Drawing No.: ASRI-EX02-01_T07

ASRock Industrial

iEP-5010G-DCN

User Manual

Version 1.1
Published May, 2026
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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

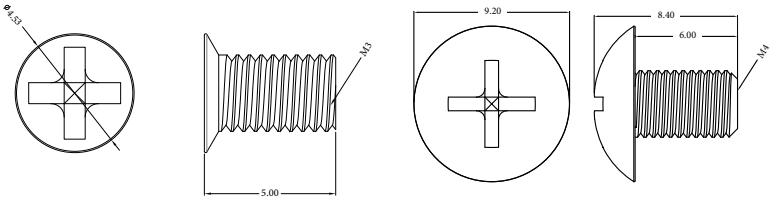
ASRock Industrial's Website: www.asrockind.com

Important Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

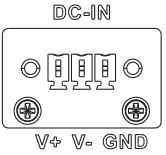
1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Read the Specifications section of this manual for detailed information on the recommended operating environment.
4. Disconnect the equipment from all AC outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or sprayed detergent.
5. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
6. Do not leave the equipment in an environment with a storage temperature of below -40 °C (-40 °F) or above 85 °C (185 °F) as this may cause damage. The equipment should be stored in a controlled environment.
7. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
8. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
9. If the equipment is not used for a long time, disconnect the equipment from the power source to avoid damage from transient over-voltage.
10. All cautions and warnings on the equipment should be noted.
11. To avoid electrical shock and/or damage to device:
    - Keep device away from water or liquid sources.
    - Keep device away from high heat or humidity.
    - Keep device properly ventilated (do not block or cover ventilation openings).
    - Always use recommended voltage and power source settings.
    - Always install and operate device near an easily accessible electrical outlet.
    - Secure the power cord (do not place any object on/over the power cord).
    - Only install/attach and operate device on stable surfaces and/or recommended mountings.
    - The power cord must be connected to a socket or outlet with a ground connection.
12. If one of the following occurs, have 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 is malfunctioning or does not operate according to the user manual.
    - The equipment has been dropped and damaged.
    - The equipment shows obvious signs of breakage.
13. Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools.
14. Any unverified component may cause unexpected damage. To ensure correct installation, always use the components (e.g., screws) provided in the accessory box.

15. This equipment is not suitable for use in locations where children are likely to be present.
16. The equipment should only be installed in a restricted access area.
17. Restricted Access Location : It is recommended that the device be installed only in a server room or computer room where access is:
    - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required.
    - Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location.
    - Be sure to turn off the power and then disconnect the power cords from your system before performing any installation or servicing. A sudden surge of power could damage sensitive electronic components.
    - All interior servicing is to be performed by qualified skilled personnel only, which requires the use of a tool for open the metal enclosure.



DIN Rail/Wall Mount: M3x5mm Screws *(for securing the mounting bracket(s) to the chassis)*
VESA Mount: M4x6mm Screws *(for securing the VESA bracket to the monitor)*

18. This product is intended to be supplied by a Listed Power Adapter or DC power source, rated 6~36V, 7.35A~1.23A minimum, Tma = 70°C (For input 6-36Vdc) minimum. If further assistance is needed, please contact ASRock Industrial for further information.



19. This is open-type equipment and should be installed in a suitable enclosure.
20. At least 25 mm clearance must be maintained on all sides.
21. The product has passed the CE test for environmental specifications when shielded cable are used for external wiring. Shielded interface cables must be used in order to comply with the emission limits.
22. This is open type equipment and should be installed in a suitable enclosure.
23. The iEP-5010G-DCN is suitable for use in Class I, Division 2, Groups A, B, C, and D hazardous locations, or in nonhazardous locations only.
24. Temperature code: T4

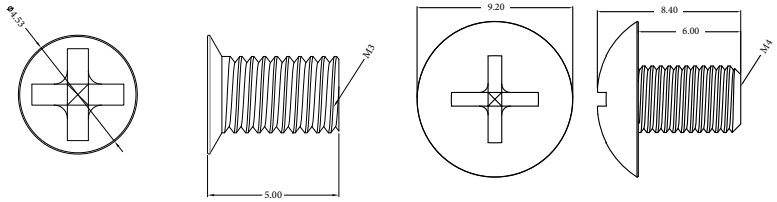
25. WARNING – EXPLOSION HAZARD – Do not disconnect equipment while the circuit is live unless the area is known to be free of ignitable concentrations.
26. WARNING – EXPLOSION HAZARD – For the iEP-5010G-DCN, do not substitute any components, as doing so may impair its suitability for Class I, Division 2.
27. ATEX, UL 26 ATEX 3513 Rev. 0:
    EN IEC 60079-0:2018
    EN IEC 60079-0:2018/A11:2024
    EN 60079-7:2015
    EN IEC 60079-7:2015/A1:2018
28. IECEx, UL 26.0012 Issue 0:
    IEC 60079-0, Edition 7.0, issued 2017-12, + Corr. 1:2020-01
    IEC 60079-7, Edition 5.1 (2017-08)
    CENELEC EN IEC 60079-0, issued 2018-07 / AC:2020-02 / A11:2024-01
    EN 60079-7:2015/A1:2018
     II 3 G Ex ec IIC T4 Gc
29. If the customer installs the device, please contact ASRock Industrial Computer Corp. for further assistance.

Consignes de sécurité importantes

Pour la sécurité de l'utilisateur, veuillez lire et suivre toutes les instructions, avertissements, mises en garde et remarques indiqués dans ce manuel et sur l'appareil associé avant de manipuler ou d'utiliser l'appareil, afin d'éviter toute blessure ou tout dommage.

1. Lisez attentivement ces consignes de sécurité.
2. Conservez ce manuel d'utilisation pour référence ultérieure.
3. Consultez la section « Specifications » de ce manuel pour obtenir des informations détaillées sur l'environnement de fonctionnement recommandé.
4. Débranchez l'équipement de toutes les prises secteur avant le nettoyage. Utilisez uniquement un chiffon humide pour le nettoyer. N'utilisez pas de détergent liquide ou en aérosol.
5. Placez l'équipement sur une surface stable pendant l'installation. Une chute ou un basculement de l'équipement peut l'endommager.
6. Ne laissez pas l'équipement dans un environnement où la température de stockage est inférieure à -40 °C (-40 °F) ou supérieure à 85 °C (185 °F), car cela pourrait l'endommager. L'équipement doit être stocké dans un environnement contrôlé.
7. Assurez-vous que la tension de la source d'alimentation est correcte avant de brancher l'équipement à une prise électrique.
8. Placez le cordon d'alimentation à l'écart des zones de passage. Ne placez aucun objet sur le cordon d'alimentation.
9. Si l'équipement n'est pas utilisé pendant une longue période, débranchez-le de la source d'alimentation afin d'éviter tout dommage dû à une surtension transitoire.

10. Respectez toutes les mises en garde et tous les avertissements figurant sur l'équipement.
11. Pour éviter tout choc électrique et/ou tout dommage à l'appareil :
    - Tenez l'appareil à l'écart de l'eau ou de toute source de liquide.
    - Tenez l'appareil à l'écart de toute source de chaleur élevée ou d'humidité.
    - Assurez une ventilation adéquate de l'appareil (ne bloquez pas et ne couvrez pas les ouvertures de ventilation).
    - Utilisez toujours les réglages de tension et la source d'alimentation recommandés.
    - Installez et utilisez toujours l'appareil à proximité d'une prise électrique facilement accessible.
    - Fixez correctement le cordon d'alimentation (ne placez aucun objet sur ou au-dessus du cordon d'alimentation).
    - Installez, fixez et utilisez l'appareil uniquement sur des surfaces stables et/ou avec les systèmes de montage recommandés.
    - Le cordon d'alimentation doit être raccordé à une prise avec mise à la terre.
12. Si l'un des cas suivants se produit, faites vérifier l'équipement par du personnel de maintenance :
    - Le cordon d'alimentation ou la fiche est endommagé(e).
    - Du liquide a pénétré dans l'équipement.
    - L'équipement a été exposé à l'humidité.
    - L'équipement présente un dysfonctionnement ou ne fonctionne pas conformément au manuel d'utilisation.
    - L'équipement est tombé et a été endommagé.
    - L'équipement présente des signes évidents de détérioration.
13. N'essayez jamais de réparer l'appareil vous-même. Toute intervention doit être effectuée uniquement par un personnel technique qualifié utilisant des outils appropriés.
14. Tout composant non vérifié peut provoquer des dommages imprévus. Pour garantir une installation correcte, utilisez toujours les composants (par exemple, les vis) fournis dans la boîte d'accessoires.
15. Cet équipement ne convient pas à une utilisation dans des lieux où des enfants sont susceptibles d'être présents.
16. L'équipement doit être installé uniquement dans une zone à accès restreint.
17. Lieu à accès restreint : Il est recommandé d'installer l'appareil uniquement dans une salle serveur ou une salle informatique où l'accès est :
    - Réservé au personnel de maintenance qualifié ou aux utilisateurs connaissant les restrictions applicables au lieu, les raisons de celles-ci et les précautions requises.
    - Uniquement possible au moyen d'un outil, d'une serrure et d'une clé, ou d'un autre dispositif de sécurité, et contrôlé par l'autorité responsable du lieu.
    - Veillez à mettre l'appareil hors tension, puis à débrancher les cordons d'alimentation de votre système avant toute installation ou intervention de maintenance. Une surtension soudaine pourrait endommager des composants électroniques sensibles.
    - Toute intervention à l'intérieur de l'appareil doit être effectuée uniquement par un personnel qualifié et nécessite l'utilisation d'un outil pour ouvrir le boîtier métallique.



