the screw (M3x4L, included in the system screw pack).

Step 3. Insert the M.2 Key B module at a 45-degree angle and insert it to the slot until the gold-pated connector of module contacted firmly with the slot.

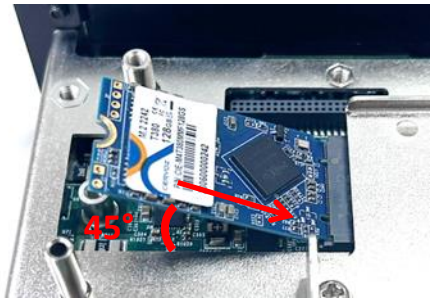
Step 4. Press down the module and fasten the screw to secure the module. (M3X5L, included in the system screw pack).

3.3.3 M.2 Key B type 2242

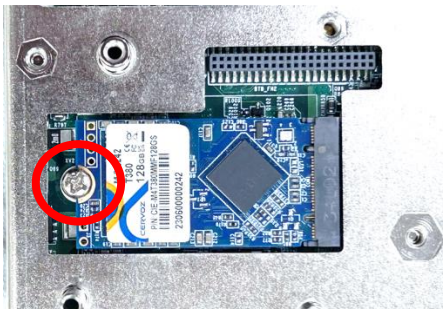
Step 1. Locate the M.2 Key B type 2242 connector (CN2) on the bottom side of the system motherboard. (In this section, we will use CN13 connector as an example for installing the M.2 Key B 2242 module.)



Step 2. Insert the M.2 Key B type 2242 module at a 45-degree angle and insert it to the slot until the gold-pated connector of module contacted firmly with the slot.



Step 4. Press down the module and fasten the screw to secure the module.

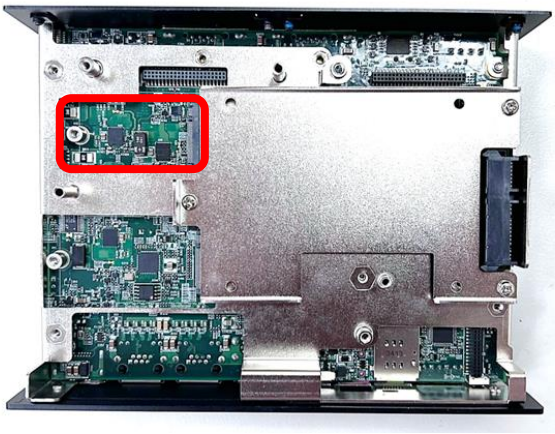


3.4 Installing M.2 Key E Module

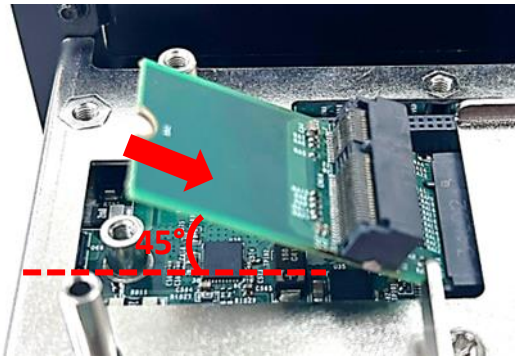
In this section, you'll learn how to install an M.2 Key E type 2230 device onto the DC-1300 system. To complete the installation, you'll need to purchase our M.2 Key B Type 2242 to M.2 Key E Type 2230 Adapter Card (Model: AC-BE01-R10). This optional accessory enables you to seamlessly install the M.2 Key E type 2230 device onto the system.

3.4.1 M.2 Key E type 2230

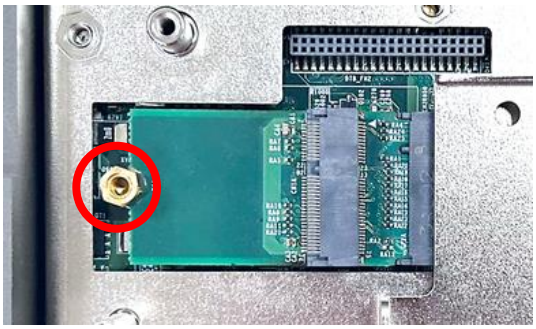
Step 1. Locate the M.2 Key B connector (CN2) on the top side of the system motherboard.



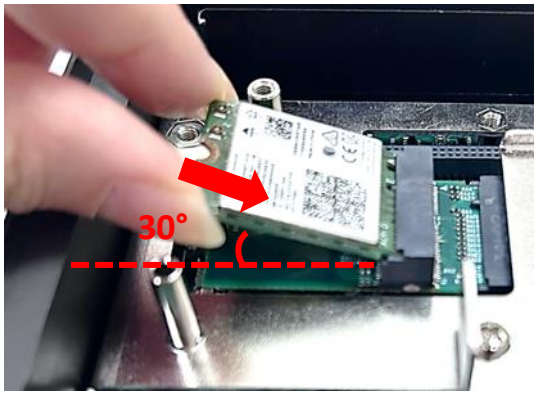
Step 2. Insert the M.2 Key B Type 2242 to M.2 Key E Type 2230 Adapter Card (Model: AC-BE01-R10) at a 45-degree angle and insert it to the slot until the gold-pated connector of module contacted firmly with the slot.



Step 3. Press the module down and secure it with the copper standoff screw (M3x6.5L, included in the optional module pack).



Step 4. Insert the M.2 Key E module at a 30-degree angle and insert it to the slot until the gold-pated connector of module contacted firmly with the slot.



Step 5. Press down the module and fasten the screw to secure the module. (M3x4L, included in the optional module pack).

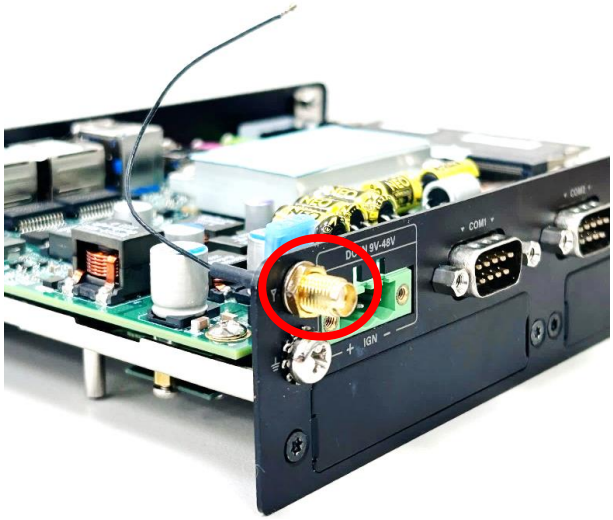
3.5 Installing Antenna

The DC-1300 Series features two antenna ports on its rear panel, allowing users to install two antennas. (For those needing additional ports, the optional UB1131 expansion antenna bracket adds two more ports, with installation instructions provided in the next section.)

Step 1. Remove the antenna rubber cover(s) on the rear panel of the system.

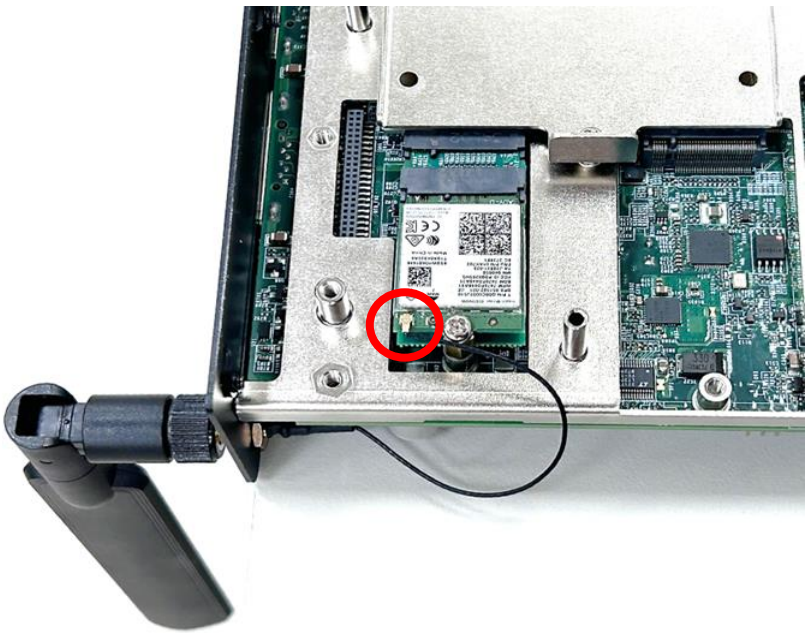
Step 2. Penetrate the antenna jack through the hole.

Step 3. Put on the washer and fasten the nut of antenna jack.



Step 4. Assemble the antenna and antenna jack together.

Step 5. Remember to attach the RF connector of the cable's another end onto the wireless card after wireless card's installation.



3.6 Installing Antenna Cutout Universal Bracket

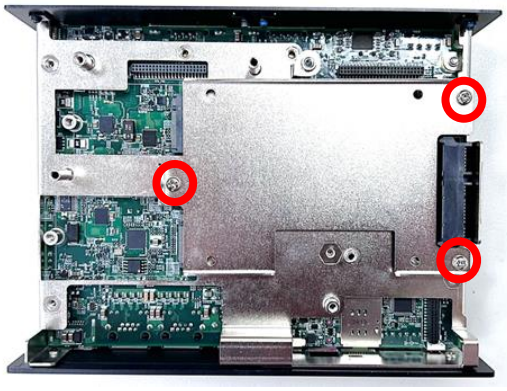
This is an optional Universal Bracket (Model No. UB1131) with 2x Antenna Cutouts designed for expanding the capabilities of 5G/4G cards. Installing this UB allows users to mount antennas on these two Antenna Cutouts. For instructions on how to install the antennas through the antenna holes, please refer to the previous chapter 3.5.

Step 1. Loosen and remove the 2 screws to remove the right-side bracket from the system rear panel.

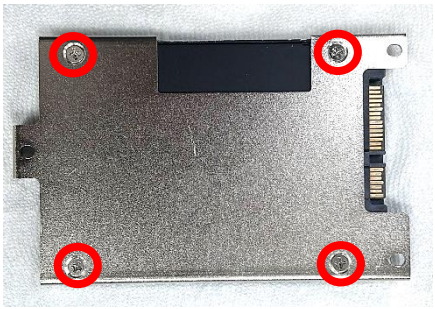
Step 2. Attach the I/O bracket on to the system as indicated below, and fasten the screws to fix it. For guidance on antenna installation methods, please refer to chapter 3.5.

3.7 Installing 2.5” SATA Drive

Step 1. Loosen the screws to remove the HDD bracket.



Step 2. Make the PCB side of the HDD face up, place the HDD bracket on it. Ensure the direction of bracket is correct and use 4 provided screws (M3x4L, included in the system screw pack) to assemble HDD and HDD bracket together.

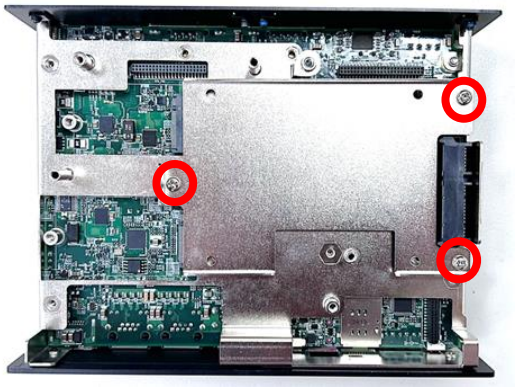


Step 3. Flip the HDD bracket over and connect it firmly to the SATA connector, then fasten the four screws back.

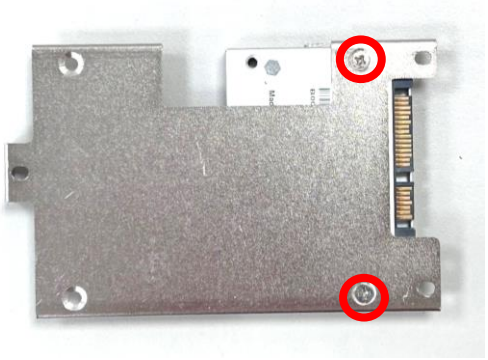
3.8 Installing 1.8” SATA Drive

3.8.1 SATA Drive with Enclosure

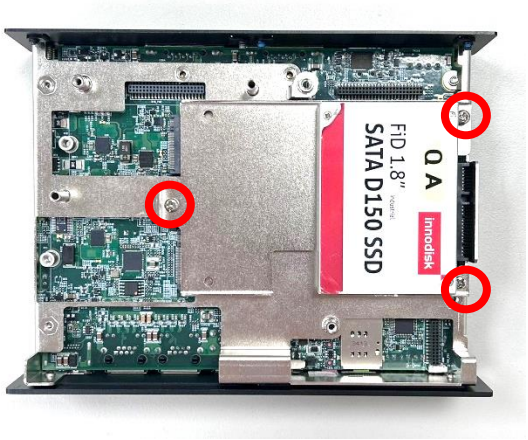
Step 1. Loosen the screws to remove the HDD bracket.



Step 2. Make the PCB side of the HDD face up, place the HDD bracket on it. Ensure the direction of bracket is correct and use provided screws (M3x4L, included in the system screw pack) to assemble HDD and HDD bracket together.

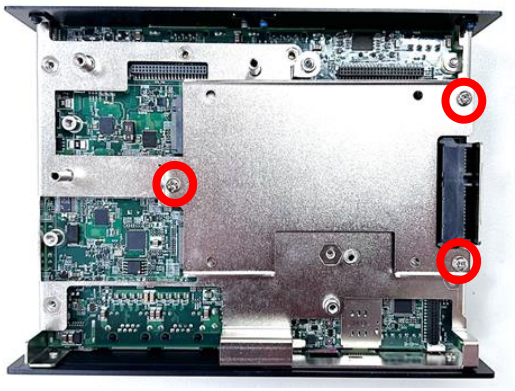


Step 3: Flip the HDD bracket over and connect it firmly to the SATA connector, then fasten the four screws.

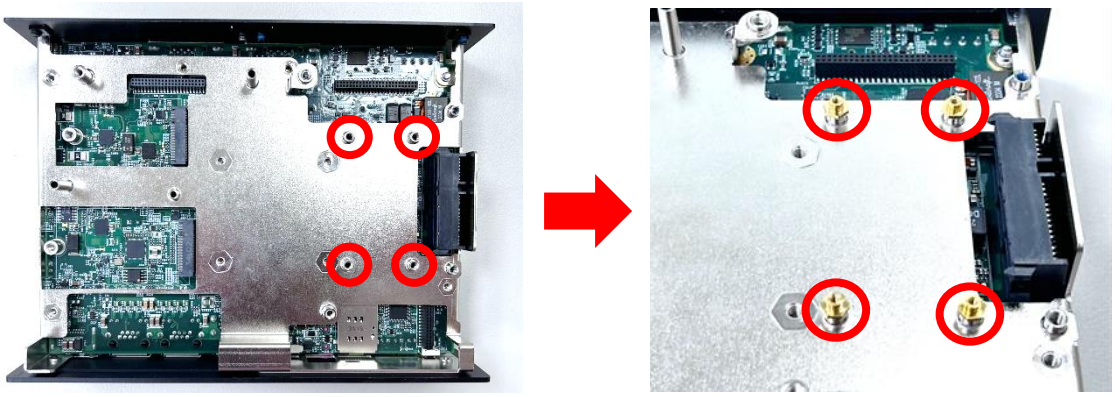


3.8.2 Bare SATA Drive PCB

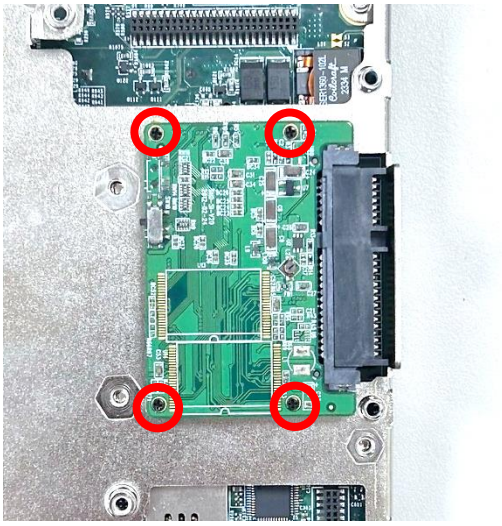
Step 1. Loosen the screws to remove the HDD bracket.



