



MODEL:

DRPC-240-TGL

Embedded System with Intel® Tiger Lake-U CPU, 8 GB DDR4 SO-DIMM, M.2 Slot, PCIe x4 Slot, RS-232, RS-422/485, HDMI, DP++ and RoHS

User Manual

Revision

Date	Version	Change
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Manual Conventions



WARNING

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously.



CAUTION

Cautionary messages should be heeded to help reduce the chance of losing data or damaging the product.



NOTE

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes.



HOT SURFACE

This symbol indicates a hot surface that should not be touched without taking care.

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Chapter

1

Introduction

1.1 Overview



Figure 1-1: DRPC-240-TGL

The DRPC-240-TGL is an embedded system with Intel® Tiger Lake-U processor and 8GB DDR4 SO-DIMM memory. It is designed for harsh environment applications, and supports DIN rail mounting method.

The DRPC-240-TGL accepts a wide range of DC power input (12V ~ 28V), allowing it to be powered anywhere. It is equipped with two USB 3.2 Gen 2 (10Gb/s), two USB 2.0, four 2.5GbE, two RS-232 ports, two RS-422/485 ports, one HDMI and one DisplayPort++ to provide rich I/O options for various applications.

Furthermore, the DRPC-240-TGL also has a PCIe x4 slot that can support half-size expansion cards

DRPC-240-TGL Embedded System

1.2 Features

The DRPC-240-TGL features are listed below:

- Intel® Tiger Lake-U processor
- Two DDR4 SO-DIMM memory slot (8GB pre-installed)
- 1 x 2.5" SATA 6Gb/s HDD/SSD bay
- 2 x USB 3.2 Gen 2 (10Gb/s) port
- 2 x USB 2.0 port
- 4 x 2.5GbE LAN
- 1 x DIO
- Support M.2 A key and M.2 B key expansions
- Wide range DC power input (12V~28V)
- Cold forging heat dissipation
- PCIe x4 slot
- DIN rail mounting support
- RoHS compliant

1.3 Model Variations

Model	Description
DRPC-240-TGL-U-CCS	Fanless embedded system, Intel® Tiger Lake-U Celeron® 6305 1.8GHz (dual core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, four 2.5GbE LAN, four COM, DIO, 12~28V DC and RoHS
DRPC-240-TGL-U-i5CS	Fanless embedded system, Intel® Tiger Lake-U Core™ i5-1145G7E 1.5GHz (quad core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, four 2.5GbE LAN, four COM, DIO, 12~28V DC and RoHS
DRPC-240-TGL-U-i7CS	Fanless embedded system, Intel® Tiger Lake-U Core™ i7-1185G7E 1.8GHz (quad core, TDP 15W), 8GB DDR4 pre-installed memory, HDMI/DP++, four 2.5GbE LAN, four COM, DIO, 12~28V DC and RoHS

Table 1-1: Model Description

1.4 Technical Specifications

The DRPC-240-TGL technical specifications are listed below.

Model		DRPC-240-TGL-U-i7CS	DRPC-240-TGL-U-i5CS	DRPC-240-TGL-U-CCS
Chassis	Color	Black		
	Dimensions (WxDxH) (mm)	81 x 150 x 190	81 x 150 x 190	81 x 150 x 190
	System Fan	Fanless		
	Chassis Construction	Extruded aluminum alloy		
Motherboard	CPU	Intel® Core™ i7-1185G7E 1.8GHz (up to 4.4GHz quad-core, 15W TDP)	Intel® Core™ i5-1145G7E 1.5GHz (up to 4.1GHz, quad-core, 15W TDP)	Intel® Celeron® 6305 1.8 GHz (dual-core, 15W TDP)
	Chipset	SoC		
	BIOS	For motherboard BIOS		
	Memory	2 x SO-DIMM DDR4 3200 MHz (8GB pre-installed)		
Storage	HDD Bay	1 x 2.5" SATA 6Gb/s HDD/SSD bay		
I/O Interface	USB	2 x USB 3.2 Gen 2 (10Gb/s) 2 x USB 2.0		
	Ethernet	4 x RJ-45: 1 x 2.5GbE by Intel® I225LM 3 x 2.5GbE by Intel® I225V (colay I225LM) (support optional PoE af module)		
	COM	2 x RS-422/485 with AFC (DB-9, with 2.5kV isolation) 2 x RS-232 (DB-9, with 2.5kV isolation)		
	Digital I/O	12-bit digital I/O (6-in/ 6-out)		
	Display	1 x HDMI (up to 3840 x 2160 @ 30Hz) 1 x DP++ (up to 4096 x 2304 @ 60Hz)		
	Wireless	1 x 802.11a/b/g/n/ac (optional)		
	TPM	Support Intel PTT		

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	Others	<ul style="list-style-type: none"> 1 x Power button 1 x Reset button 1 x AT/ATX switch 1 x Power LED (green) 1 x HDD LED (yellow) 4-pin external system fan connector
Expansions	M.2	<ul style="list-style-type: none"> 1 x 2230 A key (PCIe x1, USB 2.0) 1 x 3042/52/80 B key (PCIe x2, USB, 3.0, USB 2.0)
	Rear Panel	1 x PCIe Gen 3 x4 (optional)
Power	Power Input	Terminal block: 12V – 28V DC
	Power Consumption	12V @ 6.98A (Intel® Core™ i5-1145G7E with 8GB memory)
Reliability	Mounting	DIN-Rail
	Operating Temp.	-20°C – 60°C with airflow (SSD), 10% – 95%, non-condensing
	Storage Temp.	-40°C – 85°C, 10% – 95%, non-condensing
	Operating Shock	Half-sine shock test 5G, 11ms, 100 shocks per axis (SSD)
	Operating Vibration	MIL-STD-810G 514.6C-1 (SSD)
	Weight (Net/Gross)	2.15/2.5 kg
	Safety/EMC	CE/ FCC
Watchdog Timer	Programmable, 1~255 sec./min.	
OS	Supported OS	Microsoft® Windows 10 / Windows 11, Linux

Table 1-2: Technical Specifications

1.5 Front Panel

The DRPC-240-TGL front panel contains:

- 4 x 2.5GbE LAN
- 2 x USB 3.2 Gen 2 port
- 2 x USB 2.0 port
- 2 x RS-232 port
- 2 x RS-422/485 port