Montage sur rail DIN/mural: *vis M3x5 mm (pour fixer le(s) support(s) de montage au châssis*)
Montage VESA: *vis M4x6 mm (pour fixer le support VESA au moniteur)*

18. Ce produit doit être alimenté par un adaptateur secteur homologué ou une source d'alimentation CC, nominale de 6 à 36 V, 7,35 A à 1,23 A minimum, Tma = 70 °C minimum (pour une entrée de 6 à 36 Vcc). Si vous avez besoin d'une assistance complémentaire, veuillez contacter ASRock Industrial pour plus d'informations.
19. Il s'agit d'un équipement de type ouvert et il doit être installé dans un boîtier approprié.
20. Un dégagement d'au moins 25 mm doit être maintenu sur tous les côtés.
21. Le produit a satisfait au test CE relatif aux spécifications environnementales lorsque des câbles blindés sont utilisés pour le câblage externe. Des câbles d'interface blindés doivent être utilisés afin de respecter les limites d'émission.
22. Il s'agit d'un équipement de type ouvert et il doit être installé dans un boîtier approprié.
23. Le modèle iEP-5010G-DCN convient à une utilisation dans des emplacements dangereux de Classe I, Division 2, Groupes A, B, C et D, ou uniquement dans des emplacements non dangereux.
24. Code de température : T4
25. AVERTISSEMENT – RISQUE D'EXPLOSION – Ne débranchez pas l'équipement lorsque le circuit est sous tension, sauf si la zone est reconnue comme exempte de concentrations inflammables.
26. AVERTISSEMENT – RISQUE D'EXPLOSION – Pour le modèle iEP-5010G-DCN, ne remplacez aucun composant, car cela pourrait compromettre son aptitude à être utilisé en Classe I, Division 2.
27. ATEX, UL 26 ATEX 3513 Rév. 0 :
    EN IEC 60079-0:2018
    EN IEC 60079-0:2018/A11:2024
    EN 60079-7:2015
    EN IEC 60079-7:2015/A1:2018
28. IECEx, UL 26.0012 Édition 0 :
    IEC 60079-0, Édition 7.0, publiée en 2017-12, + Corr. 1:2020-01
    IEC 60079-7, Édition 5.1 (2017-08)
    CENELEC EN IEC 60079-0, publiée en 2018-07 / AC:2020-02 / A11:2024-01
    EN 60079-7:2015/A1:2018
    Ⓔx II 3 G Ex ec IIC T4 Gc
29. Si le client installe l'appareil, veuillez contacter ASRock Industrial Computer Corp. pour obtenir une assistance supplémentaire.

Replaceable batteries

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

BURN HAZARD

Hot surface! Do not touch! Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching.

DANGER DE BRÛLURE

Surface chaude! Ne pas toucher! Le contact avec cette surface peut provoquer des blessures. Pour réduire les risques, laissez la surface refroidir avant de la toucher.

CAUTION

1. This equipment contains a battery-powered real-time clock circuit. Risk of explosion if the battery is replaced with an incorrect type. Use only the same or equivalent battery as recommended by the manufacturer. Dispose of used batteries according to the provided instructions.
2. The terminal block supports V+ and V– wiring using 14–24 AWG copper conductors. Maximum torque: 0.19 Nm. Components must withstand temperatures of at least 105 °C. Installation must be performed by qualified personnel only.
3. Clean the label regularly with a dry cloth. Do not use wet or solvent-based materials.

ATTENTION

1. Cet équipement contient un circuit d'horloge temps réel alimenté par une pile. Risque d'explosion si la pile est remplacée par un type incorrect. Utilisez uniquement une pile du même type ou d'un type équivalent recommandé par le fabricant. Éliminez les piles usagées conformément aux instructions du fabricant.
2. Le bornier prend en charge le câblage V+ et V– avec des conducteurs en cuivre de calibre 14 à 24 AWG. Couple de serrage maximal : 0,19 Nm. Les composants doivent résister à des températures d'au moins 105 °C. L'installation doit être effectuée uniquement par du personnel qualifié.
3. Nettoyez régulièrement l'étiquette avec un chiffon sec. N'utilisez pas de matériaux humides ni de solvants.

The terms HDMI® and HDMI High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

Contact Information

If you need to contact ASRock Industrial or want to know more about ASRock Industrial, you're welcome to visit ASRock Industrial's website at www.asrockind.com; or you may contact your dealer for further information.

ASRock Industrial Incorporation
email: Info_ipc@asrockind.com

Contents

Chapter 1 Introduction

Because the hardware specifications might be updated, the content of this documentation will be subject to change without notice.

1.1 Package Contents

iEP-5010G-DCN

- 1 x iEP-5010G-DCN
- 3 x Screws for M.2 Module
- 1 x Phoenix plug connector
- 1 x DIN rail (optional)
- 1 x System QIG

If any items are missing or appear damaged, contact your authorized dealer.

1.2 Order Information

Model Name	PN	Description
iEP-5010G-DCN	90PXGGC0-00210000	w/ 16Gx2/ 128G

1.3 Optional Items

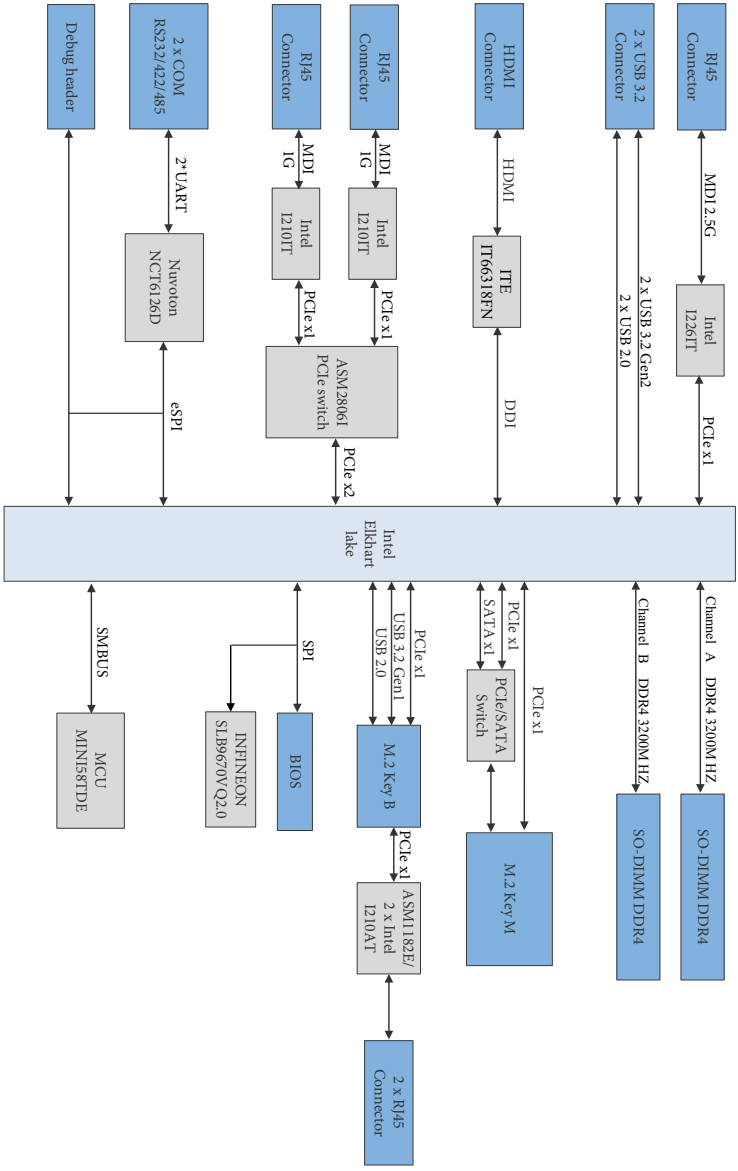
Model Name	PN	Description
Wall Mount Kits	13G020760000AI	Attach the wall mounting brackets
Din Rail Kits	13G020761000AI	Attach the din-rail brackets and can place to the din rail.
Adapter 65W	04G266000002AI	ADAPTER 65W 19V W/O CONN (PHX)