Step 2. Locate the four screw holes. Then fasten the 4 copper standoff screws (M3X3L, included in the system screw pack).



Step 3. Connect the Half Slim SSD to the SATA connector of the unit and then fasten the 4 screws to secure it. (M1.6x3L, included in the system screw pack).



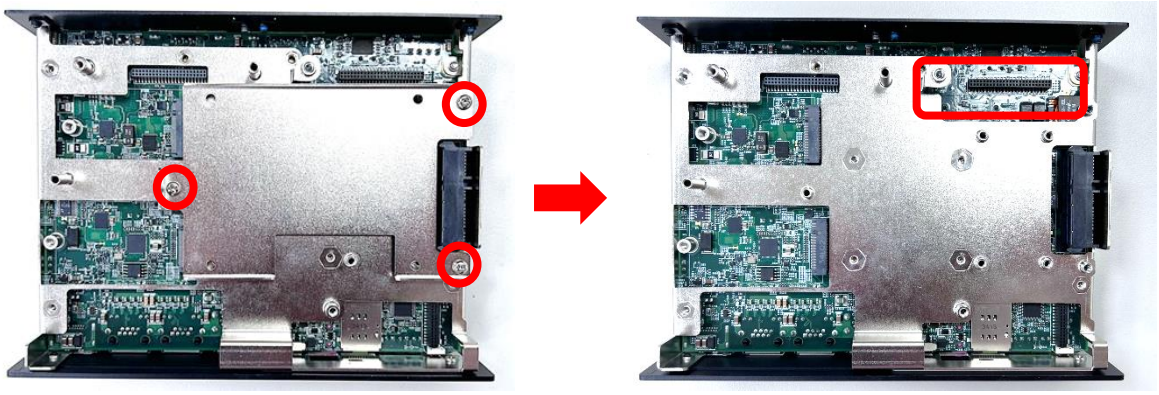
3.9 Installing CMI Module

3.9.1 CMI-HD02/UB1108

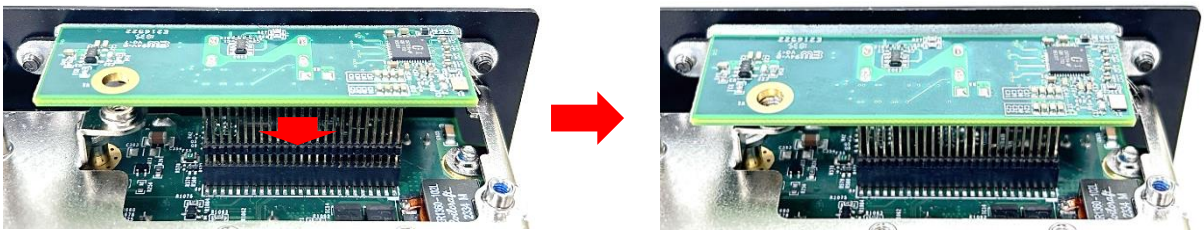
Step 1. Remove the 2 screws to remove the right-side bracket from the system rear panel.

Step 2. Attach the CMI-HD module's bracket on the backside of system's rear panel, and secure it using the two screws.

Step 3. Loosen the screws to remove the HDD bracket. And locate the connector of CMI-module (BTB_FH1) on the bottom side of the system.



Step 4. Insert the module vertically into the female connector (BTB_FH1) on the system's mainboard. Ensure all pins are properly aligned and firmly connected.



Step 5. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.

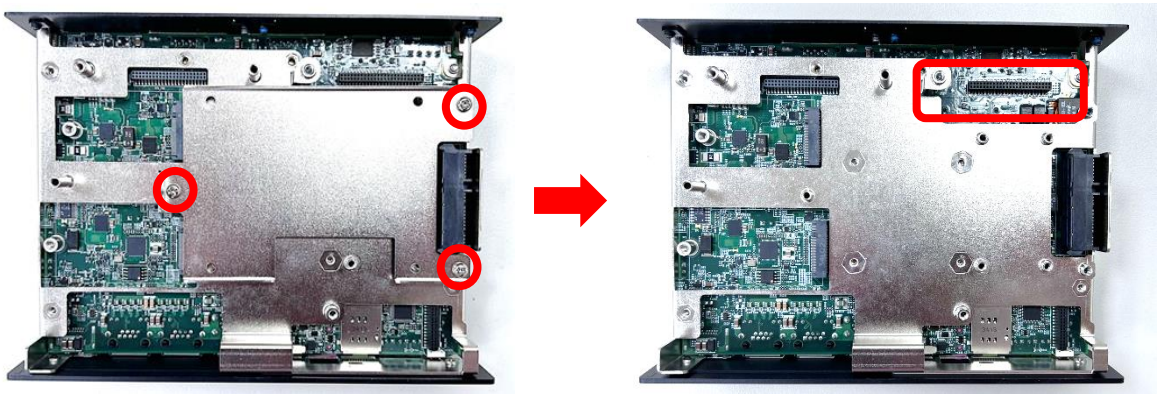
Step 6. The installation process is now complete.

3.9.2 CMI-DP03/UB1106

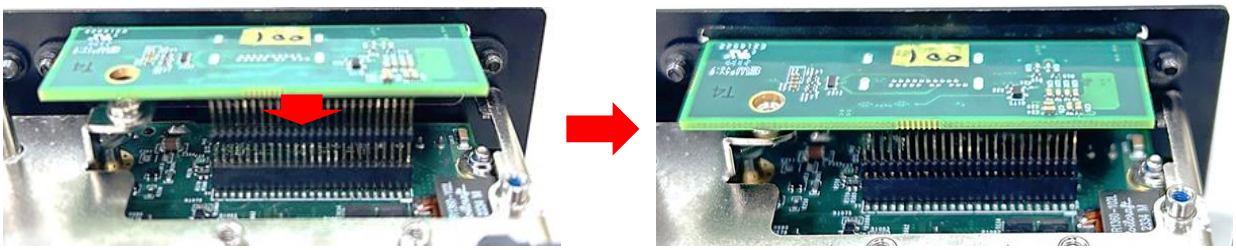
Step 1. Remove the 2 screws to remove the right-side bracket from the system rear panel.

Step 2. Attach the CMI-DP module's bracket on the backside of system's rear panel, and secure it using the two screws.

Step 3. Loosen the screws to remove the HDD bracket. And locate the connector of CMI-module (BTB_FH1) on the bottom side of the system.



Step 4. Insert the module vertically into the female connector (BTB_FH1) on the system's mainboard. Ensure all pins are properly aligned and firmly connected.



Step 5. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.

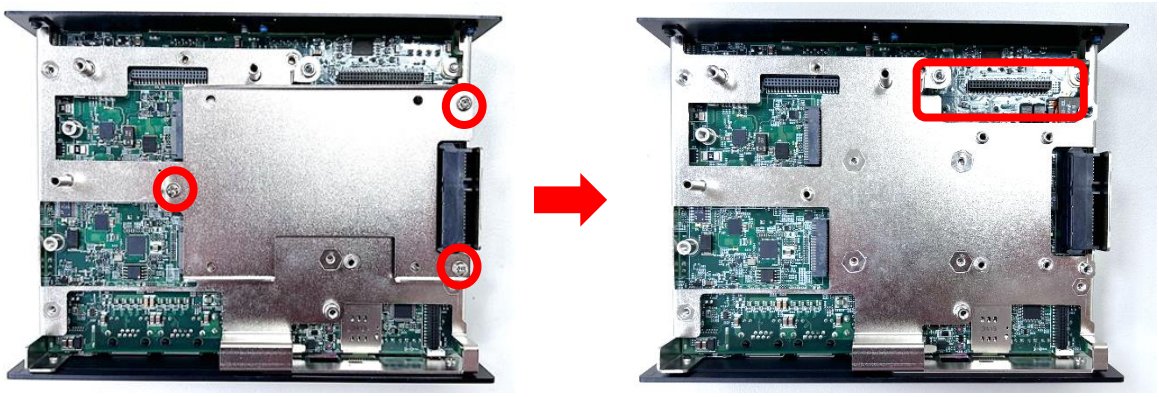
Step 6. The installation process is now complete.

3.9.3 CMI-DVI01/UB1107

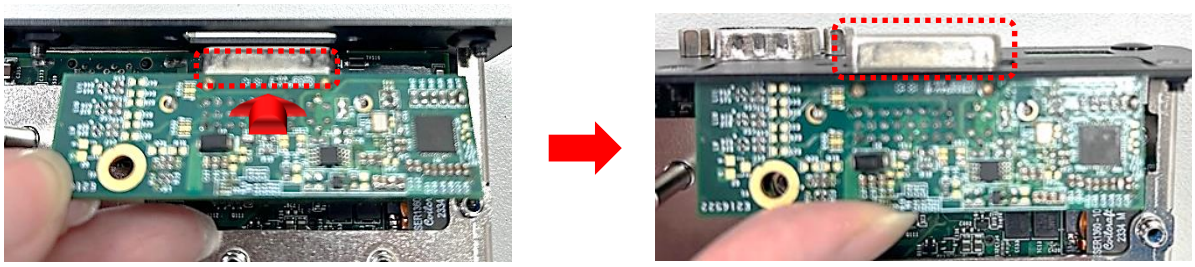
Step 1. Remove the 2 screws to remove the right-side bracket from the system rear panel.

Step 2. Attach the CMI-DVI module's bracket on the backside of system's rear panel, and secure it using the two screws.

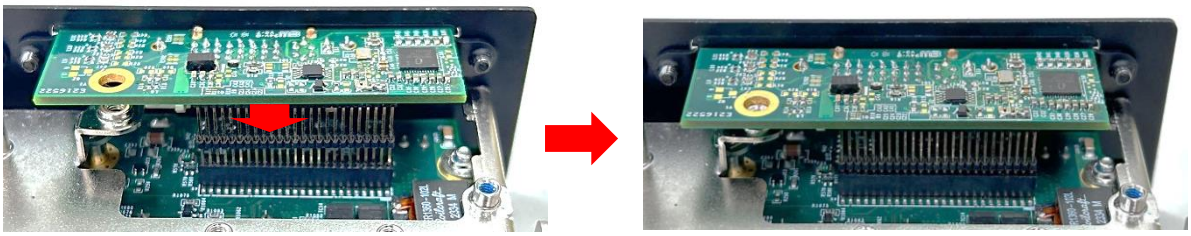
Step 3. Loosen the screws to remove the HDD bracket. And locate the connector of CMI-module (BTB_FH1) on the bottom side of the system.



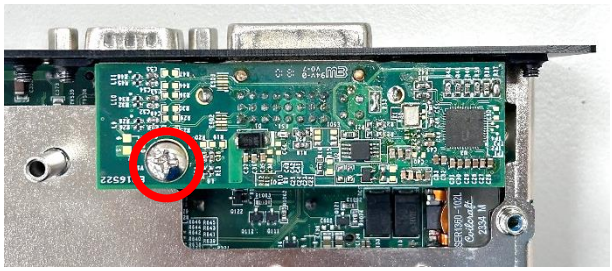
Step 4. Penetrate the DVI port through the I/O holes on the bracket.



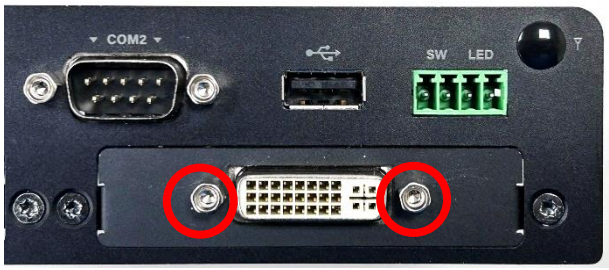
Step 5. Insert the module vertically into the female connector (BTB_FH1) on the system's mainboard. Ensure all pins are properly aligned and firmly connected.



Step 6. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.



Step 6. Fasten the two provided D-Sub jack screws (included in the optional module pack) to complete the installation process.

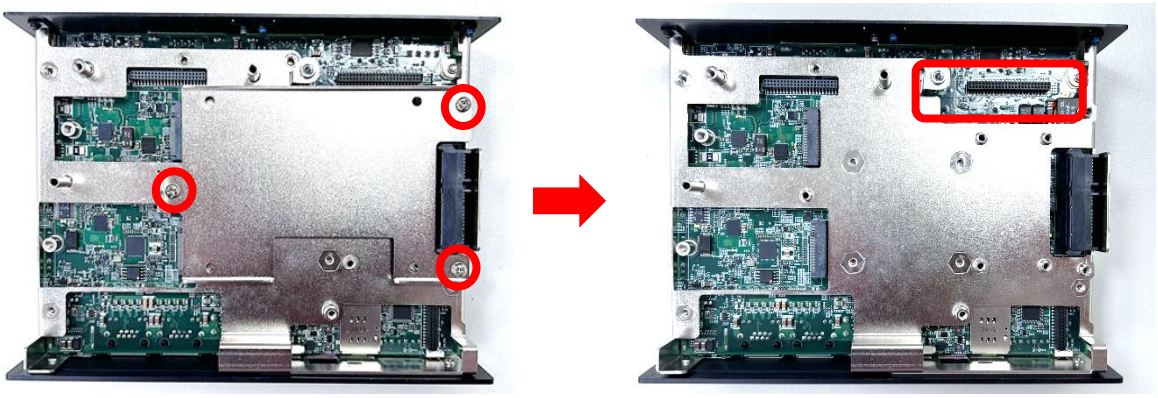


3.9.4 CMI-VGA01/UB1116

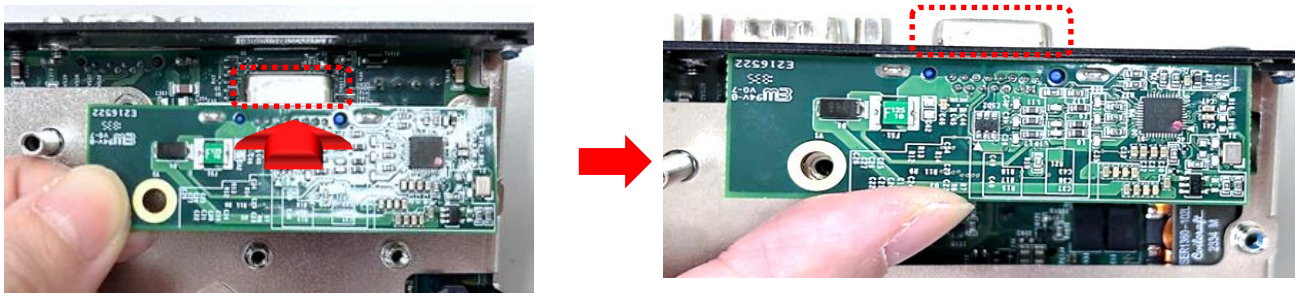
Step 1. Remove the 2 screws to remove the right-side bracket from the system rear panel.

Step 2. Attach the CMI-VGA module's bracket on the backside of system's rear panel, and secure it using the two screws.

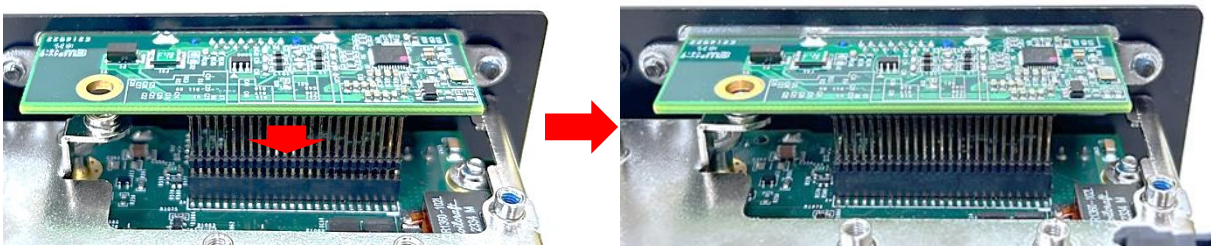
Step 3. Loosen the screws to remove the HDD bracket. And locate the connector of CMI-module (BTB_FH1) on the bottom side of the system.



Step 4. Penetrate the VGA port through the I/O holes on the bracket.