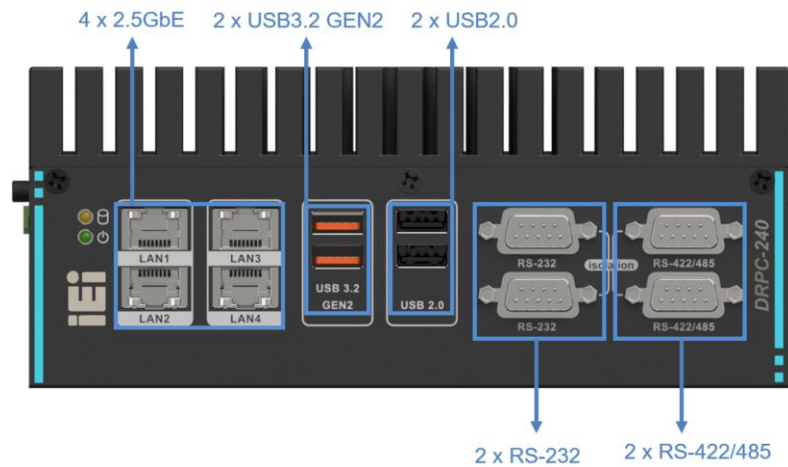


Figure 1-2: DRPC-240-TGL Front Panel

1.6 Rear Panel

The DRPC-240-TGL rear panel contains:

- 1 x DC IN
- 1 x Remote power
- 1 x Power button
- 1 x Reset button
- 1 x DP++
- 1 x HDMI
- ATX/AT switch

DRPC-240-TGL Embedded System

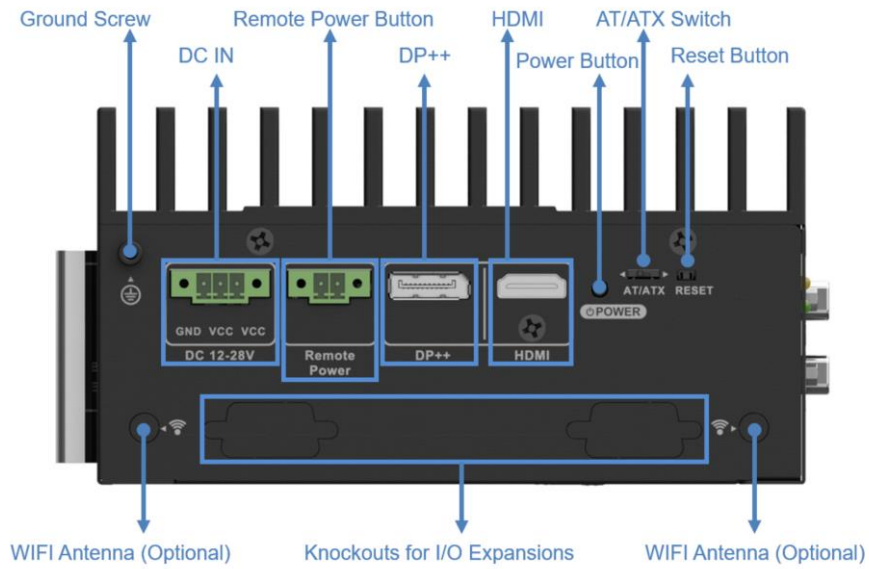


Figure 1-3: DRPC-240-TGL Rear Panel

1.7 Right Side Panel

The DRPC-240-TGL right side panel contains:

- 1 x System fan

System fan connector

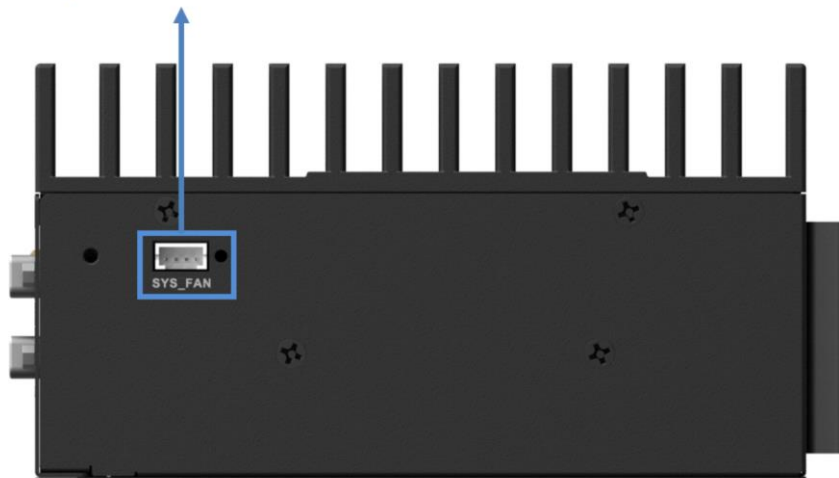


Figure 1-4: DRPC-240-TGL Right Side Panel

1.8 Dimensions

The physical dimensions of the DRPC-240-TGL series are shown below.

With fan:

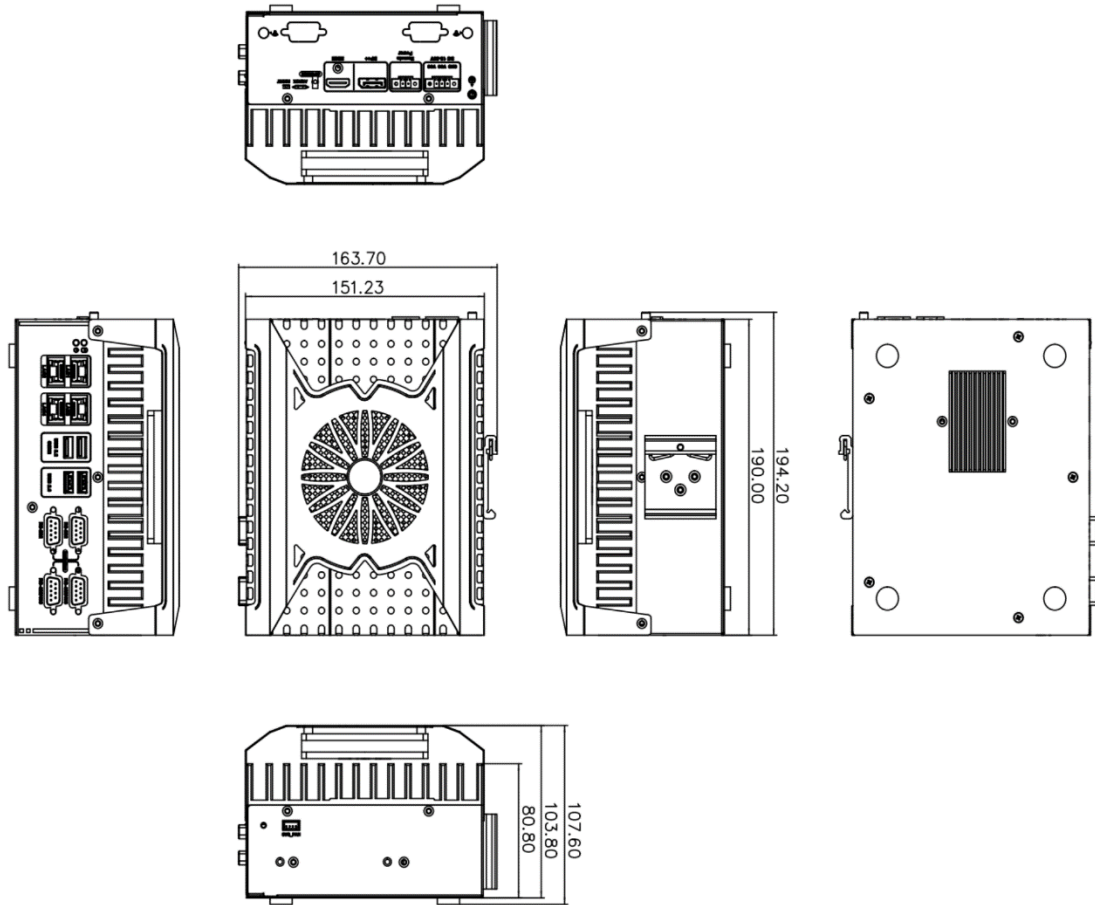


Figure 1-5: DRPC-240-TGL Dimensions

DRPC-240-TGL Embedded System

With expansion layer:

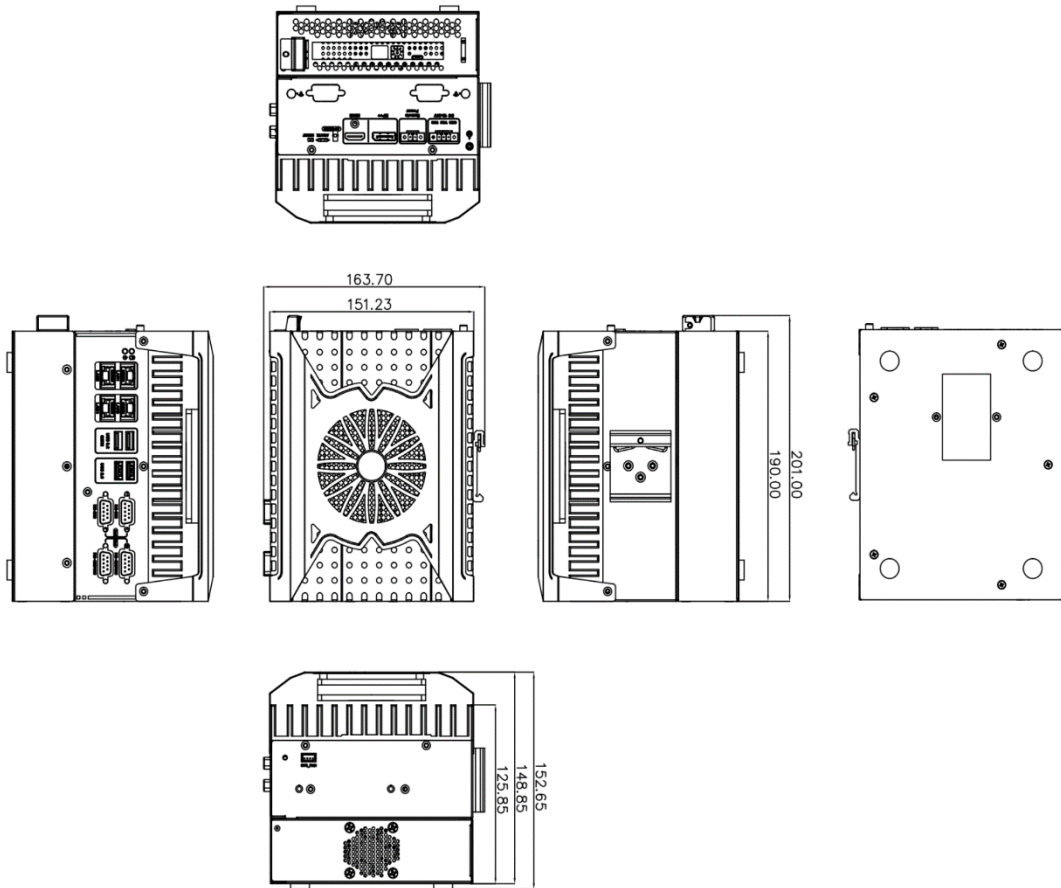


Figure 1-6: DRPC-240-TGL Dimensions

Chapter

2

Unpacking

DRPC-240-TGL Embedded System

2.1 Unpacking

To unpack the embedded system, follow the steps below:

- Step 1:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.
- Step 2:** Open the external (second) box.
- Step 3:** Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.
- Step 4:** Lift the system out of the boxes.
- Step 5:** Remove both polystyrene ends, one from each side.
- Step 6:** Pull the plastic cover off the system.
- Step 7:** Make sure all the components listed in the packing list are present.

2.2 Packing List



NOTE:

If some of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the DRPC-240-TGL from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to sales@ieiworld.com.