1.4 Product Specifications

Processor	CPU	Intel® Atom® X6425RE Quad-Core SoC
	Frequency	1.90 GHz
	TDP	12W
	BIOS	AMI EFI 256 Mbit
Memory	Technology	DDR4 3200 MHz (Support In-Band ECC)
	Max Capacity	32GB
	Socket	Dual 260-pin SO-DIMM
Graphics	Chipset	Intel® UHD Graphics for 10th Gen Intel® Processors
	HDMI	Up to 4096 x 2160 @ 60 Hz
Ethernet	LAN1	Intel I226-IT, 10/100/1000/2500 Mbps, RJ45, 8P8C
	LAN2	Intel I210-IT, 10/100/1000Mbps, RJ45, 8P8C
	LAN3	Intel I210-IT, 10/100/1000Mbps, RJ45, 8P8C
	LAN4	Intel I210-AT, 10/100/1000Mbps, RJ45, 8P8C
	LAN5	Intel I210-AT, 10/100/1000Mbps, RJ45, 8P8C
Storage	M.2	1 x M.2 2280 Key M (PCIe Gen3 / SATA3 mode)
I/O Interface	Serial Port	2 x RS-232/422/485 (9-pin D-sub connector)
	USB	2 x USB 3.2
	Function	1 x Clear CMOS button 1 x Power on Button with LED
Security	Watch Dog	255-level timer interval, set up through software
	TPM	TPM 2.0
Power Requirement	DC Input	1 x pluggable 3-pin Phoenix type for 6 to 36V DC input
Environment	Operating Temp.	-40°C ~ 70°C (-40°F~158°F), w/ airflow 0.5~0.8m/s
	Storage Temp.	-40°C ~ 85°C (-40°F~185°F)
	Humidity	~95% @ 40°C (non-condensing)
	Shock	Operating with SSD: 100 G, half sine 11 ms duration
	Altitude	+3000m
	Vibration	Operating with SSD: 5 Grms, 5-500 Hz, 3 axes
	ESD	Contact +/-6 KV, Air +/-15 KV
	EMC	CE (EN 61000-6-4, EN 61000-6-2) FCC Class A
	Safety	UL/cUL 610101-1, UL/cUL 61010-2-201 CB IEC 610101-1, IEC 61010-2-201 IECEx UL C1D2 ATEX Zone 2
Mechanical	Mounting	Din-Rail, Wall Mount (Optional)
	Dimensions	58mm (W) x 125mm (D) x 157mm (H)
	Net Weight	1.3 KG
Support	OS	Windows 10, Ubuntu22.04 LTS
	Real-Time Enablement	TSN, TCC support under Linux

1.5 Block Diagram

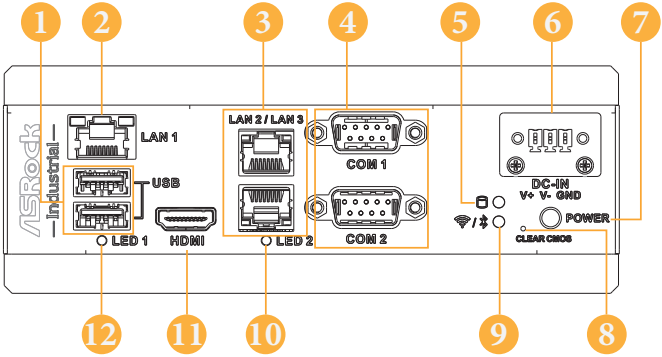
iEP-5010G-DCN



Chapter 2 Product Overview

This chapter provides diagrams showing the location of important components of the iEP-5010G-DCN.

2.1 System Front Panel



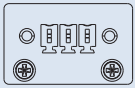
No.	Description
1	**USB 3.2 Gen2 ports:** The USB 3.2 ports provide a transfer rate up to 10 Gbit/s.
2	**LAN port**[1]: The RJ45 8P8C LAN port supports a standard Ethernet cable for 10/100/1000/2500 Mbps connection to the local network, is capable of bridging, and can perform auto-negotiation. *However, these features require an operating system to be activated.
3	**LAN ports**[2]**:** The RJ45 8P8C LAN port supports a standard Ethernet cable for 10/100/1000 Mbps connection to the local network, is capable of bridging, and can perform auto-negotiation. *However, these features require an operating system to be activated.
4	**Serial (COM) Ports:** The 9-pin RS232/422/485 serial connector allows you to connect devices that have serial ports. * This motherboard supports RS232/422/485 on COM1, 2 ports. Please refer to table below for the pin definition. In addition, COM1, 2 ports (RS232/422/485) can be adjusted in BIOS setup utility > Advanced Screen > Super IO Configuration. You may refer to our user manual for details.

COM1, 2 Ports Pin Definition

Pin	RS232	RS422	RS485
1	DCD, Data Carrier Detect	TX-	RTX-
2	RXD, Receive Data	TX+	RTX+
3	TXD, Transmit Data	RX+	NA
4	DTR, Data Terminal Ready	RX-	NA
5	GND	GND	GND
6	DSR, Data Set Ready	NA	NA
7	RTS, Request To Send	NA	NA
8	CTS, Clear To Send	NA	NA
9	NA	NA	NA

5	**SATA/NVMe Storage LED[3]:** Storage LED indicator behaviors vary depending on the storage module you use.
6	**DC-IN Connector:** The V+ and V- pins provide DC power input and the chassis ground pin allows connection of the chassis to ground for better EMC compatibility. The DC power input for the iEP-5010G-DCN supports a voltage input range from 6V to 36V DC.
7	**Power Button:** The power button allows you to turn the iEP-5010G-DCN on or off. You can use the power button to put your iEP-5010G-DCN into sleep mode or press it for four seconds to shut down you system.
8	**Clear CMOS:** Use this button to manually reset the system. Press and hold the reset switch for a few seconds to reboot the system without shutting it off.
9	**Wi-Fi/BT LED[4] :** Wi-Fi/Bluetooth LED indicator behaviors vary depending on the 4G LTE/5G module you use.
10、12	**Diagnostic LEDs[5]**: These LEDs indicate the debug status of the motherboard. Please refer to the table below to get more information about the Diagnostic LED.
11	**HDMI:** The HDMI port supports a Full-HD device to allow viewing on a larger external display.

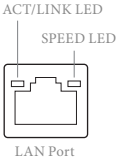
Pin	Signal name
1	V+
2	V-
3	GND



English

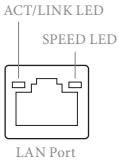
Notes:

[1] *There are two LEDs on the LAN1 port. Please refer to the table below for the LAN1 port LED indications.*



Activity / Link LED		Speed LED	
Status	**Description**	**Status**	**Description**
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100/1000 Mbps connection
On	Link	Green	2.5Gbps connection

[2] *There are two LEDs on the LAN2, 3 ports. Please refer to the table below for the LAN2, 3 ports LED indications.*



Activity / Link LED		Speed LED	
Status	**Description**	**Status**	**Description**
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

[3] *SATA/NVMe Storage LED*

Storage LED	
Status	**Description**
Solid Green	HDD active
Blinking Green	HDD accessing or reading
Off	No HDD

[4] *Wi-Fi/BT LED*

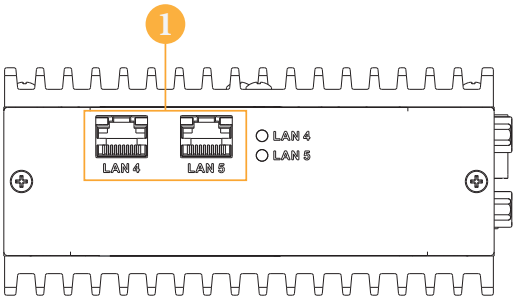
Wi-Fi /Bluetooth LED	
Status	**Description**
Solid Green	LED indicator behaviors vary depending on the 4G LTE / 5G module you use.

English

[5] *Please refer to the table below for the Diagnostic LED indications.*

Item	LED1	LED2	BIOS Status Code	Description
CPU	White	White	0x15	PEI_CAR_NB_INIT
	White	Blue	0x32	PEI_CPU_INIT
	White	Yellow	0x68	DXE_NB_HB_INIT
	White	Red	0x19	PEI_CAR_SB_INIT
DRAM	Blue	White	0x4F	PEI_DXE_IPL_STARTED
	Blue	Blue	0x51	PEI_MEMORY_SPD_FAIL
	Blue	Yellow	0x53	PEI_MEMORY_NOT_DETECT
	Blue	Red	0x54	PEI_MEMORY_ERROR
	Blue	Green	0x55	PEI_MEMORY_NOT_ INSTALLED
I/O PORT	Yellow	White	0x70	DXE_SB_INIT
	Yellow	Blue	0x97	DXE_CON_OUT_CONNECT
	Yellow	Yellow	0x99	DXE_SIO_INIT
	Yellow	Red	0xD6	DXE_NO_CON_OUT
BOOT	Green	White	0x91	DXE_BDS_CONNECT_ DRIVERS
	Green	Blue	0x94	DXE_PCI_BUS_ENUM
	Green	Yellow	0x9A	DXE_USB_BEGIN
	Green	Red	0xDA	DXE_BOOT_OPTION_FAILED
	Green	Green	0xA2	DXE_IDE_DETECT
	Red	Red	0xAB	ENTER BIOS SETUP
	None	None	0xAD	BOOT OS OR SHELL

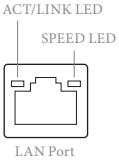
2.2 System Top Panel



No.	Description
1	**LAN ports**[1]**:** The RJ45 8P8C LAN port supports a standard Ethernet cable for 10/100/1000 Mbps connection to the local network, is capable of bridging, and can perform auto-negotiation. *However, these features require an operating system to be activated..