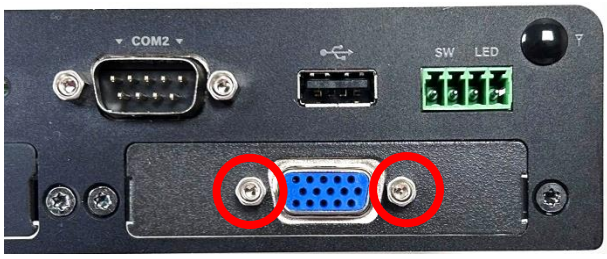


Step 5. Insert the module vertically into the female connector (BTB_FH1) on the system's mainboard. Ensure all pins are properly aligned and firmly connected.



Step 6. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.

Step 6. Fasten the two provided D-Sub jack screws (included in the optional module pack) to complete the installation process.



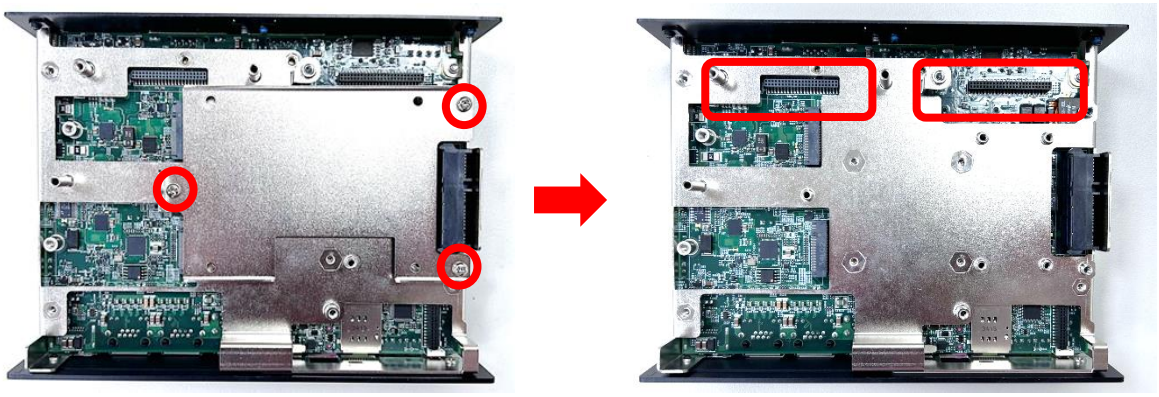
3.9.5 CMI-COM03/UB1103

For pin-out definitions related to this module, please refer to Chapter 2.5.1.

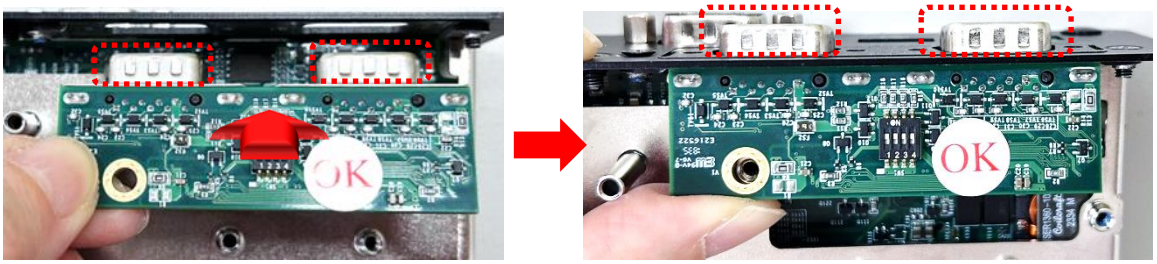
Step 1. Remove the screws to detach either the left-side or right-side bracket from the system's rear panel. For this guide, we will use the right-side bracket as an installation example.

Step 2. Attach the CMI-COM module's bracket on the backside of system's rear panel, and secure it using the two screws.

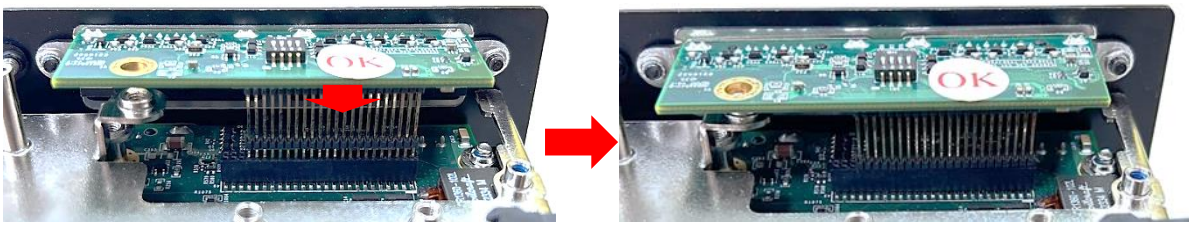
Step 3. Loosen the screws to remove the HDD bracket. And locate the connector(s) of CMI-module (BTB_FH1 or BTB_FH2) on the bottom side of the system. In the following steps, we use BTB_FH1 for installation example.



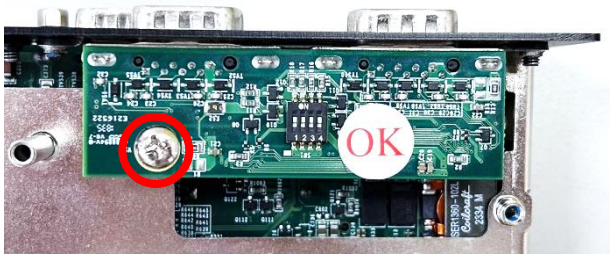
Step 4. Penetrate the COM ports through the I/O holes on the bracket.



Step 5. Align the pins starting from the right side of the connector (BTB_FH1) on the system's mainboard. Insert the module vertically into the female connector, ensuring all active pins are properly aligned and securely connected.



Step 6. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.



Step 6. Fasten the two provided D-Sub jack screws (included in the optional module pack) to complete the installation process.

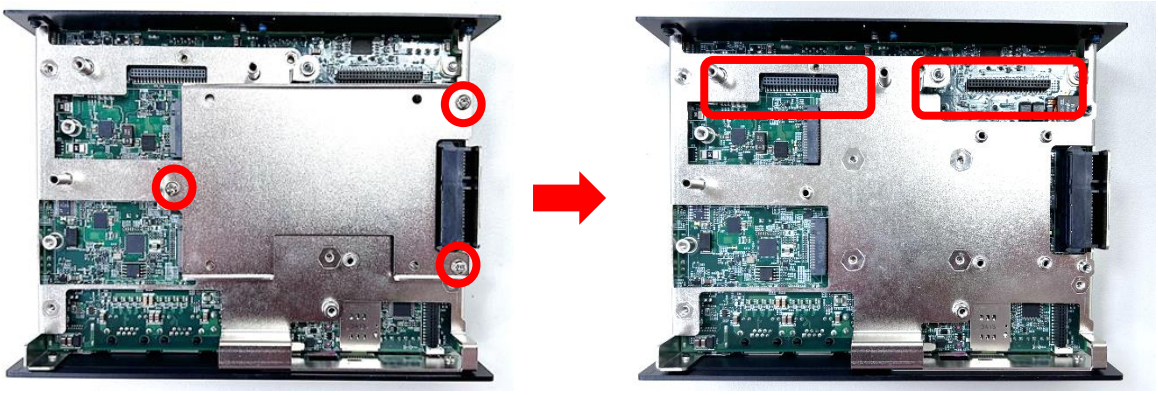
3.9.6 CMI-DIO03/UB1115

For pin-out definitions related to this module, please refer to Chapter 2.5.2.

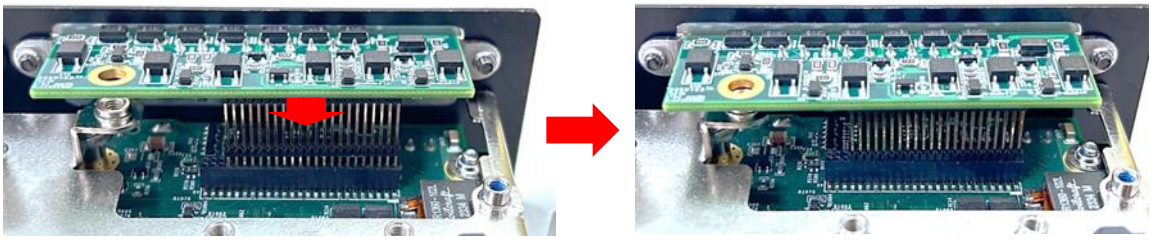
Step 1. Remove the screws to detach either the left-side or right-side bracket from the system's rear panel. For this guide, we will use the right-side bracket as an installation example.

Step 2. Attach the CMI-DIO module’s bracket on the backside of system’s rear panel, and secure it using the two screws.

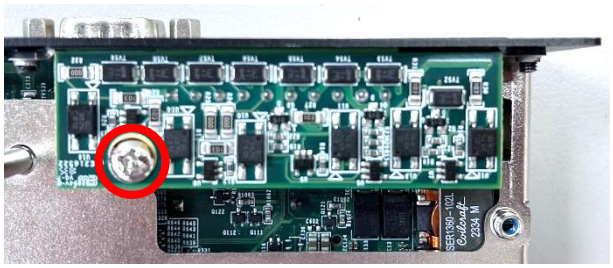
Step 3. Loosen the screws to remove the HDD bracket. And locate the connector(s) of CMI-module (BTB_FH1 or BTB_FH2) on the bottom side of the system. In the following steps, we use BTB_FH1 for installation example.



Step 4. Align the pins starting from the right side of the connector (BTB_FH1) on the system's mainboard. Insert the module vertically into the female connector, ensuring all active pins are properly aligned and securely connected.



Step 5. Ensure the screw holes are properly aligned, then fasten the M3x5L screw (included in the optional module pack) to secure the module.



Step 6. The installation process is now complete.

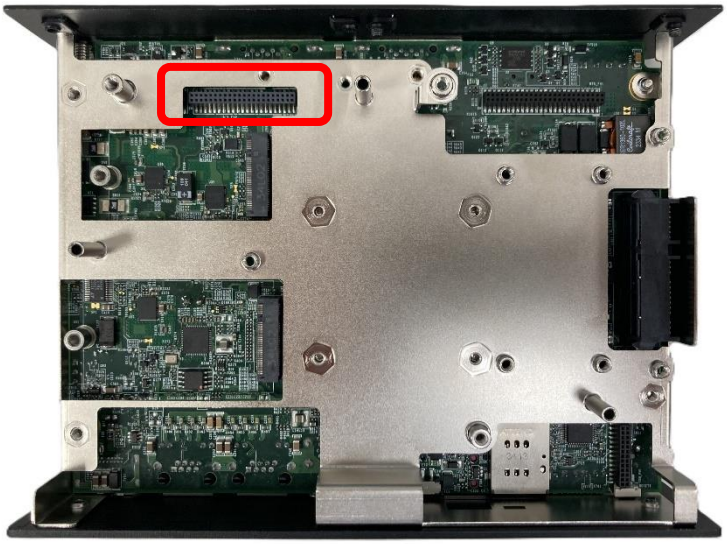
3.9.7 CMI-FAN01/UB1135

For pin-out definitions related to this module, please refer to Chapter 2.5.3.

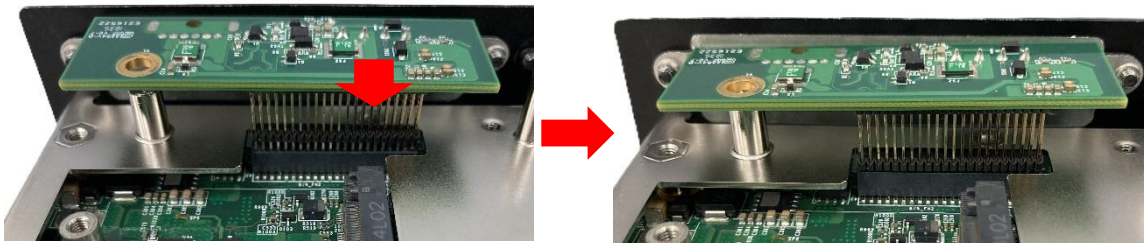
Step 1. Remove the screws to detach the left-side bracket from the system's rear panel.

Step 2. Attach the CMI-FAN module’s bracket to the backside of the system’s rear panel, and secure it using the two screws.

Step 3. Locate BTB_FH2 on the bottom side of the system.



Step 4. Align the pins starting from the right side of the connector (BTB_FH2) on the system's mainboard. Insert the module vertically into the female connector, ensuring all active pins are properly aligned and securely connected.



Step 5. Align the corner bracket with the right corner of the module.

Step 6. Ensure the screw holes are properly aligned, then fasten the two screws (included in the optional module pack) to secure the module.

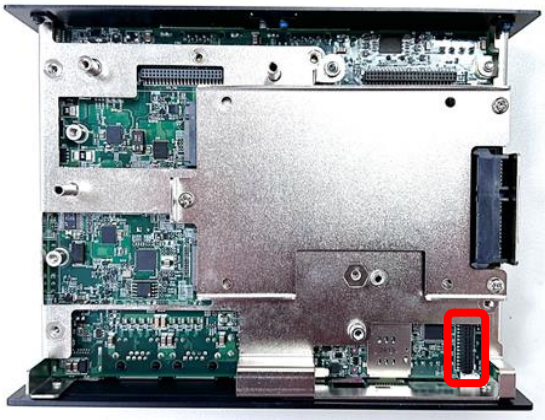
3.10 Installing CFM Module

3.10.1 CFM-IGN02

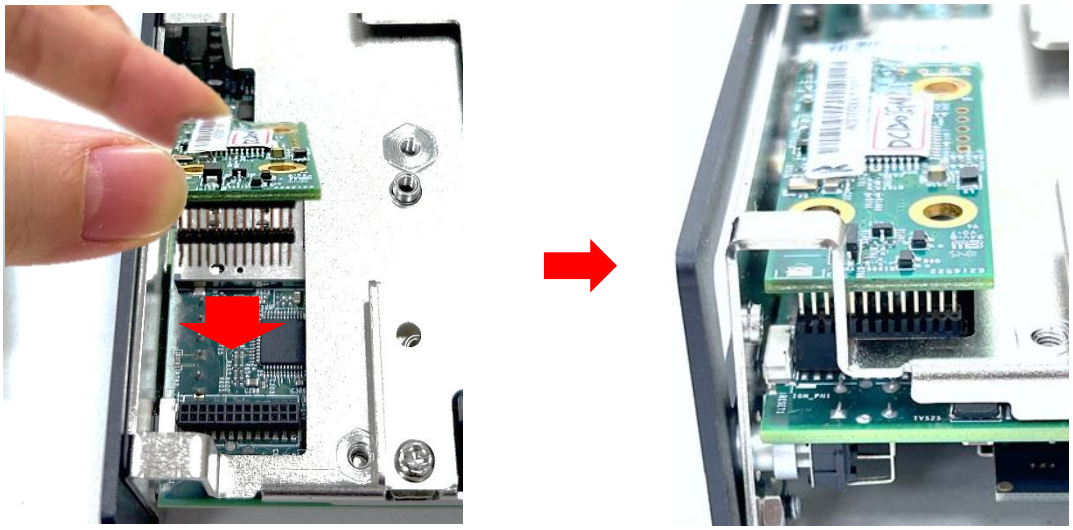
For pin-out definitions related to this module, please refer to Chapter 2.5.4.

Step 1. Loosen the 2 screws on the Maintenance Area Panel and remove it.

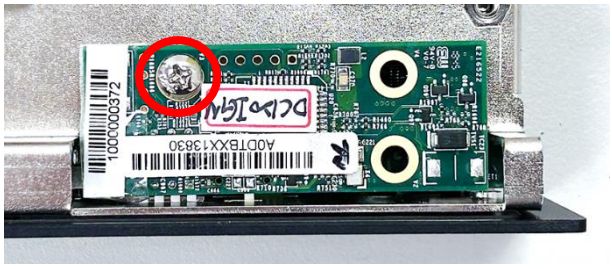
Step 2. Please refer to chapter Locate the power Ignition connector (IGN_PH1) on the bottom side of the system motherboard as indicated.



Step 3. Insert the connector of power ignition board to the female connector on system motherboard. (Make sure all the pins of IGN module's connector are firmly connected.)



Step 4. Fasten two screws (M3x5L) to secure the power ignition board.