The DRPC-240-TGL is shipped with the following components:







Quantity	Item and Part Number	Image
1	DRPC-240-TGL series	
1	DIN rail mounting kit	
1	Screw pack	

Table 2-1: Packing List

Optional	
Wi-Fi module (P/N: EMB-WIFI-KIT02I3-R10)	
Power adapter (120W) (P/N: 63040-010120-300-RS)	
Power adapter (220W) (P/N: 63040-010230-000-RS)	

DRPC-240-TGL Embedded System

Optional	
Power cable (P/N: 32102-054800-100-RS)	
Power cord (P/N: 32702-000400-200-RS)	
PoE power module (P/N: GPOE-DRPC-240-R10)	
1-slot expansion chassis with riser card (P/N: TXC-DRPC-240-1S-R10)	
External fan module (P/N: TXC-DRPC-240-1S-R10)	
DIO cable (P/N: 32031-000600-100-RS)	

Table 2-2: Optional Packing List

Chapter

3

Installation

DRPC-240-TGL Embedded System

3.1 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the DRPC-240-TGL may result in permanent damage to the DRPC-240-TGL and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the DRPC-240-TGL. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the DRPC-240-TGL is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband:** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- **Self-grounding:** Before handling the board, touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- **Use an anti-static pad:** When configuring the DRPC-240-TGL, place it on an anti-static pad. This reduces the possibility of ESD damaging the DRPC-240-TGL.

3.2 Installation Precautions

During installation, be aware of the precautions below:

- **Read the user manual:** The user manual provides a complete description of the DRPC-240-TGL, installation instructions and configuration options.
- **DANGER! Disconnect Power:** Power to the DRPC-240-TGL must be disconnected during the installation process or when the rear panel is

opened. Failing to disconnect the power may cause severe injury to the body and/or damage to the system.

- **Qualified Personnel:** For safety reasons, the DRPC-240-TGL must be installed and operated only by trained and qualified personnel. Maintenance, upgrades, or repairs may only be carried out by qualified personnel who are familiar with the associated dangers.
- **Air Circulation:** Make sure there is sufficient air circulation when installing the DRPC-240-TGL. The DRPC-240-TGL's cooling vents must not be obstructed by any objects. Blocking the vents can cause overheating of the DRPC-240-TGL. Leave at least 5 cm of clearance around the DRPC-240-TGL to prevent overheating.
- **Grounding:** The DRPC-240-TGL should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection per the electrical values indicated on the label attached to the back of the DRPC-240-TGL.

3.3 Back Cover Removal

Before installing or maintaining the internal components, the back cover must be removed from the DRPC-240-TGL. Follow the steps below to complete the task.

Step 1: Turn the DRPC-240-TGL over and remove the 6 screws on the back cover.

Step 2: Take off the back cover (**Figure 3-1**).

DRPC-240-TGL Embedded System



Figure 3-1: Removing the Back Cover

3.4 HDD Bracket Removal

The HDD bracket must be removed first before installing a hard disk or M.2 modules.

Step 1: Remove the 3 screws on the side panels.

Step 2: Remove the HDD bracket as indicated by the arrows in **Figure 3-2**.

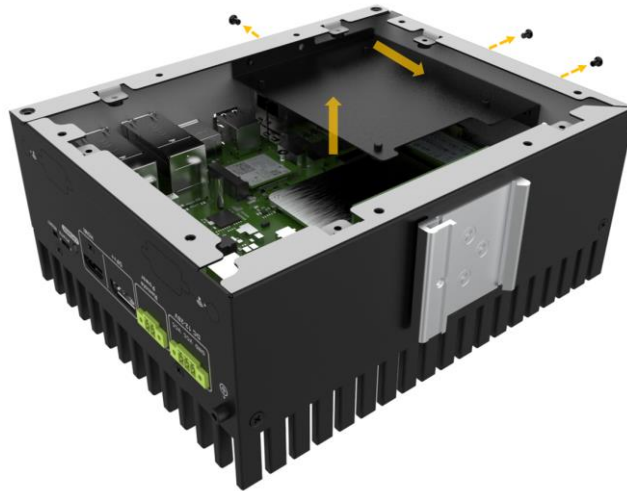


Figure 3-2: Removing the HDD Bracket

3.5 Memory Installation

The DRPC-240-TGL is pre-installed with an 8GB memory module. Users can add or replace memory with different capacity by themselves, the installation procedures are described below.

- Step 1:** Open the two handles of the memory slot.
- Step 2:** Remove the old memory module and insert a new memory module. Carefully align the memory module so the notch on the memory lines up with the notch on the memory socket.
- Step 3:** Once aligned, press down until the memory module is properly seated and the two handles fully clip into place (**Figure 3-3**).

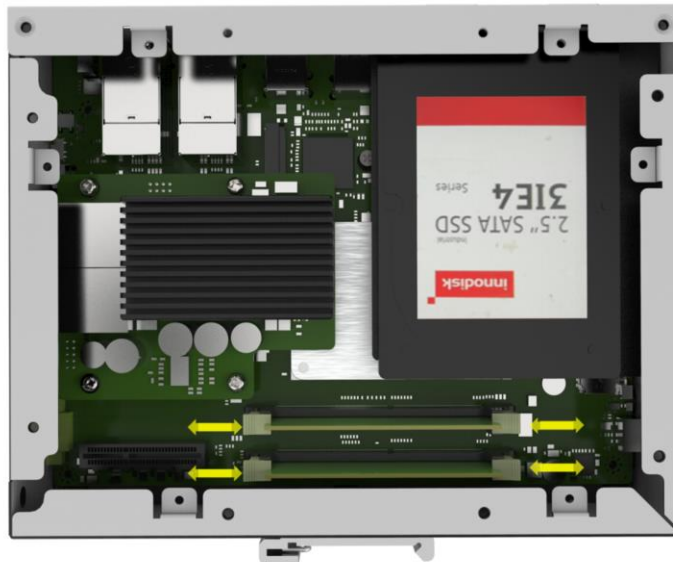


Figure 3-3: Memory Installation

3.6 Storage Installation

The DRPC-240-TGL supports two types of storage, one M.2 B Key & one 2.5" SSD. Before installing a M.2 SSD or 2.5" SSD/HDD, please follow the steps described in **Section 3.4** to remove the HDD bracket.

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3.6.1 M.2 SSD Installation

- Step 1:** Remove the onboard M.2 retention screw, and adjust the stud position according to the size of your M.2 SSD. Note that you must purchase a M.2 SSD that is compliant with the specification of the DRPC-240-TGL.
- Step 2:** Insert the M.2 SSD into the M.2 slot and fasten the screw removed previously (Figure 3-4).