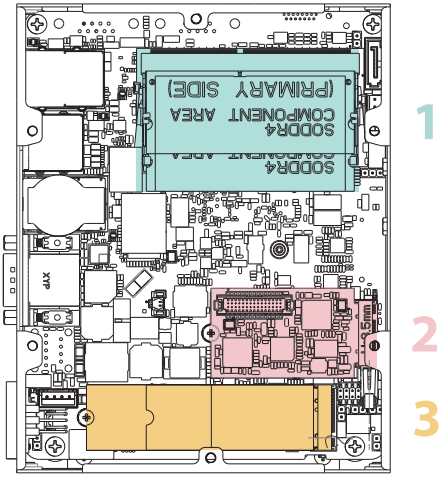
Note:

[1] *There are two LEDs on the LAN4, 5 ports. Please refer to the table below for the LAN4, 5 ports LED indications.*



Activity / Link LED		Speed LED	
Status	**Description**	**Status**	**Description**
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

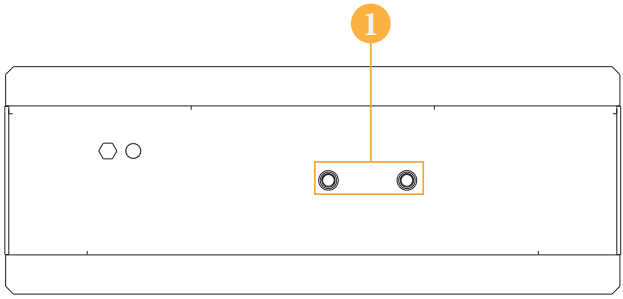
2.3 Inside View



No.	Description
1	**Memory:** Dual Small Outline Dual Inline Memory module slots designed for DDR4 memory modules.
2	**M.2 Slot (B Key):** The M.2 slot allows you to install Expansion LAN ports.
3	**M.2 Slot (M Key):** The M.2 slot allows you to install 2280 M.2 devices.

SO-DIMM memory is not included with this system.

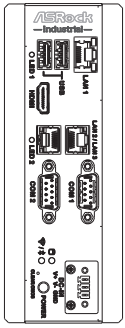
2.4 System Rear Panel

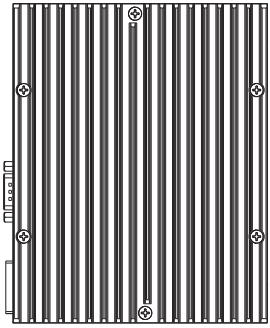


No.	Description
1	**Mounting Holes:** The holes support Wall Mount and DIN Rail brackets for system in vertical position.

2.5 Position

The iEP-5010G-DCN should be placed in vertical position only.





Chapter 3 Hardware Installation

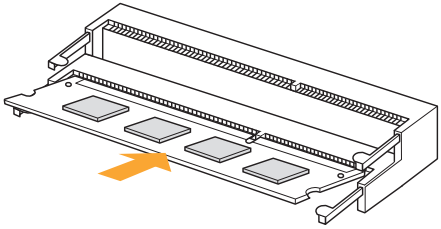
This chapter helps you install or remove important components.

3.1 How to Install the Memory Modules and the Heatsinks

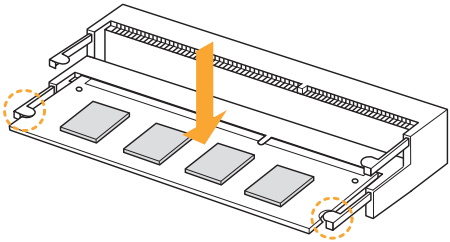
The iEP-5010G-DCN requires DDR4 SO-DIMM (1.2V). For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 SO-DIMM pairs.

The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

1. Carefully insert the SO-DIMM memory modules into the slot at a 30-degree angle.



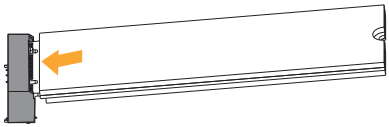
2. Push down until the modules snap into place.



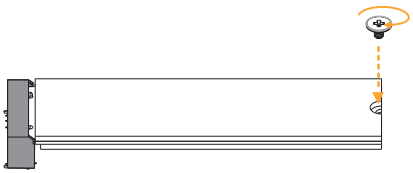
3.2 How to Install the M.2 SSD with the Heasink (M.2 Key M Socket (2280))

1. Locate the M.2 slot on the motherboard.

2. Carefully insert the M.2 SSD (Type 2280) into the slot at a 30-degree angle.

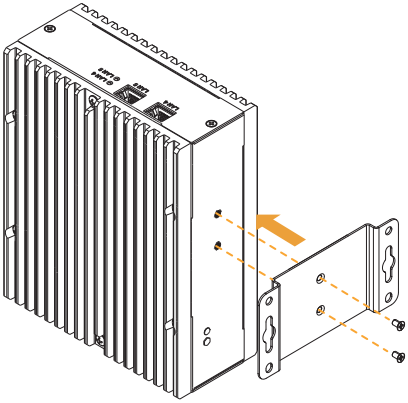


3. Tighten the screw to secure the M.2 SSD (Type 2280) to the motherboard.

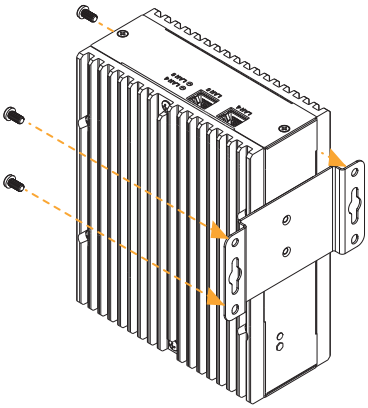


3.3 How to Install the Wall Mounting Bracket (Optional)

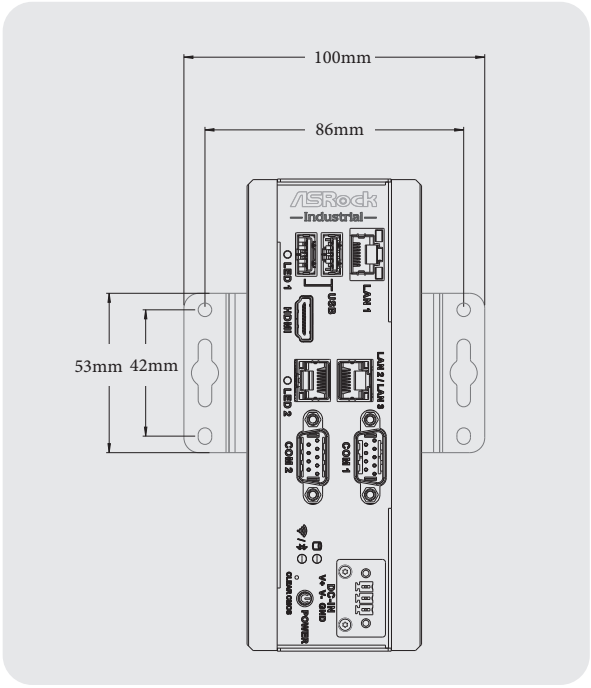
1. Attach the wall mounting brackets to the iEP-5010G-DCN and secure it with screws.



2. Then you can attach the iEP-5010G-DCN to the wall with screws.



Dimension of the iEP-5010G-DCN with Wall Mounting Bracket Installed

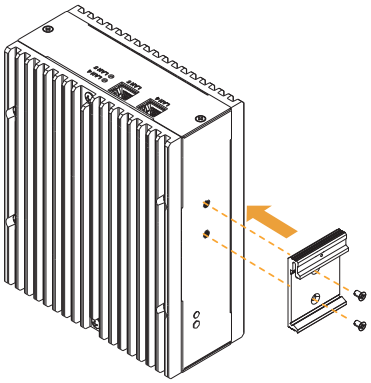


Wall Mounting Bracket is not provided by default. Please purchase it separately if needed.

English

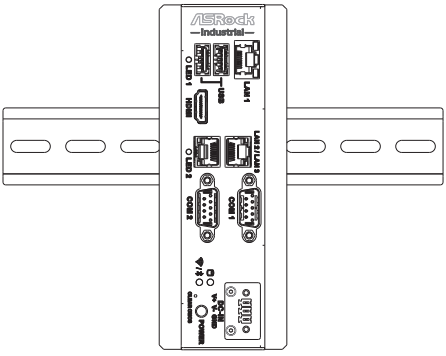
3.4 How to Install the Din Rail Mounting Bracket (Optional)

1. Attach the Din Rail Bracket to the iEP-5010G-DCN and secure it with screws.



2. Then you can place the iEP-5010G-DCN to the Din Rail.

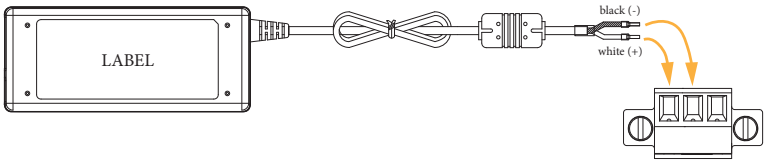
   Admissible DIN rail : TS35/7.5 or TS35/15



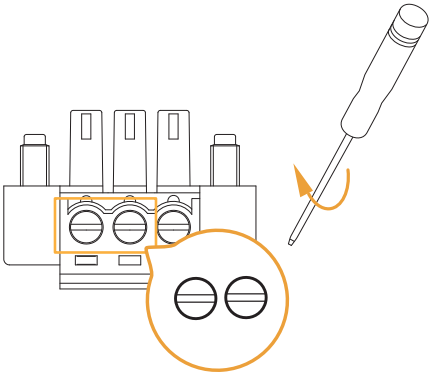
Din Rail Bracket is not provided by default. Please purchase it separately if needed.

3.5 How to Install Phoenix Connector and the Adapter (Optional)

1. Insert white (+) cable of the adapter into the left port of the phoenix connector, and insert the black (-) cable into the middle port. Ensure the cables are inserted to the end.