Step 6. The installation process is complete. Users can now proceed to configure the IGN function according to their specific needs. (For pin-out definitions related to this module, please refer to Chapter 2.5.3.)

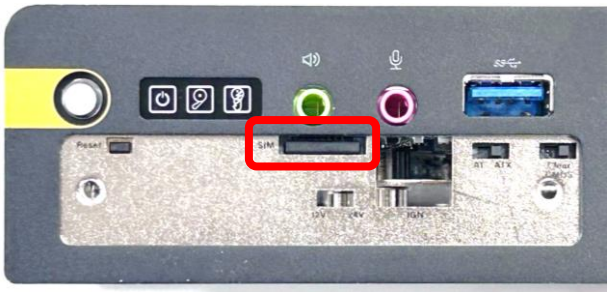
Step 7. Once the configuration is completed, make sure to securely fasten the screws as indicated before reinstalling the Maintenance Area Panel back into the system.

3.11 Installing SIM Card

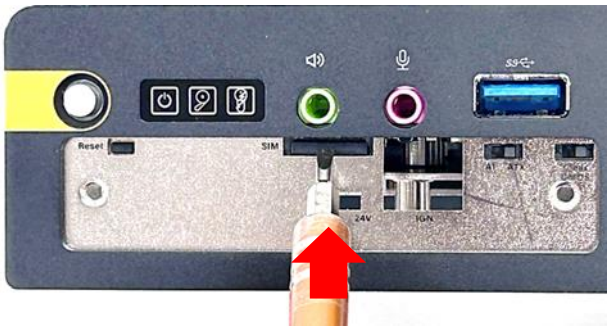
Please refer to Chapter 3.3.1 for instructions on installing a 5G/4G module before inserting the SIM card for its application.

Step 1. Loosen the 2 screws on the Maintenance Area Panel and remove it.

Step 2. Locate the SIM card slot.



Step 3. Push the SIM card adapter to pull it out.



Step 4. When pulling out the SIM card adapter, you will find there are two SIM card slots on the adapter. The top side is SIM2 slot, and the bottom side is SIM2 slot.

Top Side: SIM2

Bottom Side: SIM1

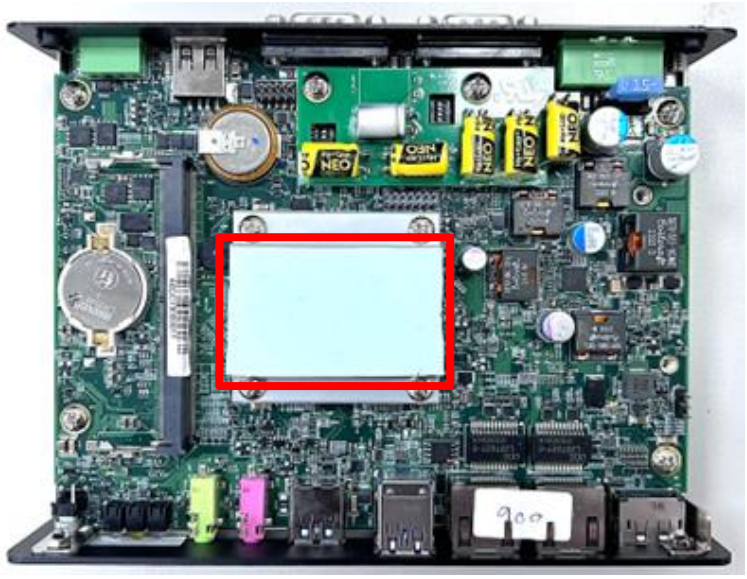
Step 5. Install SIM card(s) into the SIM card adapter. In this installation example, we install a SIM card into the SIM2 Slot.

Step 6. Insert the SIM card adapter as shown below. Our SIM card slot and adapter have foolproof mechanism to guide you to install the SIM card correctly; it will not fit if inserted incorrectly. And please note when both SIM cards are installed, the network connection will prioritize the card at SIM1.

Step 7. Once the installation is done, make sure to securely fasten the screws as indicated before reinstalling the Maintenance Area Panel back into the system.

3.12 Installing CPU Heatsink Thermal Pad

Step 1. Place the thermal pad on the CPU heatsink.



CAUTION (ATTENTION)

Before assembling the system's chassis cover, please make sure the protective film on the Thermal Pad has been removed!

(Avant d'assembler le couvercle du châssis du système, assurez-vous que le film protecteur sur le coussin thermique a été retiré !d'alimentation CC au système.)

3.13 Installing Top Cover

Step 1. Hold the system body and reattach it to the top cover.

Step 2. Place the bottom cover back onto the chassis.

Step 3. Fasten the 4 screws back onto the bottom cover.

3.14 Installing Fan Module

This accessory must be used with its corresponding CMI module and universal bracket. See Section 3.9.7 for installation.

(NOTE) **Please note that the external fan must be used with the corresponding CMI-FAN module. (Veuillez noter que le ventilateur externe doit être utilisé avec le module CMI-FAN correspondant.)**

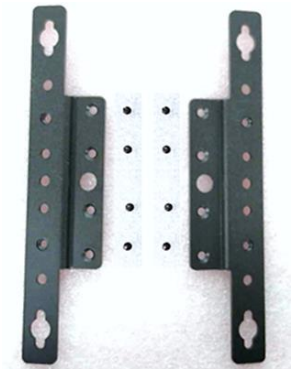
Step 1. Locate the two screws on the mounting frame. Loosen but do not remove the two screws.

Step 2. Slide the nuts of the mount bracket screws into the middle groove of the top cover until the fan is positioned in the center, as indicated below.

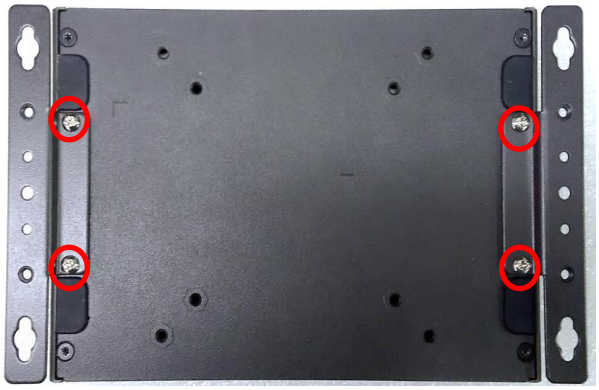
Step 3. Tighten the screws to secure the fan to the system, then plug the fan into the CMI-FAN connector. The installation process is now complete.

3.15 Installing Wall Mount Kit

This system offers wall mount Kit (2 brackets and 4 screws) for customers to install system on the wall in a convenient and economical way.



Step 1. The mounting holes are at the bottom side of system. Use provided 4 screws (M3x5L) to fasten the bracket on each side.

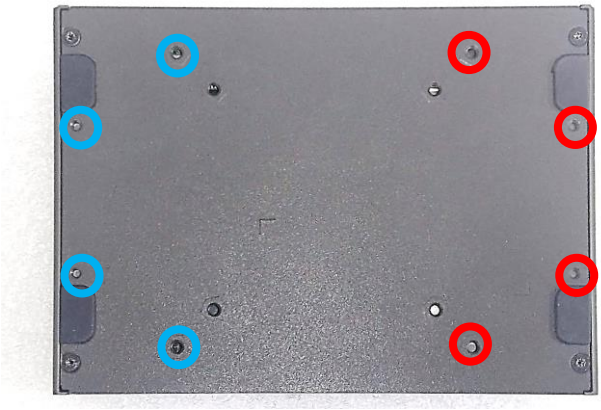


Step 2. Then user can fix the system onto the wall by fastening 2 mounting holes on each side of the wall mount bracket on the wall.

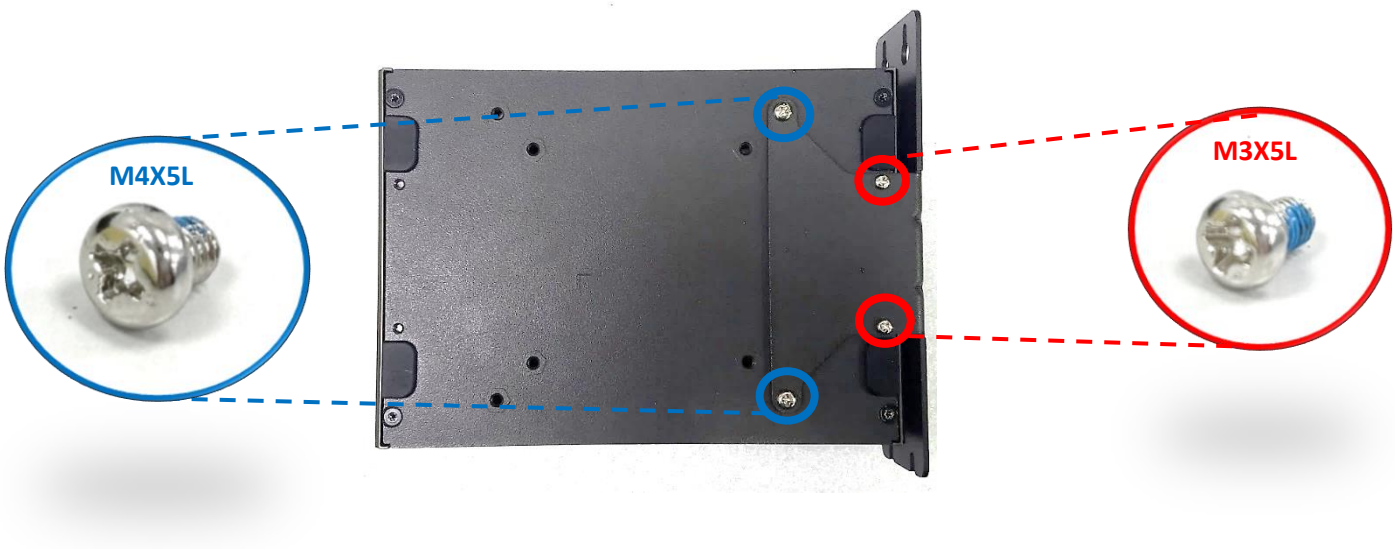
3.16 Installing Side Mount Kit

DC-1300 series offers Side Mount Kit (Model No.: SIDE03, 1 bracket and 4 screws) that customer can install system to the right or left side of wall to create effective of space.

Step 1. Locate the eight mounting holes at the bottom of the system. Four are designated for attaching the Side Mount Bracket to the left side of the system's base, and the other four for the right side. This section uses the right side as an example.



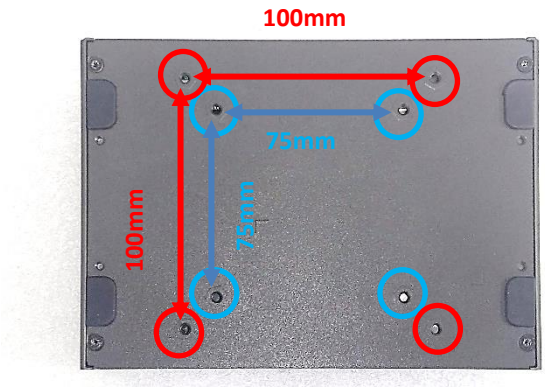
Step 2. The mounting holes are at the bottom side of system. Fasten the 4 screws (M3x5L*2pcs, M4x5L*2pcs) as indicated below to fix the side mount bracket with system together.



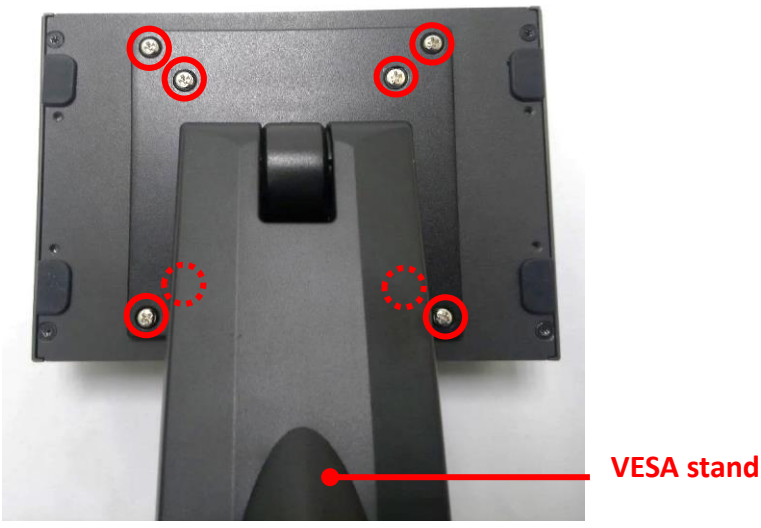
Step 2. Then it is feasible to secure the system to the wall by fastening the screws through the bracket mounting holes as indicated afterward.

3.17 Installing VESA Mount Accessories

The picture below shows the VESA mounting holes on the DC-1300 series, which comply with the VESA mounting standard. The blue holes correspond to the 75x75mm VESA mounting standard, and the red holes correspond to the 100x100mm VESA mounting standard. Users can use this system with VESA accessories of the corresponding sizes. In this section, we use a VESA stand as an example for installation.



Step 1. Align the VESA stand with the screw holes on the system, then secure it in place by tightening the corresponding number of screws as shown below. (Please note the VESA mounting holes deep 3 mm at the back of the terminal are provided with 4 x M4-type blind fasteners to fix the VESA mounting plate. Please select a suitable screw length (L) based on the on-site application.) After completing this step, the VESA mount installation for the system is complete.

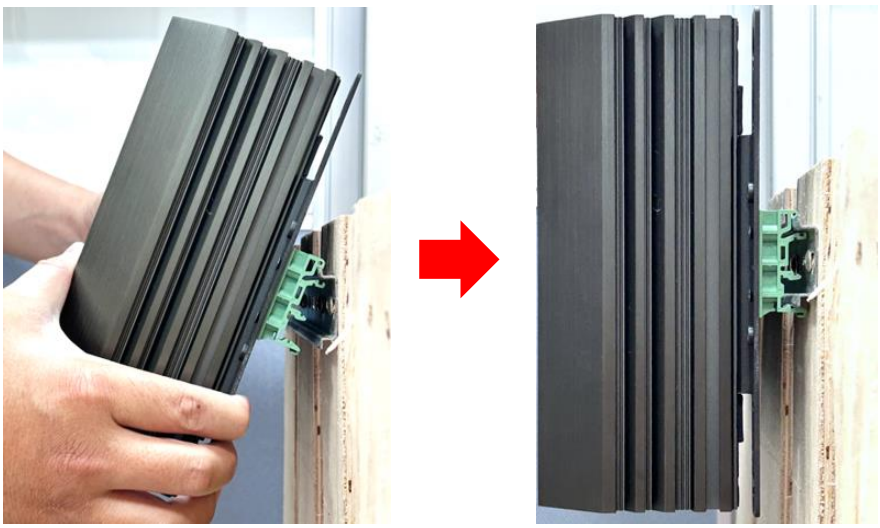


3.18 Installing DIN-Rail Mount Kit

DC-1300 series offers DIN-Rail Mount Kit (Model No.: DIN01, 2 clips and 4 screws) that users can install the system on a DIN Rail.

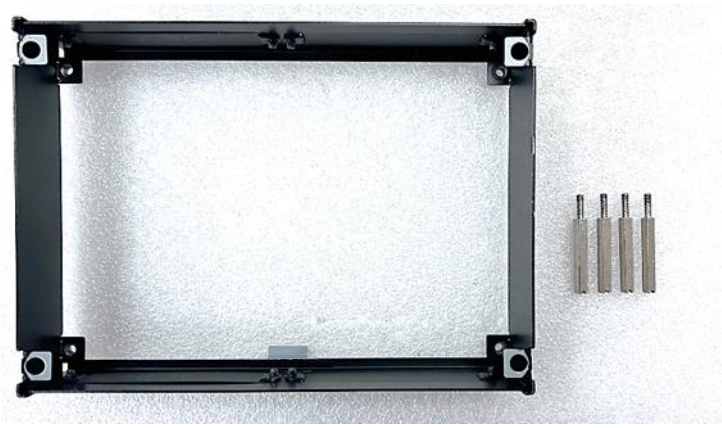
Step 1. Please refer to section 3.14 Wall Mount Brackets to install mounting bracket at both sides of system. Then fasten 2 DIN rail mounting clips to mounting brackets on both sides with provided 4 screws (with each screw size of T3x10.5) as illustrated below.