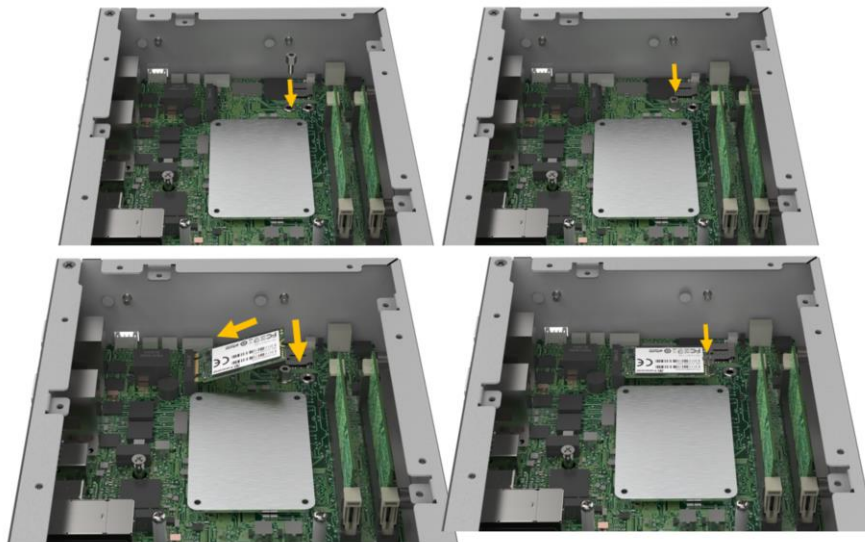


Figure 3-4: M.2 Installation

3.6.2 2.5-inch SSD Installation

- Step 1:** Place the HDD bracket onto the rear of the 2.5-inch hard disk. Fasten 4 screws to secure it.
- Step 2:** Plug in the hard drive cable, and install the HDD bracket back into the DRPC-240-TGL (pay attention to the positioning stud) using 3 screws (Figure 3-5).

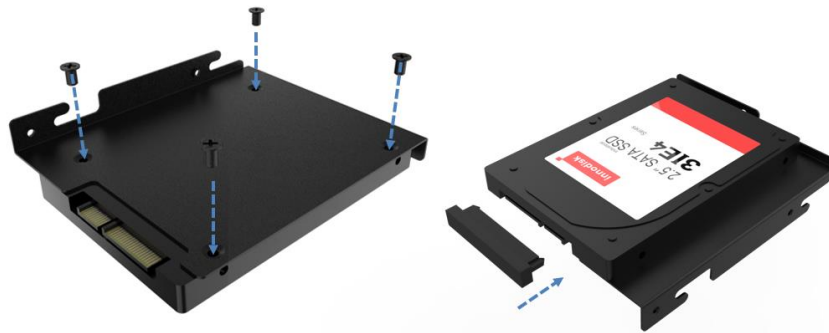


Figure 3-5: HDD Installation

3.7 Wi-Fi Module Installation (Optional)

The Wi-Fi module is an optional accessory. You can purchase it from IEI or other providers. Note that you have to purchase Wi-Fi module, internal antenna and external antenna. It is suggested to purchase an internal antenna longer than 200mm.

To install the Wi-Fi module, follow the steps below.

- Step 1:** Remove the M.2 A key retention screw.
- Step 2:** Insert the Wi-Fi module (IEI P/N: EMB-WIFI-KIT02I3-R10, including one Intel AX210 wireless Bluetooth function module, two 300mm internal antennas and two 108mm external antennas) and secure the screw.
- Step 3:** Secure one end of the internal antenna to the Wi-Fi module.
- Step 4:** Knock out the reserved antenna holes on the chassis, and secure the other end of the internal antenna on the chassis.
- Step 5:** Install the external antennas (**Figure 3-6**).

DRPC-240-TGL Embedded System

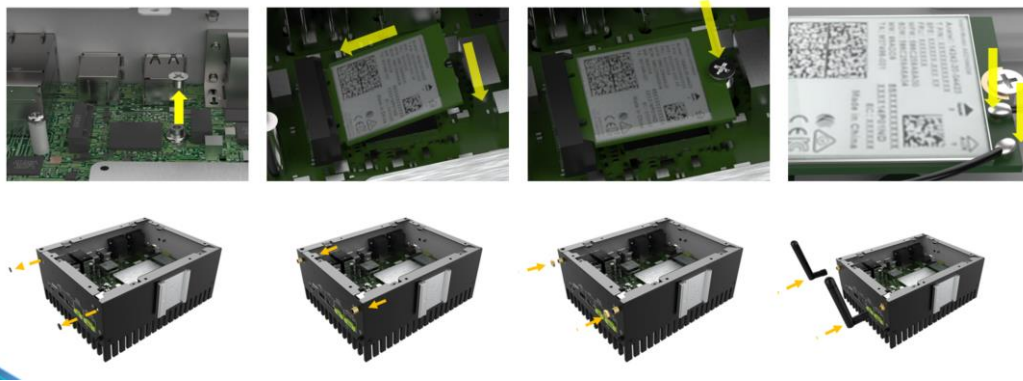


Figure 3-6: Wi-Fi Module Installation

3.8 PoE Power Module Installation (Optional)

This PoE power module provides PoE function to the 4 LAN ports of the DRPC-240 to offer a maximum power consumption of 60W, and a single port power consumption of 15W. To install the PoE module, follow the steps below.

- Step 1:** Align the PoE power module (GPOE-DRPC-240-R10) with the 4 studs and 2 pin headers, and install them in place after positioning.
- Step 2:** Secure the PoE power module with four retention screws.
- Step 3:** The PoE power module comes with a heat sink, so you need to uncover the opening reserved for the heat sink before re-installing the back cover. Remove the two retention screws to uncover the opening on the back cover, and then re-install the back cover using 6 retention screws (**Figure 3-7**).