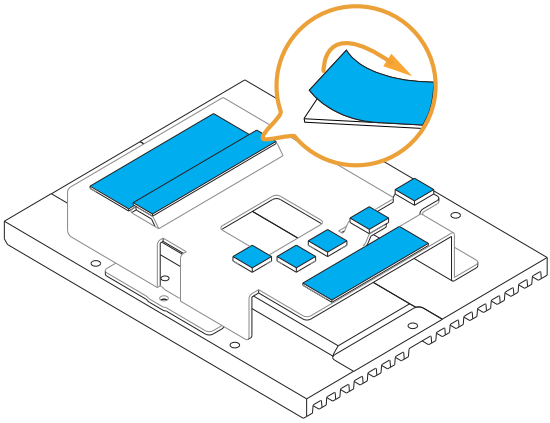


2. Tighten the left two screws from the top of the phoenix connector with a flathead screwdriver. Ensure the cables are inserted to the end and cannot be unplugged.



3.6 How to Remove the Membranes

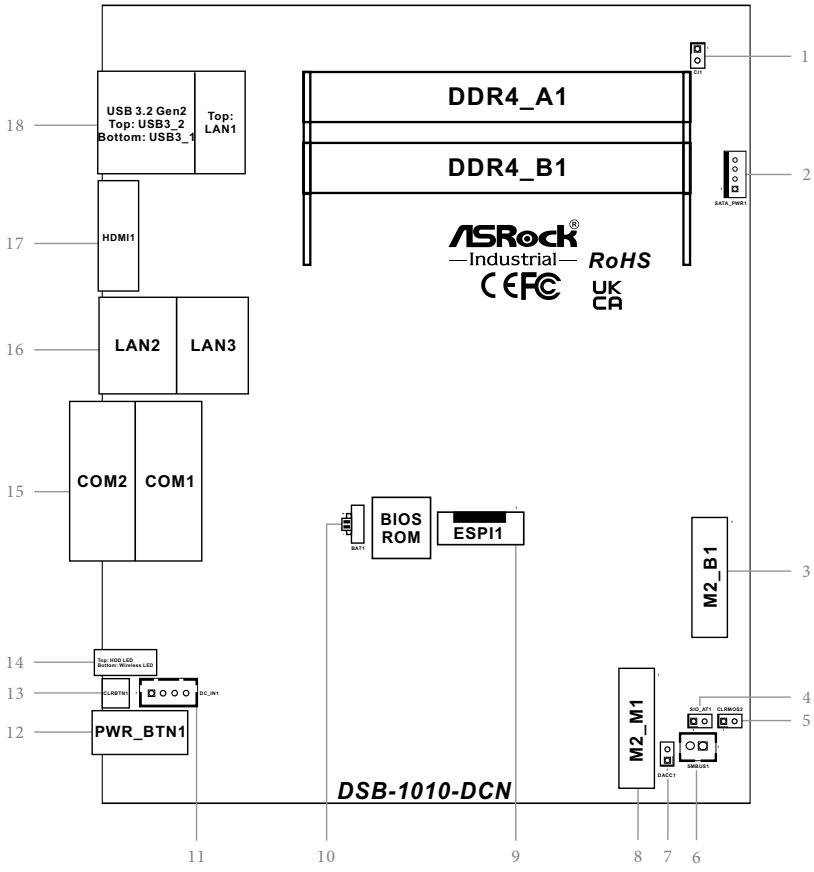
Please note to remove the membranes from the heatsinks before reinstall the bottom cover.



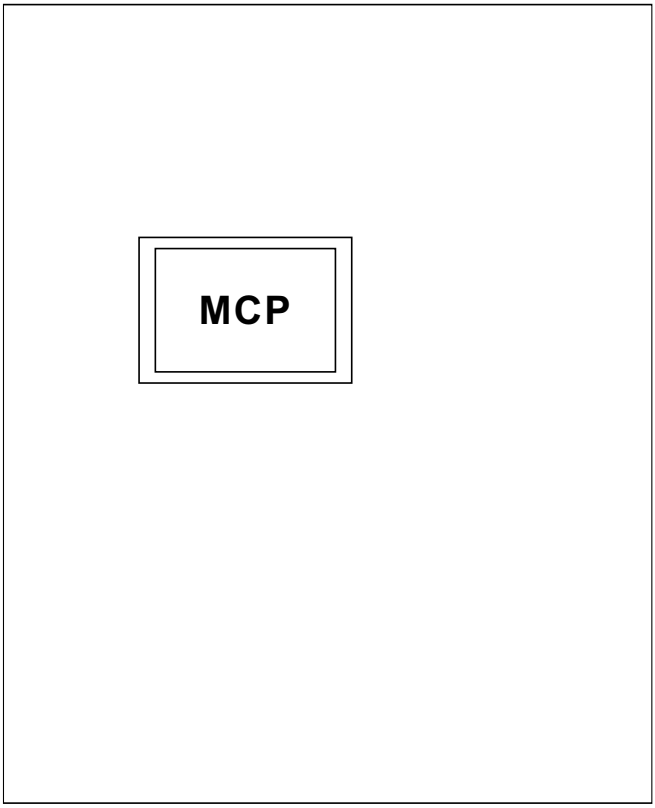
Chapter 4 Motherboard

4.1 Motherboard Layout

Top Side :



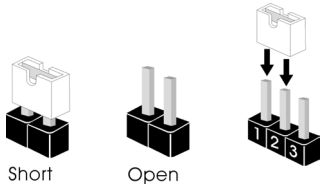
Rear Side :



1 : Chassis Intrusion Headers (CI1)
2 : SATA Power Output Connector (SATA_PWR1)
3 : M.2 Key-B Socket (M2_B1)
4 : ATX/AT Mode Jumper (SIO_AT1)
5 : Clear CMOS Header (CLRMOS2)
6 : SMBUS Connector (SMBUS1)
7 : DACC Jumper (DACC1)
8 : M.2 Key-M Socket (M2_M1)
9 : ESPI Connector (ESPI1)
10 : Battery Connector (BAT1)
11 : Power Connector (DC_IN1) (Input 6V-36V)
12 : Power Button (PWR_BTN1)
13 : Clear CMOS Button (CLRBTN1)
14 : Top : HDD LED
Bottom : Wireless LED
15 : COM Ports (RS232/422/485)*
Top : COM1
Bottom : COM2
16 : RJ45 LAN Ports
Top : LAN3
Bottom : LAN2
17 : HDMI Port (HDMI1)
18 : Top : RJ45 LAN Port (LAN1)
Middle: USB 3.2 Gen2 Port (USB3_2)
Bottom : USB 3.2 Gen2 Port (USB3_1)

4.2 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "Short." If no jumper cap is placed on pins, the jumper is "Open." The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when a jumper cap is placed on these 2 pins.



Chassis Intrusion Headers (CI1)
(2-pin CI1)
(see p. 19, No. 1)

Setting	Description
Open	Normal (Default)
Short	Active Case Open

This motherboard supports CASE OPEN detection feature that detects if the chassis cover has been removed. This feature requires a chassis with chassis intrusion detection design.

ATX/AT Mode Jumper
(2-pin SIO_AT1)
(see p. 19, No. 4)

Setting	Description
Open	ATX Mode (Default)
Short	AT Mode

The header provides auto boot function when AC power on. If you need the function, short SIO_AT1 pin 1 and pin 2.

Clear CMOS Header
(2-pin CLRMOS2)
(see p. 19, No. 5)

Setting	Description
Open	Normal (Default)
Short	Auto Clear CMOS (Power Off)

Note:
CLRMOS2 allows you to clear the data in CMOS automatically when AC power on. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, and then use a jumper cap to short the pins on CLRMOS2.

DACC Jumper

(2-pin DACC1)

(see p. 19, No. 7)

Setting	Description
Open	Disabled Auto Clear CMOS
Short	Enabled Auto Clear CMOS (Default)

Auto clear CMOS when system boot improperly.

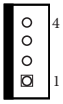
4.3 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard!

SATA Power Output Connector

(4-pin SATA_PWR1)

(see p. 19, No. 2)



Pin	Signal Name
1	+5V
2	GND
3	GND
4	+12V

SMBUS Connector

(2-pin SMBUS1)

(see p. 19, No. 6)

Pin	Signal Name
1	SMB_CLK_MAIN
2	SMB_DATA_MAIN

ESPI Connector

(20-pin ESPI1)

(see p. 19, No. 9)

Pin	Signal Name
1	GND
2	ESPI_CLK
3	GND
4	ESPI_CS#
5	ESPI_RESET#
6	GND
7	+3V
8	GND
9	SMB_CLK
10	SMB_DATA
11	ESPI_IO0
12	ESPI_IO1
13	ESPI_IO2
14	ESPI_IO3
15	GND
16	+3VSB
17	Internal use
18	Internal use
19	ESPI_ALERT#
20	GND

The eSPI connector serves as an unidirectional output for post code information and does not support any input functionality.

Battery Connector

(BAT1)

(see p. 19, No. 10)

Power Connector (Input 6V-36V)

(4-pin DC_IN1)

(see p. 19, No. 11)

Pin	Signal Name
1	GND
2	DC Input
3	DC Input
4	GND

4.4 Expansion Slots (M.2 Sockets)

There are two M.2 sockets on the motherboard.