Step 2. Clip the system into DIN rail as illustrated by the following steps. (1) Have lower end of mounting clip snaps into the DIN rail. (2) Press the system toward to have upper end of mounting clip snaps into the other side of DIN rail.

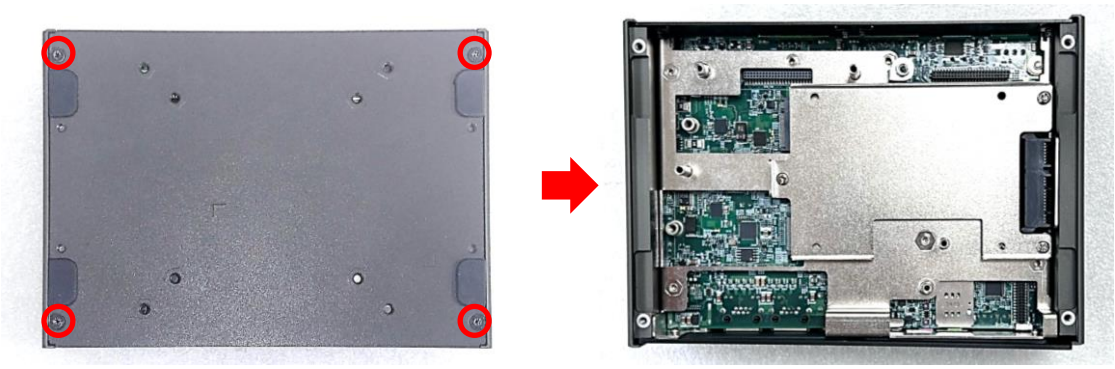


3.19 Installing Expansion Box

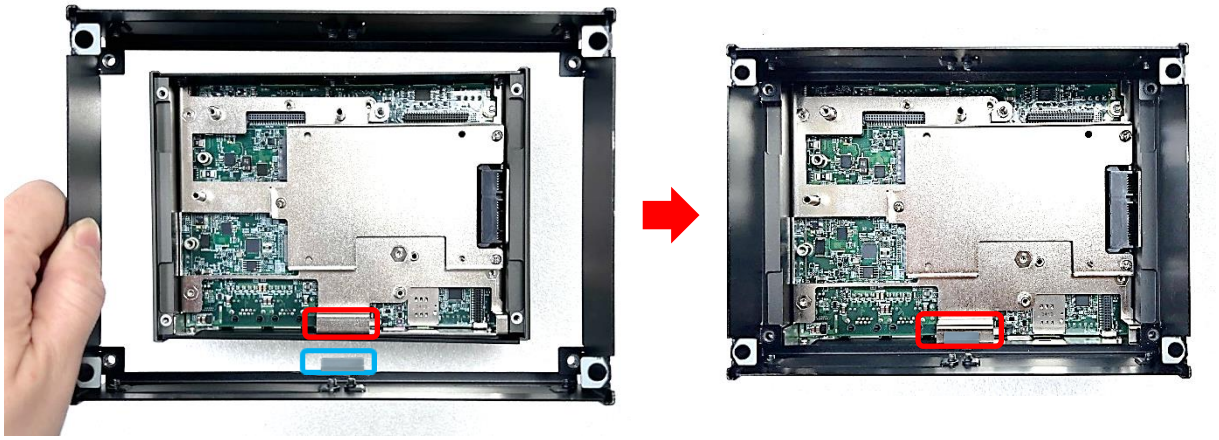
The DC-1300 series offers an expansion box (Model No.: SEB-DC01, an expansion box and four Male-Female Hex Standoff M3x30), allowing users to install optional MEC modules on the DC-1300 motherboard.



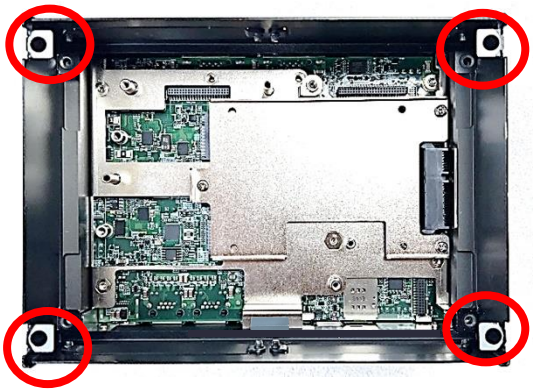
Step 1. Turn over the system unit to have the bottom side face up, loosen the 4 screws on the bottom cover then remove the bottom cover, and place them aside for later use.



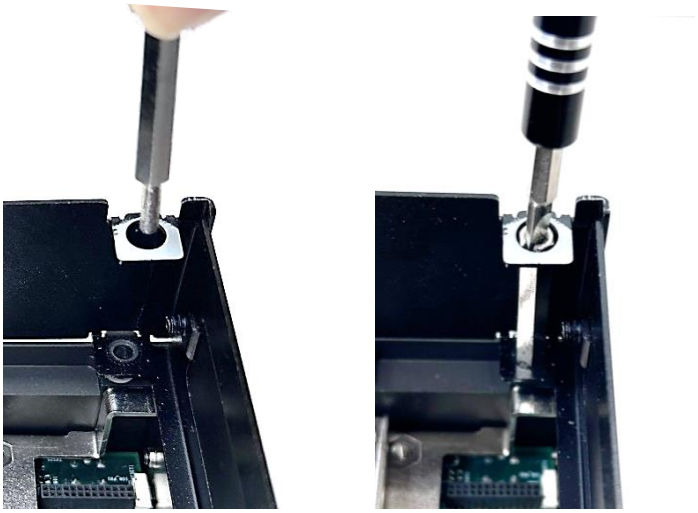
Step 2. Align the designated part of the expansion box (highlighted in blue) with the bent protrusion on the system unit (highlighted in red), as shown below. Once aligned, carefully place the expansion box onto the system unit.



Step 4. Locate the four mounting holes on the unit.



Step 5. Align the four hex standoffs with the holes on the expansion box, insert them through, and fasten them into the mounting holes on the system unit using a flathead screwdriver.



Step 6. Place the bottom cover back onto the chassis.

Step 7. Fasten the 4 screws back onto the bottom cover.

Step 8. Then the installation process is complete.

Chapter 4
BIOS Setup

4.1 BIOS Introduction

The BIOS (Basic Input/ Output System) is a program located on a Flash Memory on the motherboard. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self-test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization.

BIOS Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing <Ctrl>, <Alt> and <Delete> keys.

Control Keys	
<←> <→>	Move to select screen
<↑> <↓>	Move to select item
<Esc>	Quit the BIOS Setup
<Enter>	Select item
<Page Up/+>	Increases the numeric value or makes changes
<Page Down/->	Decreases the numeric value or makes changes
<Tab>	Select setup fields
<F1>	General help
<F2>	Previous value
<F3>	Load Optimized defaults
<F10>	Save configuration and Exit

Main Menu

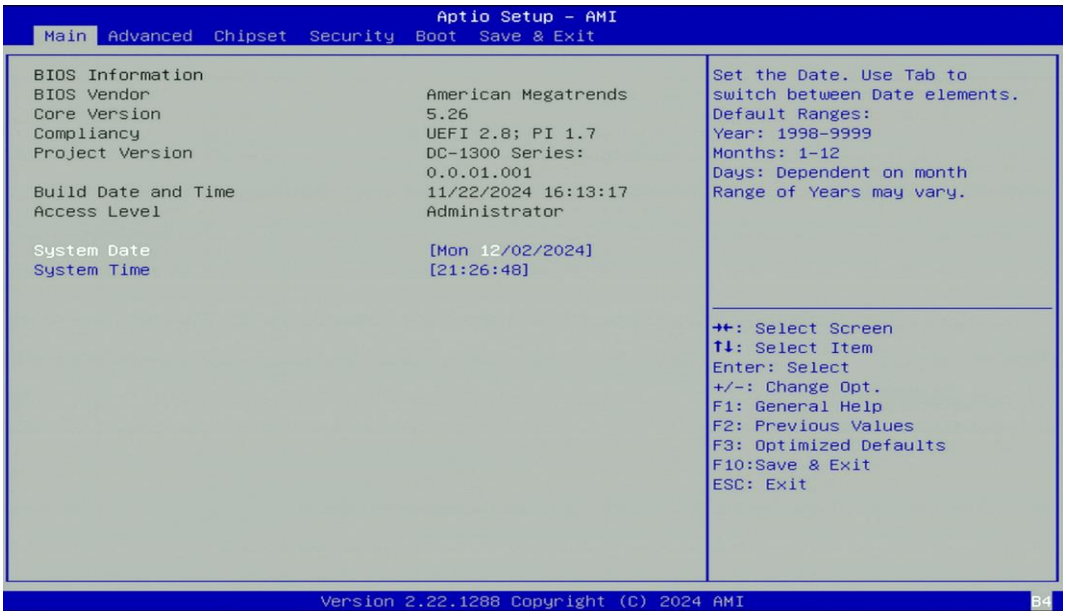
The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

4.2 Main Setup

Press <Del> to enter BIOS CMOS Setup Utility, the Main Menu (as shown below) will appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter a sub-menu.



- **System Date**

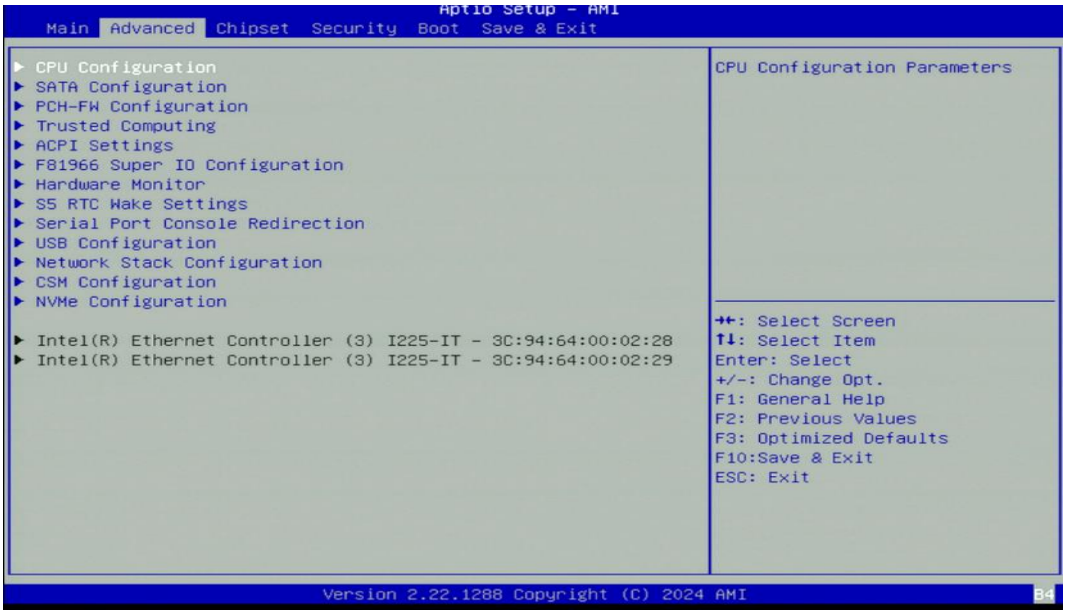
Set the date. Please use <Tab> to switch between date elements.

- **System Time**

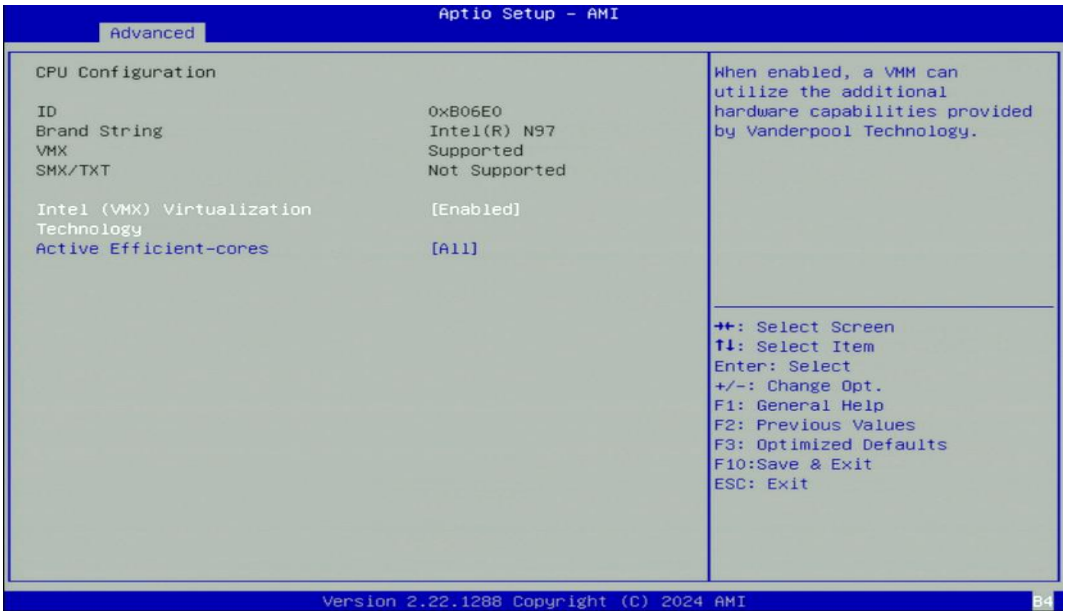
Set the time. Please use <Tab> to switch between time elements.

4.3 Advanced Setup

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



4.3.1 CPU Configuration



■ **Intel (VMX) Virtualization Technology [Enabled]**

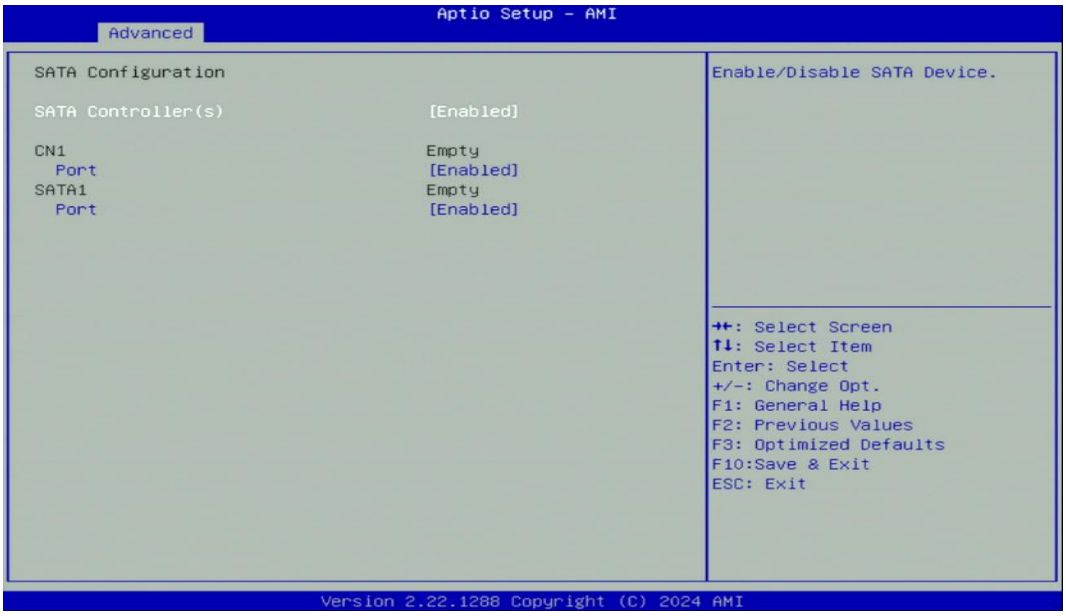
Enables or disables Intel Virtualization Technology. Virtualization enhanced by Intel Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems.

- **Active Efficient-cores**

Allows you to choose the number of active efficient cores.

Configuration options: [All] [3] [2] [1] [0].

4.3.2 SATA Configuration



- **SATA Controller(s) [Enabled]**

Enables or disables SATA device.

- **CN1**

  Port [Enabled]

  Enables or disables the SATA function of CN1.