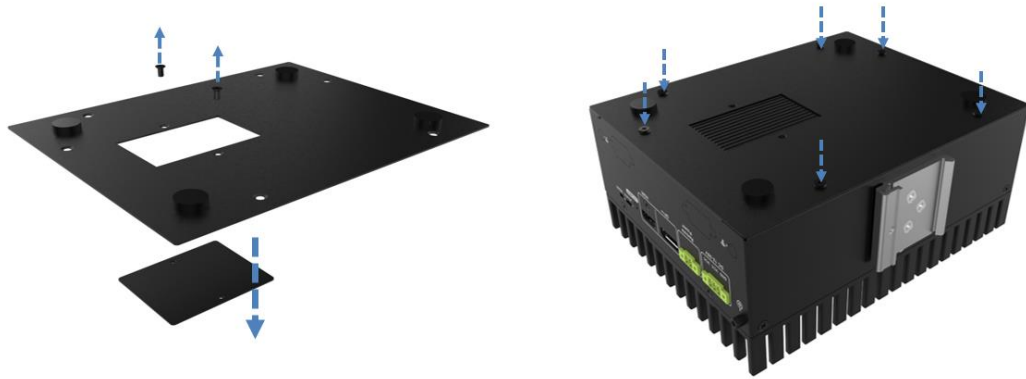


Figure 3-7: PoE Power Module Installation

3.9 External Fan Module Installation (Optional)

When encountering high performance and high heat that need additional cooling, the optional external fan can help the DRPC-240-TGL solve the thermal problem. To install the optional external fan, follow the steps below.

- Step 1:** Remove the 4 screws (2 on the front panel, 2 on the rear panel) on the DRPC-240-TGL as shown in the figure below.
- Step 2:** Install the expansion fan module (SF-DRPC-240-R10) to the DRPC-240-TGL, and secure it using the 4 screws removed previously.
- Step 3:** Connect the fan cable to the fan connector on the side panel (**Figure 3-8**).

DRPC-240-TGL Embedded System



Figure 3-8: External Fan Module Installation

3.10 Adding External I/O Ports (Optional)

Additional two external I/O ports can be added on the DRPC-240-TGL, such as DIO. To do this, follow the steps below.

- Step 1:** Connect one end of the I/O cable to the pin headers on the motherboard
- Step 2:** Remove the DB9 knockout reserved on the chassis. Secure the other end of the cable to the knockout hole (**Figure 3-9**).



Figure 3-9: I/O Cable Installation

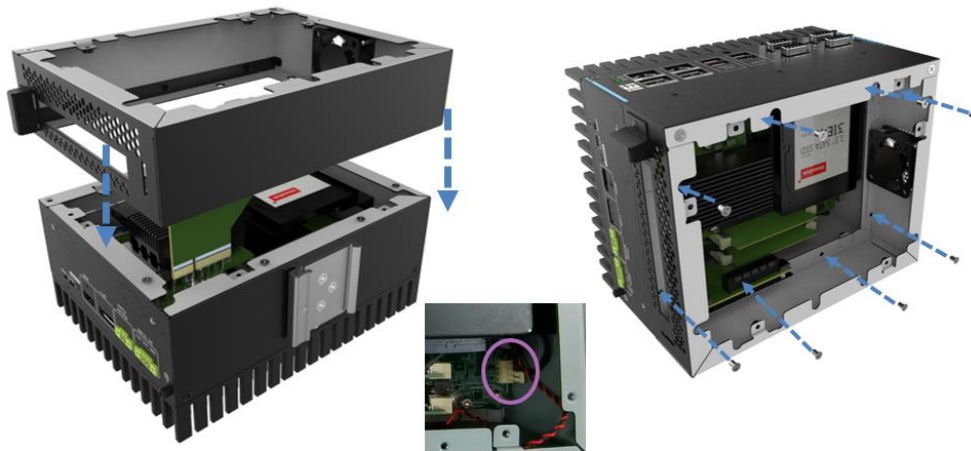
3.11 Expansion Chassis Installation (Optional)

The DRPC-240-TGL provides an option for adding PCIe x4 function, which is achieved by installing the expansion chassis (P/N: TXC-DRPC-240-1S-R10). The installation steps are described below.

Step 1: Before installing the expansion chassis, ensure the fan wire inside the system will not be pressed or damaged (adjust the wiring if necessary). Align the riser card on the expansion chassis with the PCIe x4 slot inside the DRPC-240.

Step 2: Once aligned, insert the riser card into the PCIe slot. Secure the expansion chassis with 8 screws.

Step 3: To install an expansion card, open the cover on the top cover of the expansion chassis by removing 5 screws. Remove the blank bracket and install the PCIe card. Reinstall the bracket screw and the top cover after installing the card **(Figure 3-10)**.



DRPC-240-TGL Embedded System

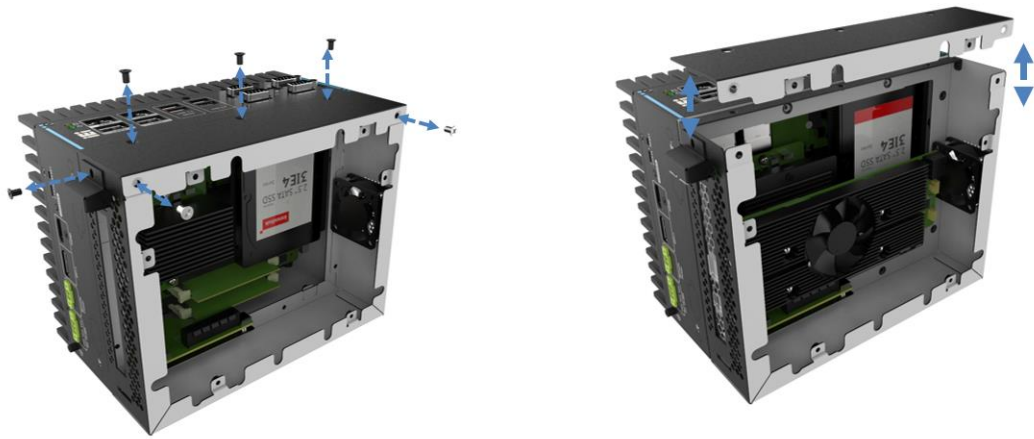


Figure 3-10: Expansion Chassis Installation

3.12 Back Cover Installation

After installing all the internal components of the system, the back cover must be re-installed. Use the 6 screws previously removed to secure the back cover to the chassis (

Figure 3-11).