M.2 Key-B Socket (M2_B1)

(see p. 19, No. 3)

M.2 Key B Socket (3042/3052) for Expansion LAN ports (LAN3 & LAN4)

Pin	Signal	Signal	Pin
1	NA	+3.3V	2
3	GND	+3.3V	4
5	GND	FULL_Card_ Power_off	6
7	USB_D+	W_DISABLE	8
9	USB_D-	WWAN_LED#	10
11	GND		
		NA	20
21	NA	NA	22
23	NA	NA	24
25	NA	NA	26
27	GND	NA	28
29	USB3_RX-	UIM_RESET	30
31	USB3_RX+	UIM_CLK	32
33	GND	UIM_DATA	34
35	USB3_TX-	UIM_PWR	36
37	USB3_TX+	NA	38
39	GND	NA	40
41	PERn0	NA	42
43	PERp0	NA	44
45	GND	NA	46
47	PETn0	NA	48
49	PETp0	PERST#	50
51	GND	CLKREQ#	52
53	PEFCLKn	NA	54
55	PEFCLKp	NA	56
57	GND	NA	58
59	NA	NA	60
61	NA	NA	62
63	NA	NA	64
65	NA	NA	66
67	NA	NA	68
69	NA	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	NA		

M.2 Key-M Socket (M2_M1):

(see p. 19, No. 8)

M.2 Key M Socket (2280) supports NVMe with PCIe Gen3x2/SATA3 for mode

Pin	Signal	Signal	Pin
1	GND	+3.3V	2
3	GND	+3.3V	4
5	NA	NA	6
7	NA	NA	8
9	GND	SATA_LED	10
11	NA	+3.3V	12
13	NA	+3.3V	14
15	GND	+3.3V	16
17	NA	+3.3V	18
19	NA	NA	20
21	GND	NA	22
23	NA	NA	24
25	NA	NA	26
27	GND	NA	28
29	PERn1	NA	30
31	PERp1	NA	32
33	GND	NA	34
35	PETn1	NA	36
37	PETp1	DEVSLP	38
39	GND	SMB_CLK	40
41	PERn0/ SATA-B+	SMB_DATA	42
43	PERp0/ SATA-B-	NA	44
45	GND	NA	46
47	PETn0/ SATA-A-	NA	48
49	PETP0/ SATA-A+	PERST#	50
51	GND	CLKREQ#	52
53	PEFCLKn	NA	54
55	PEFCLKp	NA	56
57	GND	NA	58
67	NA	NA	68
69	PEDET	+3.3V	70
71	GND	+3.3V	72
73	GND	+3.3V	74
75	GND		

Chapter 5 UEFI Setup Utility

5.1 Introduction

ASRock Industrial UEFI (Unified Extensible Firmware Interface) is a BIOS utility which offers tweak-friendly options in an advanced viewing interface. The UEFI system works with a USB mouse and offers users a faster, sleeker experience.

This BIOS utility can perform the Power-On Self-Test (POST) during system startup, record hardware parameters of the system, load the operating system, and so on. The battery on the motherboard supplies power to the CMOS when the system is turned off, ensuring that the values configured in the UEFI utility are retained. Importantly, the battery will not affect the preservation of storage data.

Please note that inadequate BIOS settings may cause system instability, mulfunction or boot failure. We strongly recommend that you do not alter the UEFI default configurations or change the settings only with the assistance of a trained service person.

If the system becomes unstable or fails to boot after you change the setting, try to clear the CMOS values and reset the board to default values. See your motherboard manual for instructions.

5.1.1 Entering BIOS Setup

You may run the UEFI SETUP UTILITY by pressing <F2> or <Delete> right after you power on the computer; otherwise, the Power-On-Self-Test (POST) will continue with its test routines. If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

This setup guide explains how to use the UEFI SETUP UTILITY to configure all the supported system. The screenshots in this manual are for reference only. UEFI Settings and options may vary owing to different BIOS release versions or CPU installed. Please refer to the actual BIOS version of the motherboard you purchased for detailed screens, settings and options.

5.1.2 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	For setting system time/date information
Advanced	For advanced system configurations
H/W Monitor	Displays current hardware status
Security	For security settings
Boot	For configuring boot settings and boot priority
Exit	Exit the current screen or the UEFI Setup Utility

Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions for reference purpose only, and may vary from the latest BIOS and do not exactly match what you see on your screen.

5.1.3 Navigation Keys

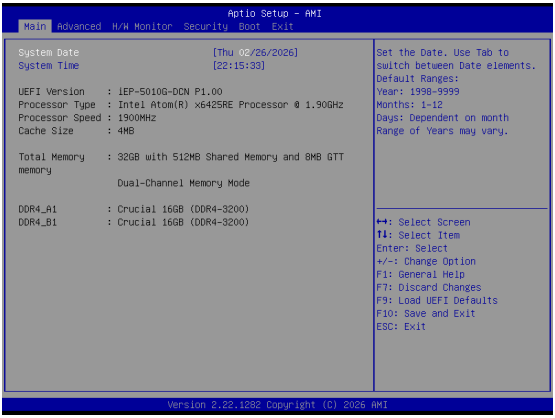
Use < ← > key or < → > key to choose among the selections on the menu bar, and use < ↑ > key or < ↓ > key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

Please check the following table for the descriptions of each navigation key.

Navigation Key(s)	Description
+ / -	To change option for the selected items
<Tab>	Switch to next function
<PGUP>	Go to the previous page
<PGDN>	Go to the next page
<HOME>	Go to the top of the screen
<END>	Go to the bottom of the screen
<F1>	To display the General Help Screen
<F7>	Discard changes and exit the SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

5.2 Main Screen

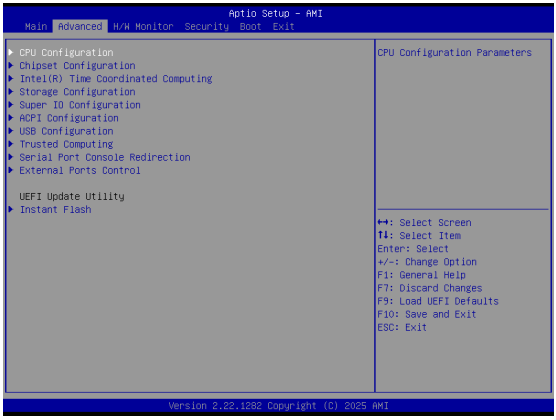
When you enter the UEFI Setup Utility, the Main screen will appear and display the system overview.



Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen. Options may also vary depending on the features of your motherboard.

5.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Intel(R) Time Coordinated Computing, Storage Configuration, Super IO Configuration, ACPI Configuration, USB Configuration, Trusted Computing, Serial Port Console Redirection, and External Ports Control.

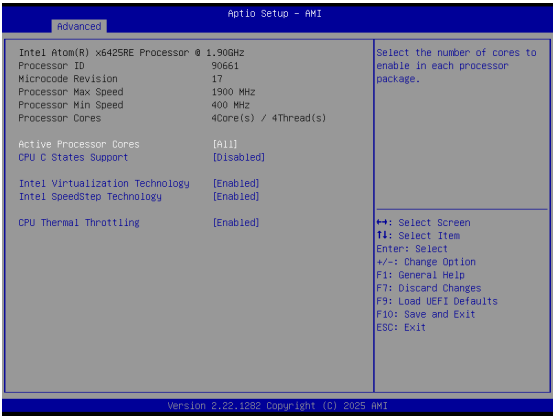


Setting wrong values in this section may cause the system to malfunction.

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, and then you can update your UEFI in only a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

5.3.1 CPU Configuration



Active Processor Cores

This allows you to select the number of cores to enable in each processor package.

CPU C States Support

This allows you to enable CPU C States Support for power saving. It is recommended to keep C3, C6 and C7 all enabled for better power saving.

Configuration options: [Enabled] [Disabled]

Intel Virtualization Technology

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel Virtualization Technology.

Configuration options: [Enabled] [Disabled]

Intel SpeedStep Technology

Intel SpeedStep technology allows processors to switch between multiple frequencies and voltage points for better power saving and heat dissipation. CPU turbo ratio can be fixed when Intel SpeedStep Technology is set to [Disabled].

If you install Windows® 10 and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel SpeedStep technology.

Configuration options: [Enabled] [Disabled].

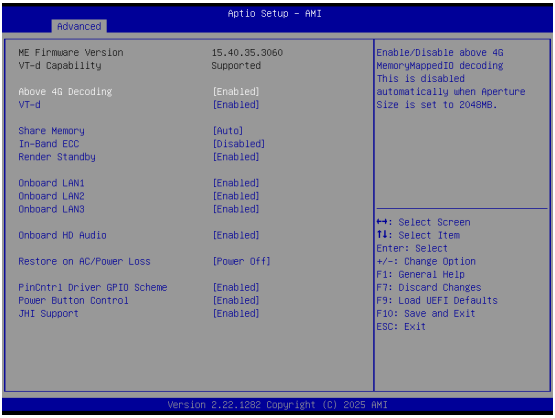
Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issues with some power supplies. Please set this item to [Disabled] if above issues occur.

CPU Thermal Throttling

CPU Thermal Throttling allows you to enable CPU internal thermal control mechanisms to keep the CPU from overheating.

Configuration options: [Enabled] [Disabled]

5.3.2 Chipset Configuration



Above 4G Decoding

The option allows you to enable or disable above 4G Memory Mapped IO decoding. This is disabled automatically when Aperture Size is set to 2048MB.

Configuration options: [Enabled] [Disabled]

VT-d

Intel® Virtualization Technology for Directed I/O helps your virtual machine monitor better utilize hardware by improving application compatibility and reliability, and providing additional levels of manageability, security, isolation, and I/O performance.

Configuration options: [Enabled] [Disabled]

Share Memory

Share memory allows you to configure the size of memory that is allocated to the integrated graphics processor when the system boots up.