- **SATA 1**

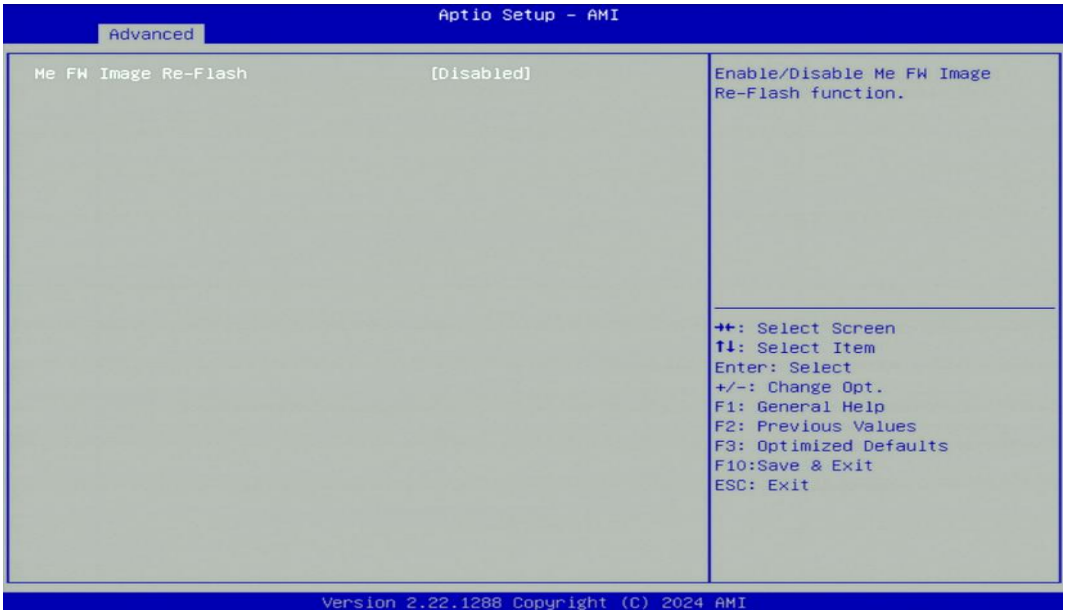
  Port [Enabled]

  Enables or disables SATA 1.

4.3.3 PCH-FW Configuration

■ **Firmware Update Configuration**

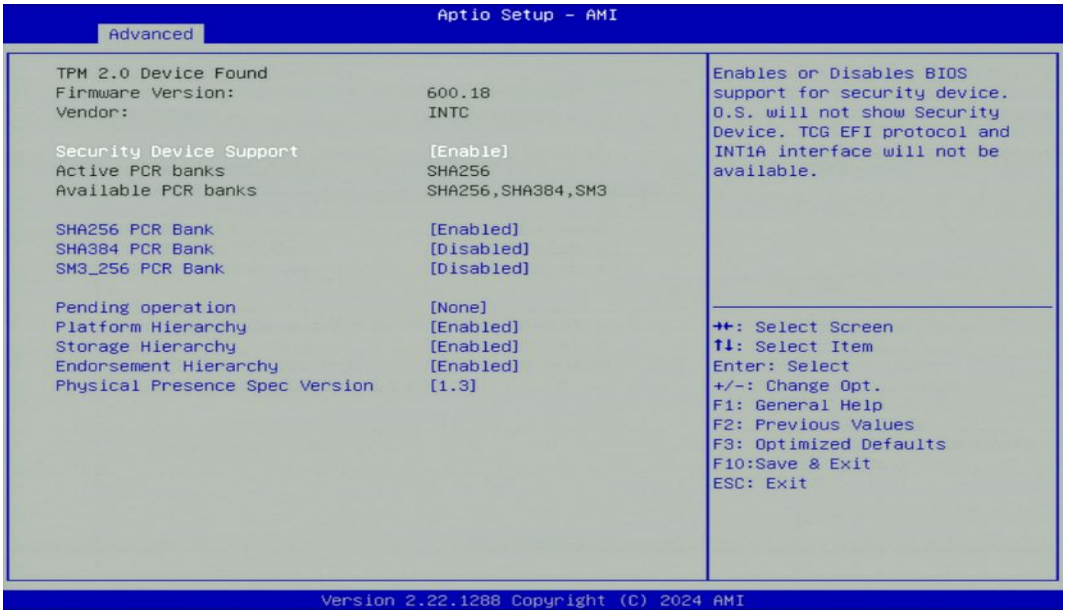
Configure Management Engine Parameters



■ **Me FW Image Re-Flash [Disabled]**

Enables or disables ME firmware Image Re-Flash function.

4.3.4 Trusted Computing Settings



- **Security Device Support [Enabled]**

Enables or disables Security Device Support function.

- **SHA256 PCR Bank [Enabled]**

Enables or disables SHA256 PCR Bank function.

- **SHA384 PCR Bank [Disabled]**

Enables or disables SHA384 PCR Bank function.

- **SM3_256 PCR Bank [Disabled]**

Enables or disables SM3_256 PCR Bank function.

- **Pending Operation [None]**

Allows you to select which mode Pending Operation will operate.

Configuration options: [None], [TPM Clear]

- **Platform Hierarchy [Enabled]**

Enables or disables Platform Hierarchy function.

- **Storage Hierarchy [Enabled]**

Enables or disables Storage Hierarchy function.

- **Endorsement Hierarchy [Enabled]**

Enables or disables Endorsement Hierarchy function.

- **Physical Presence Spec Version [1.3]**

Allows you to select which mode Physical Presence Spec Version will operate.

Configuration options: [1.2], [1.3]

4.3.5 ACPI Settings

- **Enable Hibernation [Enabled]**

Enables or disables system ability to hibernate state (OS/S4 state). This option may not be effective with some OS.

- **ACPI Sleep State [S3 (Suspend to RAM)]**

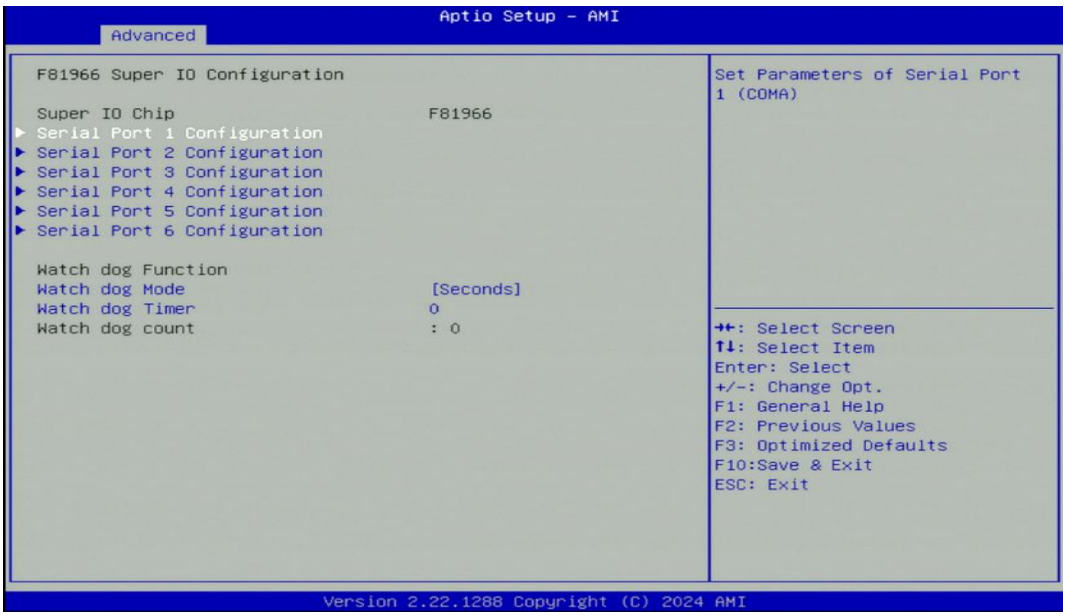
Allows users to select the highest Advanced Configuration Power Interface® (ACPI) sleep state that system will enter when suspend button is pressed.

[Suspend Disabled]: Disables entering suspend state.

[S3 (suspend to RAM)]: Enables suspend to RAM state.

4.3.6 F81966 Super IO Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and select an optimal setting for the Super IO Device.



- **Serial Port Configuration**

- **Serial Port [Enabled]**

Enables or disables serial port.

- **Change Settings [Auto]**

Allows you to change the IO Address & IRQ settings of the specified serial port.

- **Onboard Serial Port Mode [RS232]**

Allows you to select Serial Port Mode.

Configuration options: [RS232] [RS422/RS485 Full Duplex] [RS485 Half Duplex]

- **Watch Dog [Disabled]**

Enables or disables watch dog function.

- **Watch Dog Mode [Sec]**

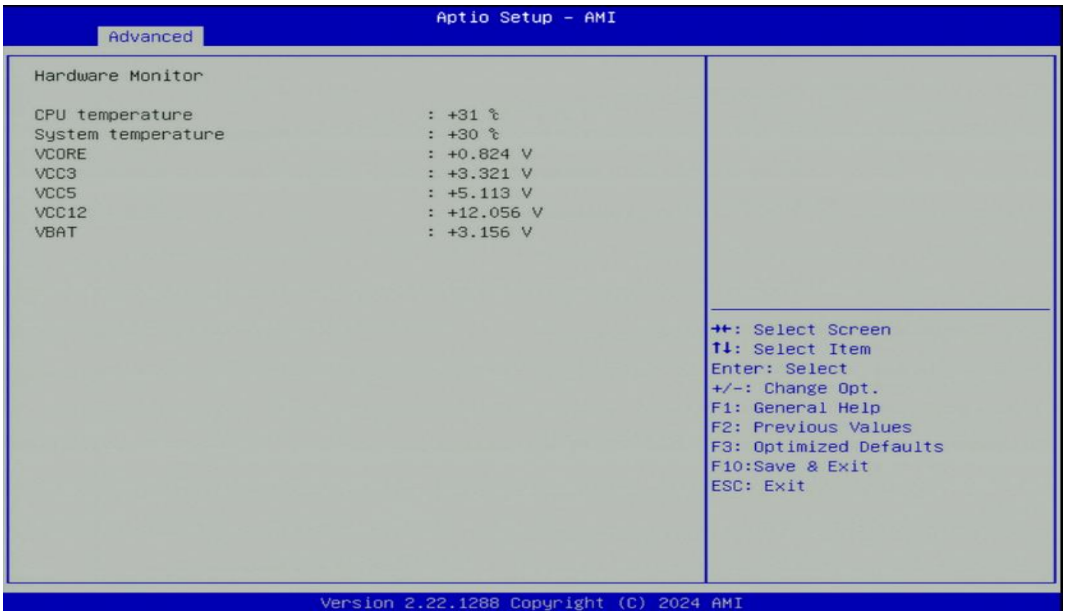
Allows to set watchdog timer unit <Sec> or <Min>.

- **Watch Dog Timer [0]**

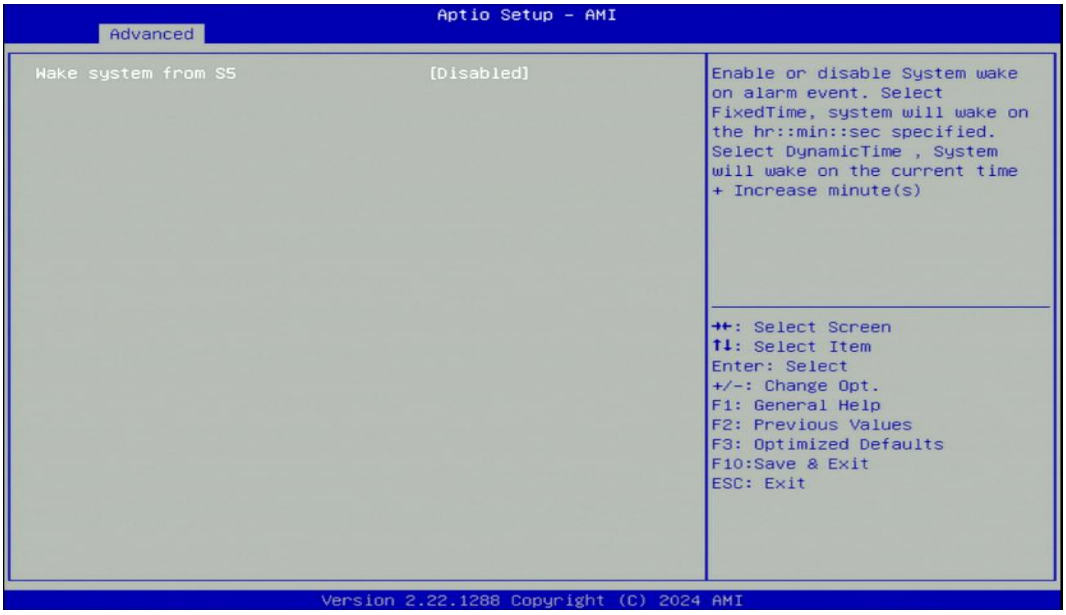
Allows you to set watchdog timer's value in the range of 0 to 255.

4.3.7 Hardware Monitor

This screen displays the current status of all monitored hardware devices/components such as voltages, temperatures.



4.3.8 S5 RTC Wake Settings



■ **Wake system from S5 [Disabled]**

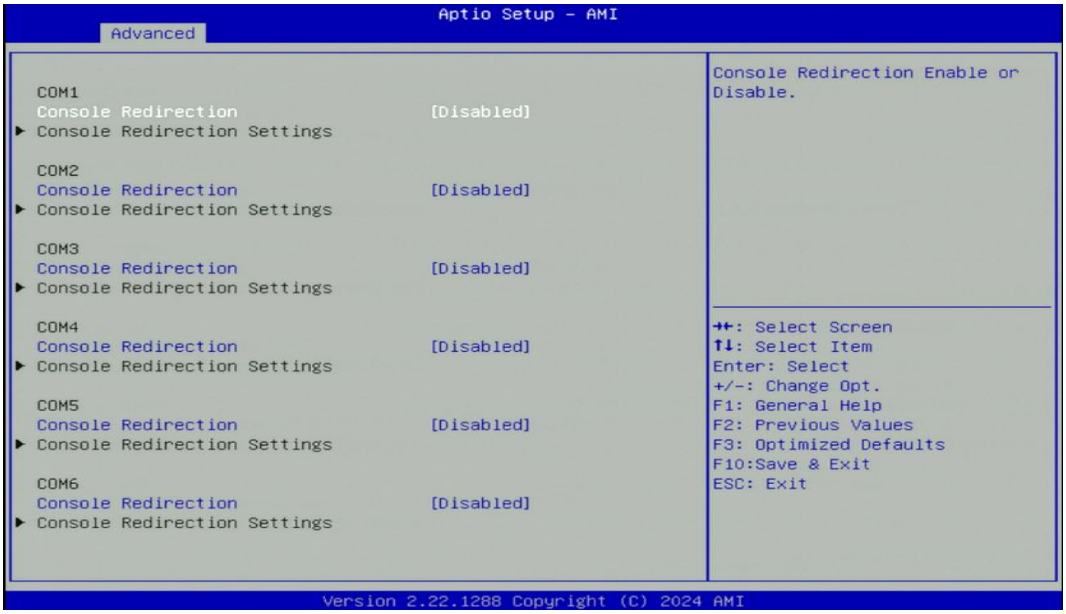
Enables or disables wake system from S5 (soft-off state).

[Disabled]: Disables wake system from S5.

[Fixed Time]: Sets a fixed time (HH:MM:SS) to wake system from S5.

[Dynamic Time]: Sets an increase minute(s) from current time to wake system from S5.