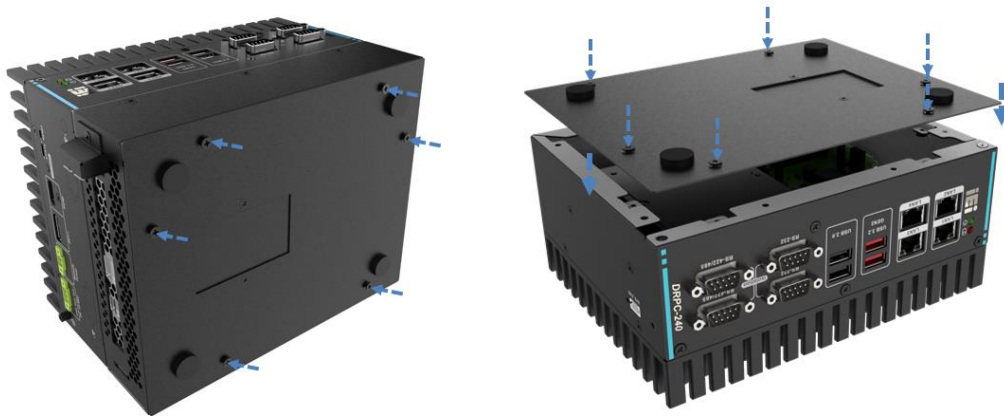


Figure 3-11 Back Cover Installation

3.13 External Device Connection

3.13.1 HDMI Display Device Connection

To connect the HDMI/DP devices, please plug in HDMI/DP connector in the right direction as shown below:



Figure 3-12: HDMI Display Device Connection

3.13.2 Ethernet Connection

The LAN connectors allow connection to an external network.

Step 1: Locate the RJ-45 connectors. The locations of the RJ-45 connectors are shown in **Figure 3-14**.

Step 2: Align the connectors. Align the RJ-45 connector on the LAN cable with one of the RJ-45 connectors on the DRPC-240-TGL. See **Figure 3-13**.

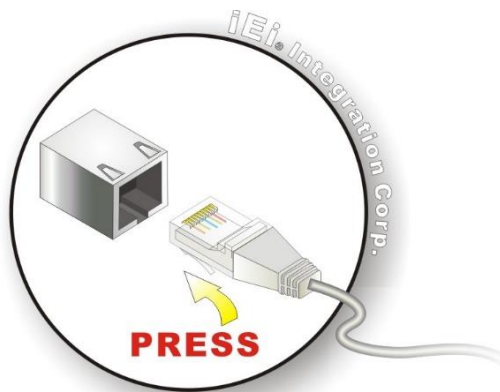


Figure 3-13: LAN Connection

Step 3: Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the on-board RJ-45 connector.

DRPC-240-TGL Embedded System



Figure 3-14: RJ-45 Ethernet Connector

The RJ-45 Ethernet connector has two status LEDs, one green and one yellow. The green LED indicates activity on the port and the yellow LED indicates the port is linked. See **Table 3-1**.

Activity/Link LED		Speed LED	
STATUS	DESCRIPTION	STATUS	DESCRIPTION
Off	No link	Off	100 Mbps connection
SSYellow	Linked	Orange	1 Gbp connection
Blinking	TX/RX activity	Green	2.5 Gbps connection

Table 3-1: RJ-45 Ethernet Connector LEDs

3.13.3 USB Device Connection

The DRPC-240-TGL has two USB 3.2 and two USB 2.0 ports. To connect a USB device, please follow the instructions below.

- Step 1: Located the USB connectors.** The locations of the USB connectors are shown in **Chapter 1**.
- Step 2: Align the connectors.** Align the USB device connector with one of the connectors on the I/O panel. See **Figure 3-15**.
- Step 3: Insert the device connector.** Once aligned, gently insert the USB device connector into the onboard connector.

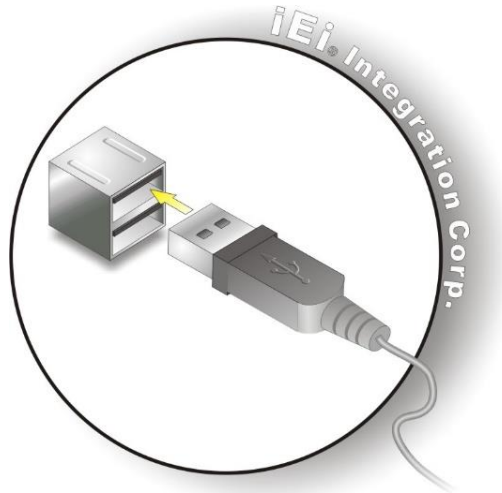


Figure 3-15: USB Connection

3.13.4 DB-9 RS-232/422/485 Serial Port Connection

The DRPC-240-TGL has two RS-232 serial ports and two RS-422/485 serial ports. The pinouts for the serial ports are listed in the **Table 3-2**.

PIN NO.	RS232	RS422	RS485
1	DCD#	TX-	TX-
2	RXD	TX+	TX+
3	TXD	RX+	
4	DTR#	RX-	
5	GND		
6	DSR#		
7	RTS#		
8	CTS#		
9	RI#		

Table 3-2: RS-232 (COM1-2) & RS-232/422/485 (COM3-4) Connector Pinouts

DRPC-240-TGL Embedded System

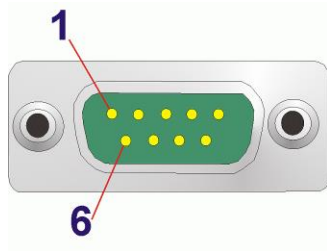


Figure 3-16: DB-9 RS-232/422/485 Serial Port Connector

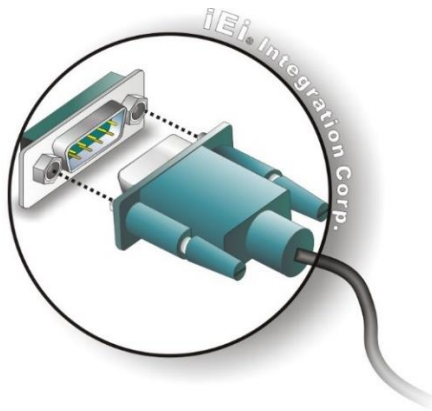


Figure 3-17: Serial Device Connection

3.13.5 Power Input, 3-pin Terminal Block

The power connector connects the leads of a 12 V~28 V DC power supply into the terminal block. Make sure that the power and ground wires are attached to the correct sockets of the connector.