Configuration options: [Auto] [32M] [64M] [128M] [256M] [512M]
Options vary depending on the memory you use on your motherboard.

In-Band ECC

This allows you to enable or disable In-Band ECC.

Configuration options: [Enabled] [Disabled]

Render Standby

Power down the render unit when the GPU is idle for lower power consumption.

Onboard LAN1

This allows you to enable or disable the Onboard LAN1 feature.

Onboard LAN2

This allows you to enable or disable the Onboard LAN2 feature.

Onboard LAN3

This allows you to enable or disable the Onboard LAN3 feature.

Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Restore on AC/Power Loss

Select the power state after a power failure. If [Power Off] is selected, the power will remain off when the power recovers. If [Power On] is selected, the system will start to boot up when the power recovers.

PinCntrl Driver GPIO Scheme

The item enables or disables PinCntrl Driver GPIO Scheme.

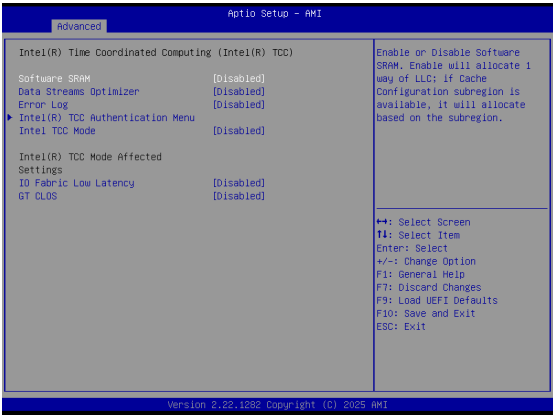
Power Button Control

The item enables or disables Power Button Function.

JHI Support

The item enables or disables Intel(R) DAL Host Interface Service (JHI).

5.3.3 Intel(R) Time Coordinated Computing



Software SRAM

The item enables or disables Software SRAM. Enable will allocate 1 way of LLC; if Cache Configuration subregion is available, it will allocate based on the subregion.

Data Streams Optimizer

The item enables or disables Data Streams Optimizer (DSO). Enable will utilize DSO Subregion to tune system. DSO settings supercede Intel(R) TCC Mode settings that overlap between the two.

Error Log

Enable or Disable Error Log. Enable will record errors related to Intel(R) TCC and save them to memory.

Intel TCC Mode

The item enables or disables Intel(R) TCC Mode. When enabled, this will modify system settings to improve real-time performance. The full list of settings and their current state are displayed below when Intel(R) TCC mode is enabled.

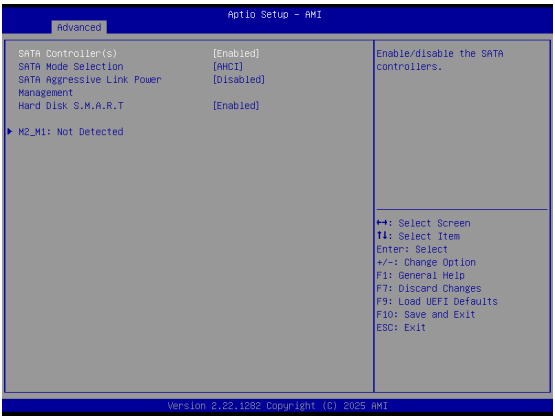
IO Fabric Low Latency

The item enables or disables IO Fabric Low Latency. This will turn off some power management in the PCH IO fabrics. This option provides the most aggressive IO Fabric performance setting. S3 state is NOT supported.

GT CLOS

The item enables or disables Graphics Technology(GT) Class of Service. Enable will reduce Gfx LLC allocation to minimize impact of Gfx workload on LLC.

5.3.4 Storage Configuration



SATA Controller(s)

The option allows you to enable or disable the SATA controllers.

Configuration options: [Enabled] [Disabled]

SATA Mode Selection

AHCI supports new features that improve performance.

Configuration option: [AHCI]

AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

SATA Aggressive Link Power Management

SATA Aggressive Link Power Management allows SATA devices to enter a low power state during periods of inactivity to save power. It is supported only by AHCI mode.

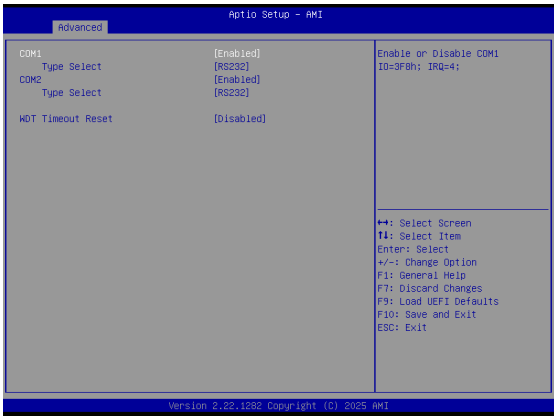
Configuration options: [Enabled] [Disabled]

Hard Disk S.M.A.R.T.

S.M.A.R.T stands for Self-Monitoring, Analysis, and Reporting Technology. It is a monitoring system for computer hard disk drives to detect and report on various indicators of reliability.

Configuration options: [Enabled] [Disabled]

5.3.5 Super IO Configuration



COM1 Configuration

Use this to set parameters of COM1.

Type Select

Use this to select COM1 port type: [RS232], [RS422] or [RS485].

COM2 Configuration

Use this to set parameters of COM2.

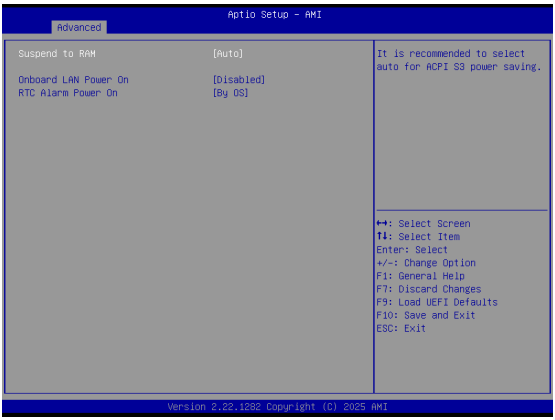
Type Select

Use this to select COM2 port type: [RS232], [RS422] or [RS485].

WDT Timeout Reset

Use this to set the Watch Dog Timer.

5.3.6 ACPI Configuration



Suspend to RAM

Suspend to RAM allows you to select [Disabled] for ACPI suspend type S1. It is recommended to select [Auto] for ACPI S3 power saving.

Configuration options: [Auto] [Disabled]

Onboard LAN Power On

Use this item to enable or disable onboard LAN to turn on the system from the power-soft-off mode.

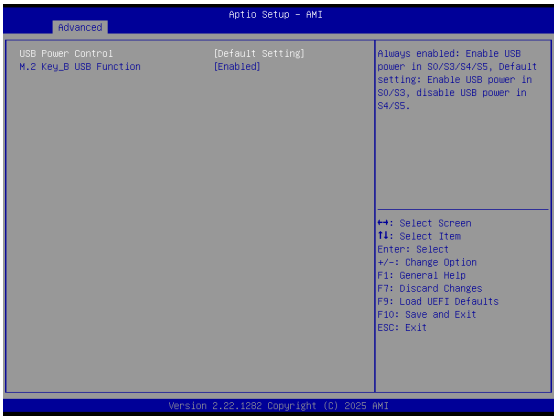
RTC Alarm Power On

RTC Alarm Power On allows the system to be waked up by the real time clock alarm. Set it to By OS to let it be handled by your operating system.

Configuration options: [Enabled] [Disabled] [By OS]

*The system is capable of gathering a Sequence of Events with 1 ms precision and ±0.5 ms accuracy if the master clock fails for at least 10 seconds; additionally, the clock will drift less than 0.5 milliseconds for at least 10 seconds upon losing MTS time synchronization communication, while maintaining a ±0.5 ms dead-band.

5.3.7 USB Configuration



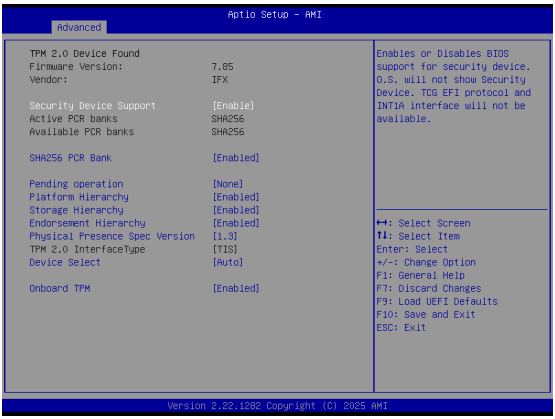
USB Power Control

Use this option to control USB power.

M.2 Key_B Function

The item enables or disables M.2 Key_B USB function.

5.3.8 Trusted Computing



Security Device Support

Security Device Support allows you to enable or disable BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Configuration options: [Enabled] [Disabled]

Active PCR banks

This item displays active PCR Banks.

Available PCR Banks

This item displays available PCR Banks.

SHA256 PCR Bank

SHA256 PCR Bank allows you to enable or disable SHA256 PCR Bank.

Configuration options: [Enabled] [Disabled]

Pending Operation

Pending Operation allows you to schedule an Operation for the Security Device.

NOTE: Your computer will reboot during restart in order to change State of the Device.

Configuration options: [None] [TPM Clear]

Platform Hierarchy

This item allows you to enable or disable Platform Hierarchy.