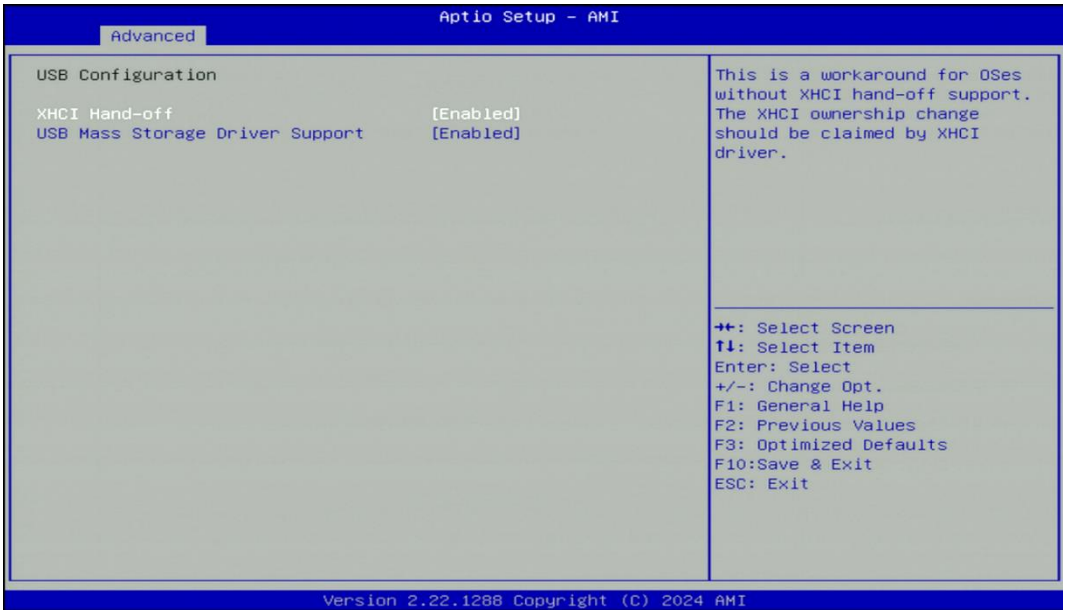
4.3.9 Serial Port Console Redirection



■ **Console Redirection [Disabled]**

Allow users to enable or disable COM1 to COM6 console redirection function.

4.3.10 USB Configuration



■ **XHCI Hand-off [Enabled]**

Enables or disables XHCI (USB3.0) hand-off function. Use this feature as a workaround for operating systems without XHCI hand-off support.

■ **USB Mass Storage Driver Support [Enabled]**

Enables or disables USB mass storage driver support.

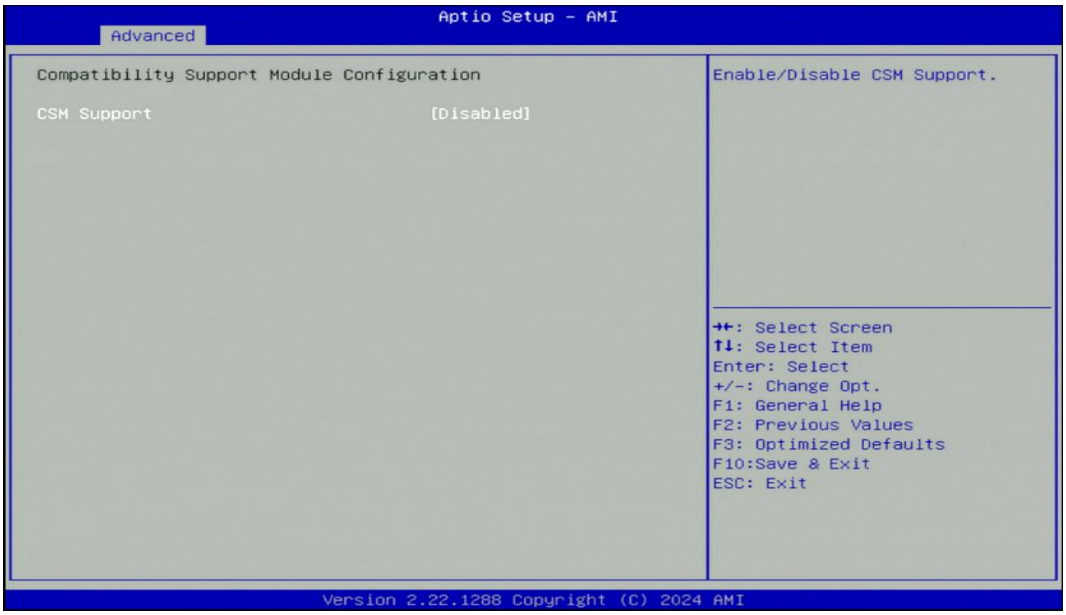
4.3.11 Network Stack Configuration

■ **Network Stack [Disabled]**

Enables or disables UEFI Network Stack.

4.3.12 CSM Configuration

This option controls legacy/UEFI ROMs priority.

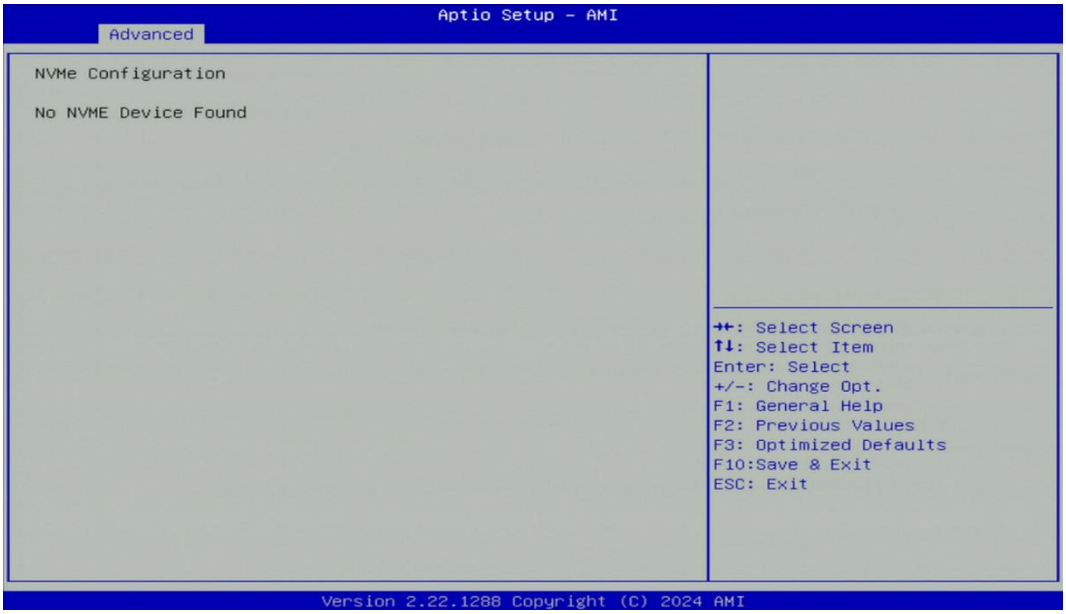


■ **CSM Support [Disabled]**

Enables or disables compatibility support module.

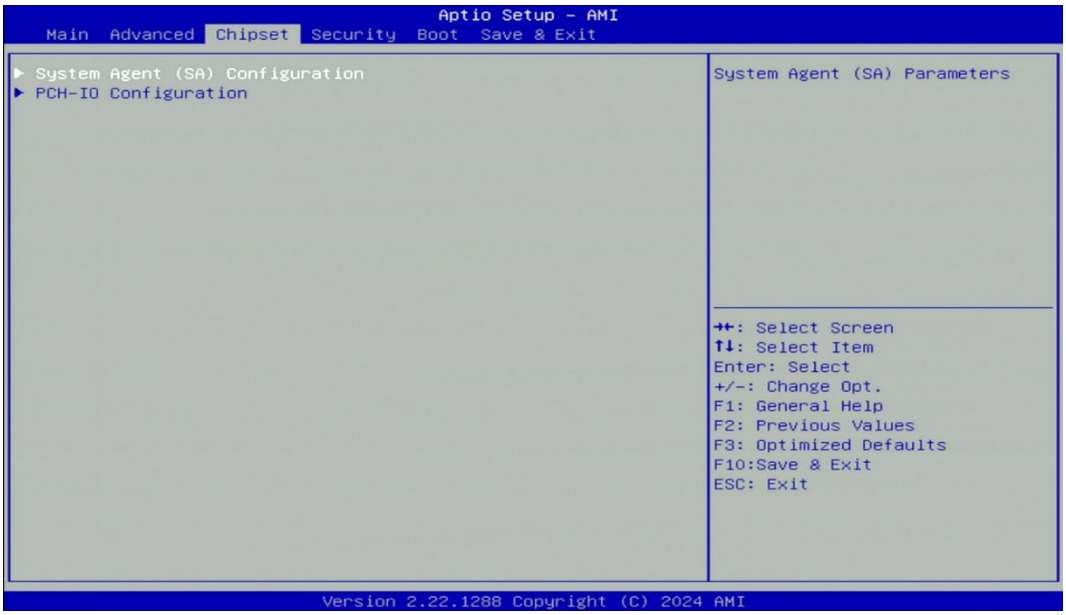
4.3.13 NVMe Configuration

The screen allows users to select options for the NVMe configuration, and change the value of the selected option. If there is NVMe Device detected, the options will show as the NVMe Device is found.

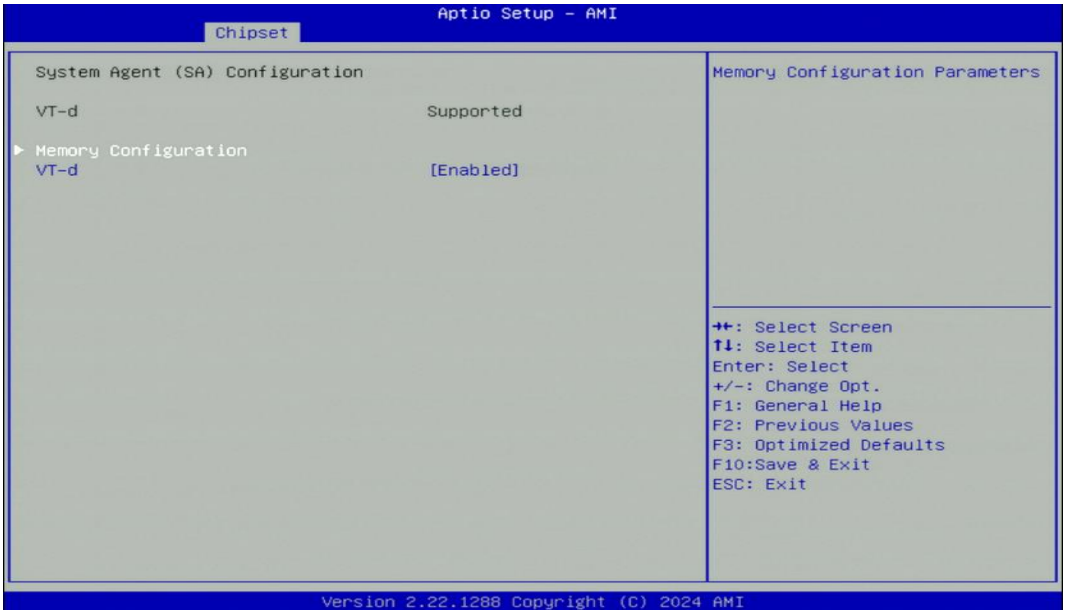


4.4 Chipset Setup

This section allows you to configure chipset related settings according to user's preference.

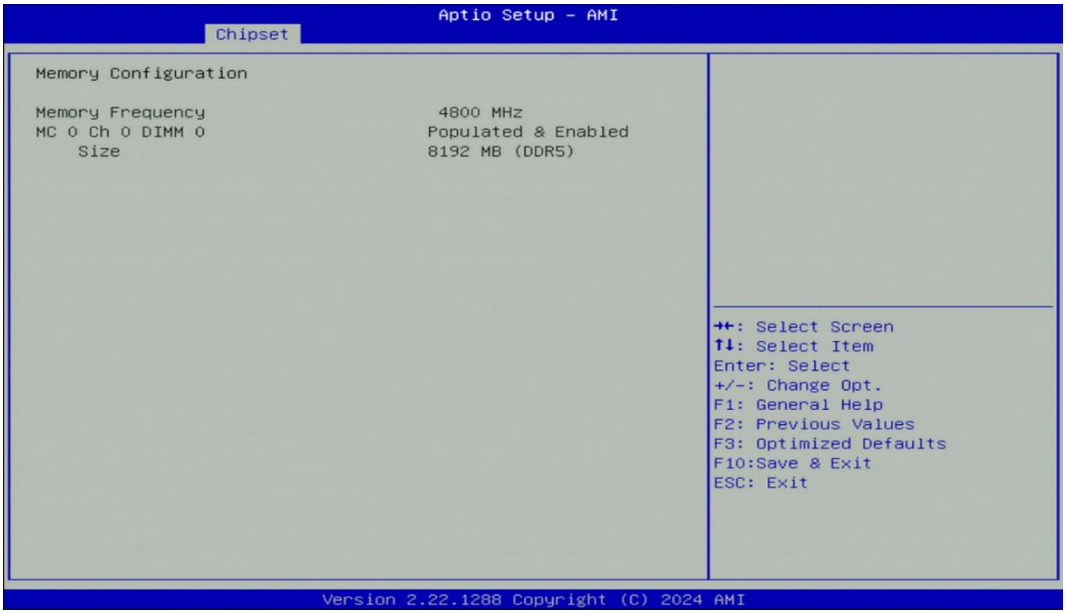


4.4.1 System Agent (SA) Configuration



■ **Memory Configuration**

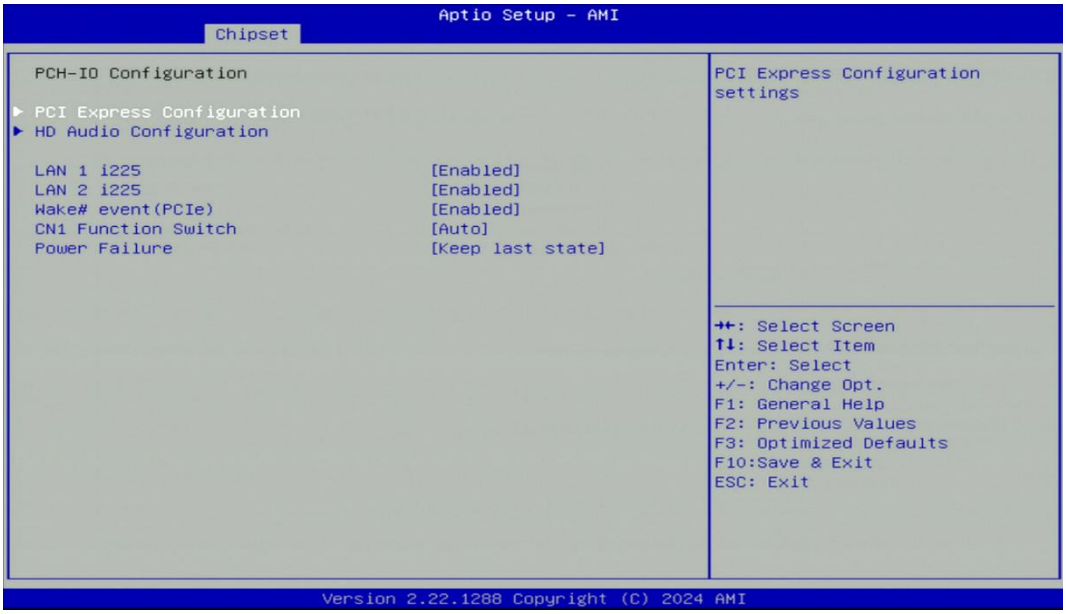
This item displays detailed memory configuration in the system.



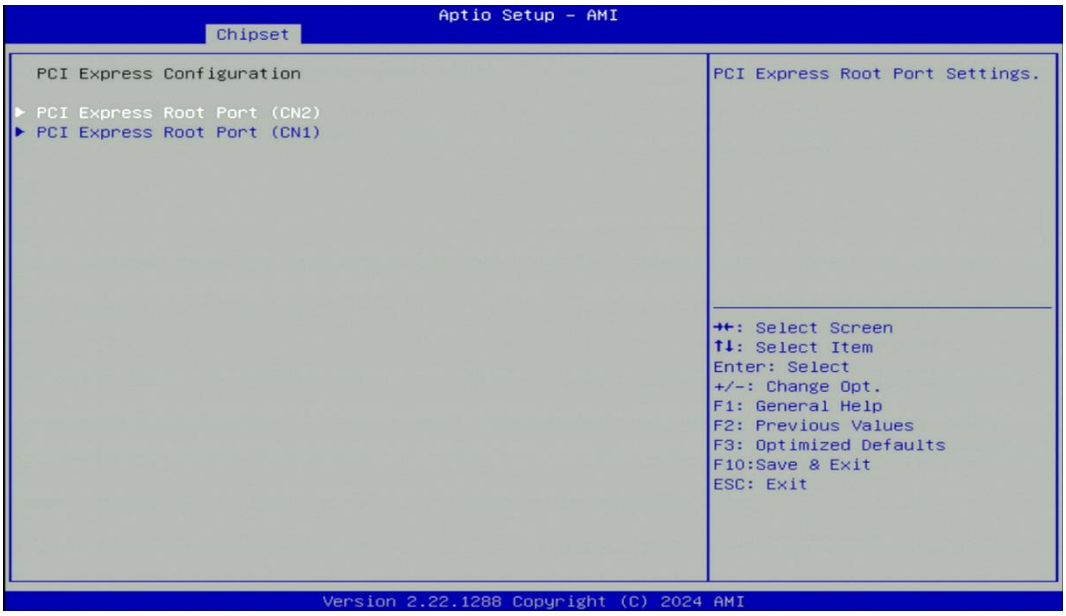
■ **VT-d [Enabled]**

Enables or disables Intel® Virtualization Technology for Directed I/O (VT-d) capability.