Configuration options: [Enabled] [Disabled]

Storage Hierarchy

This item allows you to enable or disable Storage Hierarchy.

Configuration options: [Enabled] [Disabled]

Endorsement Hierarchy

This item allows you to enable or disable Endorsement Hierarchy.

Configuration options: [Enabled] [Disabled]

Physical Presence Spec Version

Select this item to tell OS to support PPI spec version 1.2 or 1.3. Please note that some HCK tests might not support version 1.3.

Configuration options: [1.2] [1.3]

TPM 2.0 InterfaceType

This item allows you to view the Communication Interface to TPM 2.0 Device: CRB or TIS.

Device Select

This item allows you to select the TPM device to be supported.

[TPM 1.2] restricts support to TPM 1.2 devices.

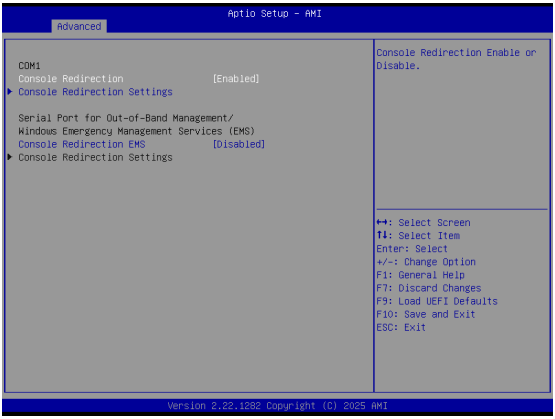
[TPM 2.0] restricts support to TPM 2.0 devices.

[Auto] supports both TPM 1.2 and TPM 2.0 devices with the default set to TPM 2.0 devices. If TPM 2.0 devices are not found, TPM 1.2 devices will be enumerated.

Onboard TPM

The option enables or disables Intel PTT in ME. Disable this option to use discrete TPM Module.

5.3.9 Serial Port Console Redirection



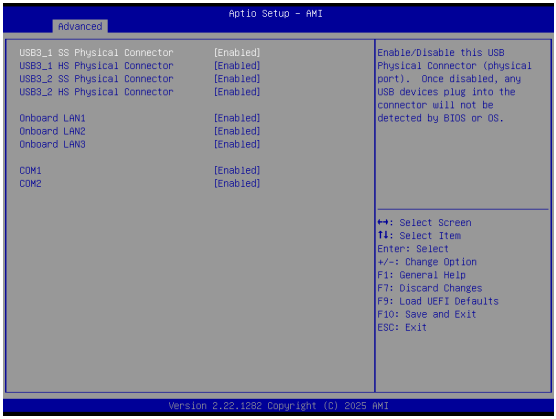
Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Console Redirection EMS

Console Redirection Enable or Disable.

5.3.10 External Ports Control



USB3_1 SS Physical Connector

Enable/Disable this USB Physical Connector (physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.

USB3_1 HS Physical Connector

Enable/Disable this USB Physical Connector (physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.

USB3_2 SS Physical Connector

Enable/Disable this USB Physical Connector (physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.

USB3_2 HS Physical Connector

Enable/Disable this USB Physical Connector (physical port). Once disabled, any USB devices plug into the connector will not be detected by BIOS or OS.

Onboard LAN1

This allows you to enable or disable the Onboard LAN1 feature.

Onboard LAN2

This allows you to enable or disable the Onboard LAN2 feature.

Onboard LAN3

This allows you to enable or disable the Onboard LAN3 feature.

COM1

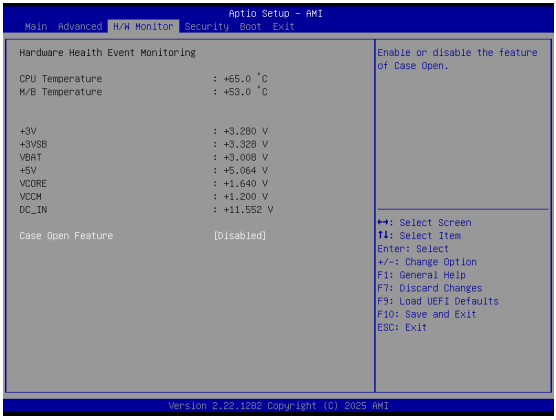
Enable or Disable COM1 IO=3F8h; IRQ=4.

COM2

Enable or Disable COM2 IO=2F8h; IRQ=3.

5.4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, and the critical voltage.



Case Open Feature

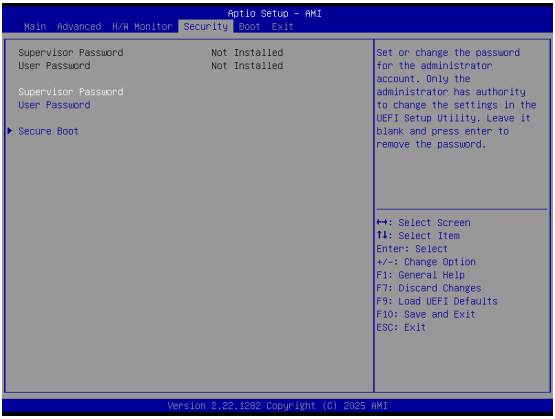
This allows you to enable or disable case open detection feature. The default is value [Disabled].

Clear Status

This option appears only when the case open has been detected. Use this option to keep or clear the record of previous chassis intrusion status.

5.5 Security Screen

In this section, you may set, change or clear the supervisor/user password for the system.



Supervisor Password

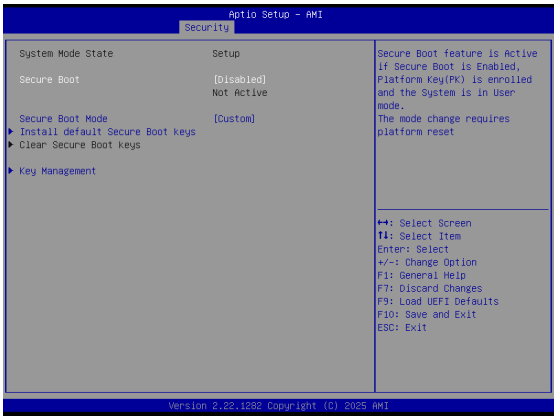
Set or change the password for the administrator account. Only the administrator has the authority to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

User Password

Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Press [Enter] to configure the Secure Boot Settings. The feature protects the system from unauthorized access and malwares during POST. Secure Boot is supported on Window 8 / Ubuntu 12.04 / Fedora 19 and later.



Secure Boot

Press [Enter] to configure the Secure Boot Settings. The feature protects the system from unauthorized access and malwares during POST.

Install Default Secure Boot Keys

Please install default secure boot keys if it's the first time you use secure boot.

Clear Secure Boot Keys

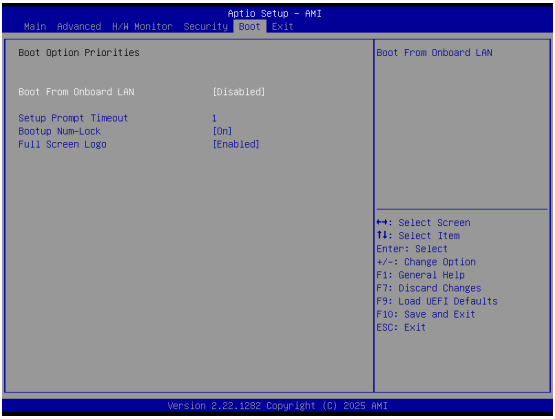
This item appears only when you load the default Secure Boot keys. Use this item to clear all default Secure Boot keys.

Key Management

Enables expert users to modify Secure Boot Policy variables without variable authentication.

5.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



Boot From Onboard LAN

The item allows the system to be woke up by the onboard LAN.

Configuration options: [Enabled] [Disabled]

Setup Prompt Timeout

The item allows you to configure the number of seconds to wait for the UEFI setup utility. 65535(0XFFFF) means indefinite waiting.

Configuration options: [1] - [65535]

Bootup Num-Lock

The item allows you to select whether Num Lock should be turned on or off when the system boots up.

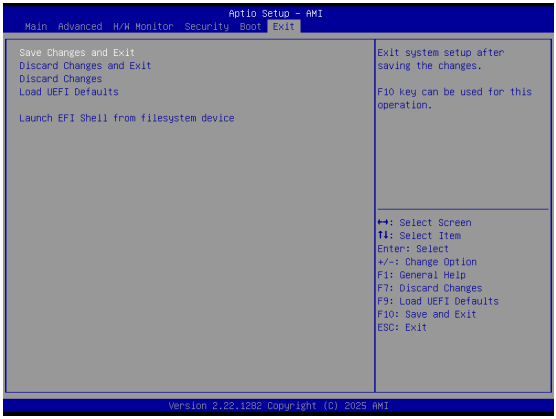
Configuration options: [On] [Off]

Full Screen Logo

[Enabled] Select this item to display the boot logo.

[Disabled] Select this item to show normal POST messages.

5.7 Exit Screen



Save Changes and Exit

When you select this option, the following message "Save configuration changes and exit setup?" will pop out. Select [Yes] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, the following message "Discard changes and exit setup?" will pop out. Select [Yes] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, the following message "Discard changes?" will pop out. Select [Yes] to discard all the changes.

Load UEFI Defaults

The item allows you to load UEFI default values for all options. The F9 key can be used for this operation.

Launch EFI Shell from filesystem device

The item allows you to copy shellx64.efi to the root directory to launch EFI Shell.