4.4.2 PCH-IO Configuration



- **PCI Express Configuration**



- **PCI Express Root Port (CN2)**
  - **PCI Express Root Port [Enabled]**

    Enables or disables PCI Express Root Port.
  - **PCIe Speed [Auto]**

    Allows you to select PCI Express interface speed.

    Configuration options: [Auto] [Gen1] [Gen2] [Gen3].
- **PCI Express Root Port (CN1)**
  - **PCI Express Root Port [Enabled]**

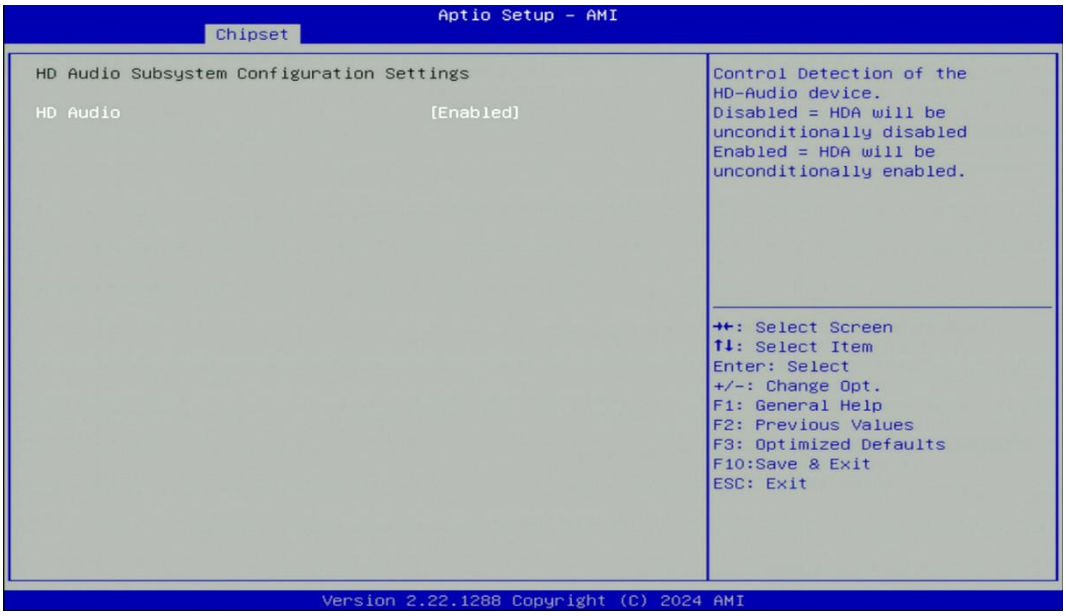
    Enables or disables PCI Express Root Port.

- **PCIe Speed [Auto]**

  Allows you to select PCI Express interface speed.

  Configuration options: [Auto] [Gen1] [Gen2] [Gen3].

- **HD Audio Configuration**



  - **HD Audio [Enabled]**

    Enables or disables HD Audio.

- **LAN 1 i225 [Enabled]**

Enables or disables LAN 1 i225 LAN Controller.

- **LAN 2 i225 [Enabled]**

Enables or disables LAN 2 i225 LAN Controller.

- **Wake# event (PCIe) [Enabled]**

Enables or disables Wake# event (PCIe).

- **CN1 Function Switch [Auto]**

Allows you to change CN1 Function as [Auto], [SSD-SATA], [SSD-PCIe], [WWAN-PCIe], or [WWAN-USB3].

- **Power Failure [Keep last state]**

Allows you to specify which power state system will enter when power is resumed after a power failure (G3 state).

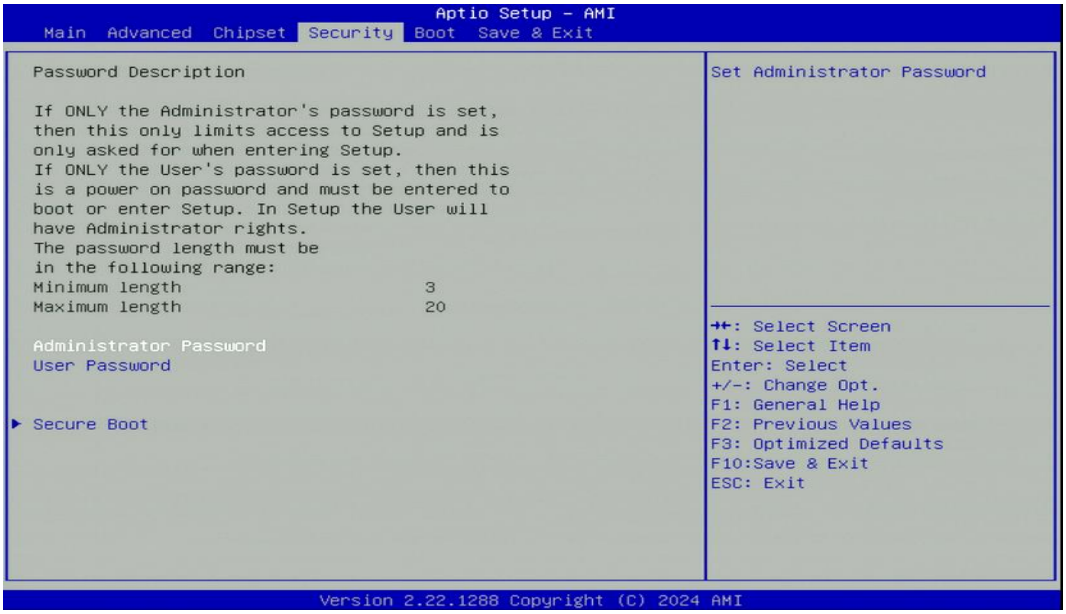
[Always on]: Enters to power on state.

[Always off]: Enters to power off state.

[Keep last state]: Enters to the last power state before a power failure.

4.5 Security Setup

This section allows users to configure BIOS security settings.



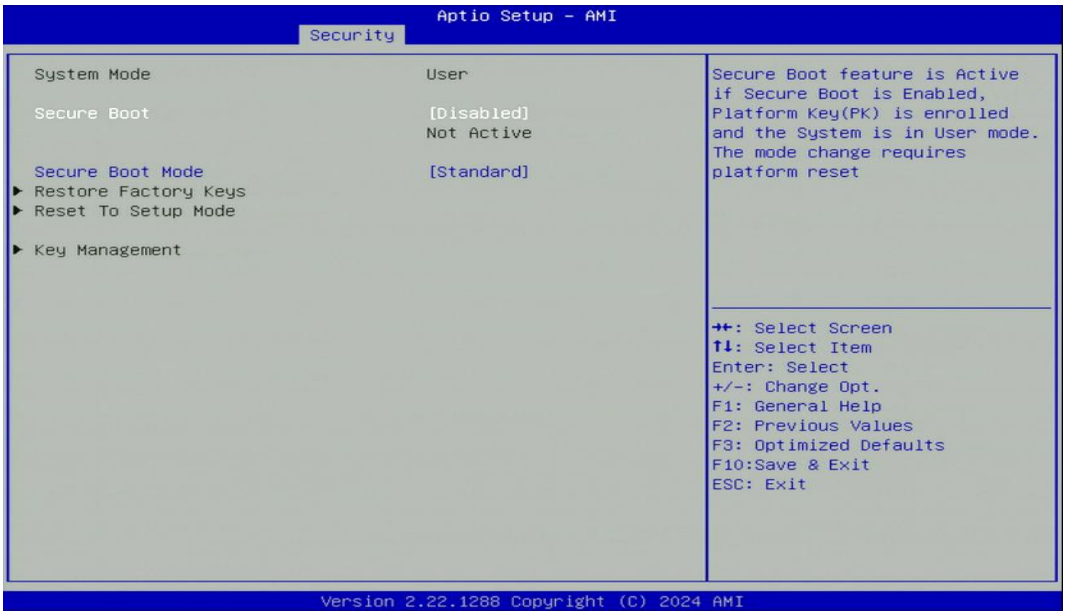
- **Administrator Password**

Administrator Password controls access to the BIOS Setup utility.

- **User Password**

User Password controls access to the system at boot and to the BIOS Setup utility.

- **Security Boot**



- **Secure Boot [Disabled]**

  Enable or disable Secure Boot function.

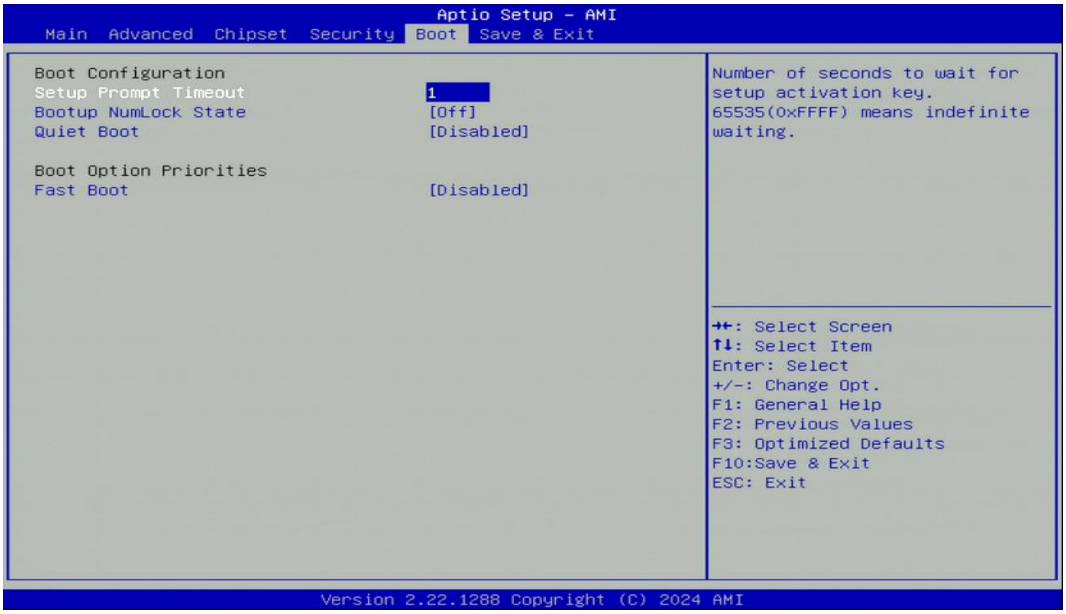
- **Secure Boot Mode [Standard]**

  Allows you to select Secure Boor Mode.

  Configuration options: [Standard] [Custom].

4.6 Boot Setup

This section allows you to configure Boot settings.



- **Setup Prompt Timeout [1]**

Use this item to set number of seconds (1..65535) to wait for setup activation key.

- **Bootup NumLock State [Off]**

Allows you to set NumLock key to [On] or [Off] state when system boots up.

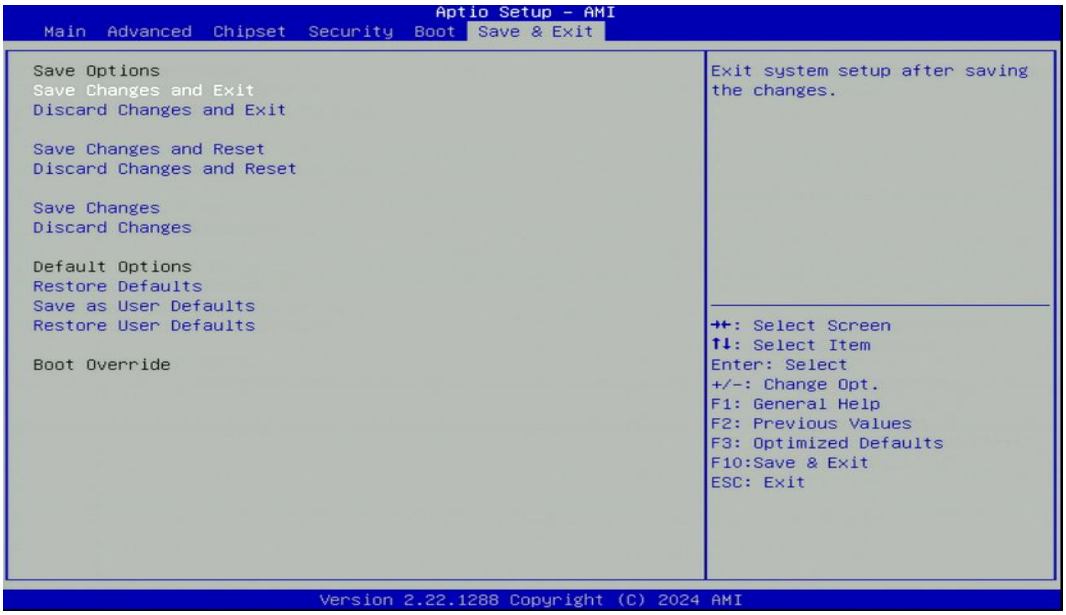
- **Quiet Boot [Disabled]**

Allows you to enable or disable Quiet Boot function.

- **Fast Boot [Disabled]**

Allows you to enable or disable Fast Boot function. If enabled, system boots with initialization of a minimal set of devices required to launch active boot option.

4.7 Save & Exit



- **Save Changes and Exit**

This item allows you to exit the system after saving changes.

- **Discard Changes and Exit**

This item allows you to exit system setup without saving any changes.

- **Save Changes and Reset**

This item allows you to reset the system after saving changes.

- **Discard Changes and Reset**

This item allows you to reset system setup without saving any changes.

- **Save Changes**

This item allows you to save changes.

- **Discard Changes**

This item allows you to discard changes.

- **Restore Defaults**

This item allows you to restore/ load default values for all the setup options.

- **Save as User Defaults**

This item allows you to save the changes done so far as user defaults.

- **Restore User Defaults**

This item allows you to restore the user defaults to all the setup options.

Chapter 5
Product Application

5.1 Where to download drivers?

Drivers for the DC-1300 Series can be downloaded from the CINCOZE website.

5.2 Where to find the technical documents?

The following documents are the most relevant technical references for the DC-1300 Series. All documents can be accessed via the CINCOZE Partner Zone:

- **Application Notes**: Navigate to *Home > Partner Zone > Technical Support > Application Notes*.
- **Configure & Installation**: Navigate to *Home > Partner Zone > Technical Support > Configure & Installation*.
- **Other Product Information**: Navigate to *Home > Partner Zone > Product Center > Product Information > Rugged Embedded Computers > Entry Performance & Compact (DC Series) > DC-1300 Series*.

Catalog	Document Tile
Application Notes	DIO Application Guide
	DIO Technical Guide
	WDT Application Guide
	WDT Technical Guide
Configure & Installation	AT ATX Power Mode Function Manual
	BIOS Administrator User Password
	Clear CMOS Function Manual
	COM Port Function Manual
	CSM Function Manual
	Digital I/O Function Manual
	How to import Secure Boot Key?
	How to restore Windows image with Clonezilla?
	How to set TPM function under Windows?
	How to stop automatic driver update in Windows
	How to Update BIOS and ME under UEFI shell?
	How to Update BIOS under UEFI shell?
	How to Update BIOS under Windows?
	IGN Module User Manual
	PXE Function Manual
	Remote Switch Function Manual
	Wake On LAN Function Manual
	WDT Function Manual