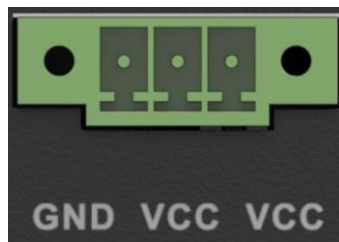


Figure 3-18: Power Input Terminal Connection

3.13.6 ATX/AT Mode Selection

AT and ATX power modes can both be used on the DRPC-240-TGL. The selection is made through an AT/ATX switch on the top panel as shown below (Figure 3-19).

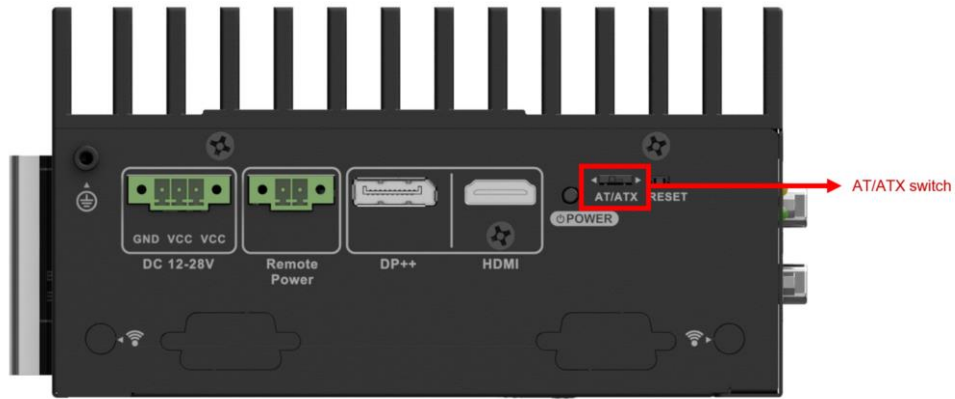


Figure 3-19: ATX/AT Mode Selection

3.13.7 Remote Power Connector

This remote power switch connector can be connected to an external switch for remote control of power on and off (Figure 3-20).

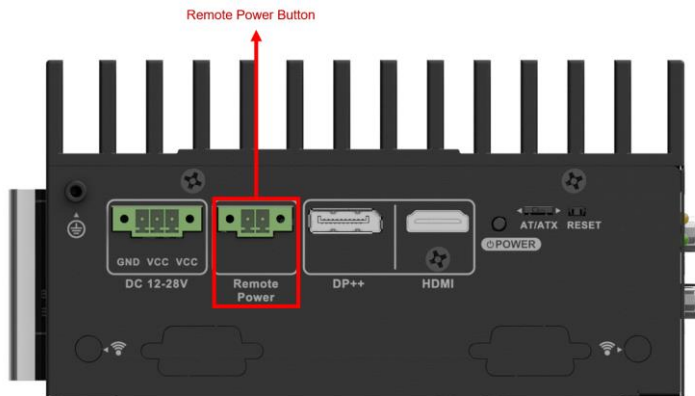


Figure 3-20: Remote Power Connector

DRPC-240-TGL Embedded System

3.14 Powering On/Off the System



WARNING:

Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.

- **Power on** the system: press the power button for 3 seconds
- **Power off** the system: press the power button for 6 seconds
- The power of this system can be less than 250w-20A.

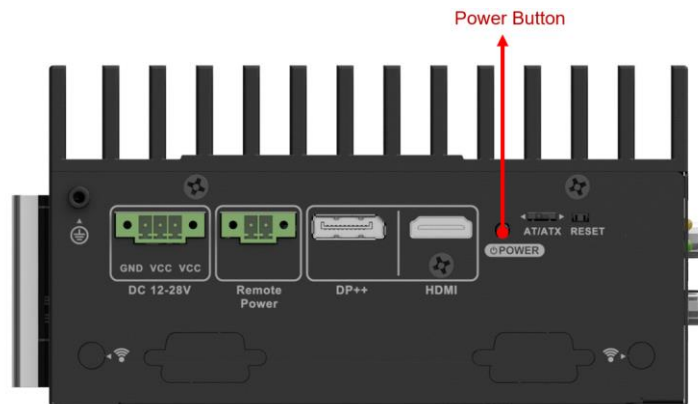


Figure 3-21: Power Button

3.15 Power Input & LED

There is a power connector on the panel. The power connector is a 3-pin terminal block. Supported power input voltage: 12-28V.

Power Input (Terminal block): 12-28V

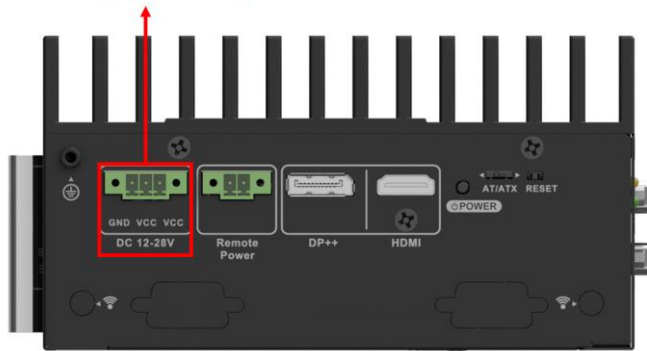


Figure 3-22: Power Input

Power LED

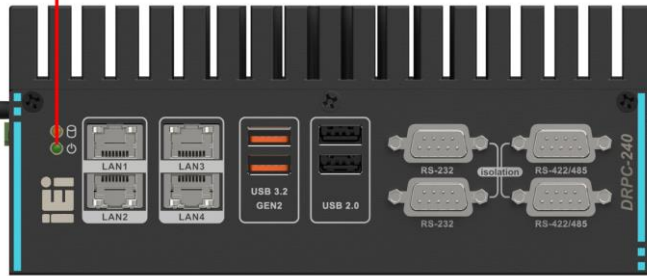


Figure 3-23: Power LED

Power LED Indicator	Description
Breathing Orange	Standby mode.
Solid blue	Power-on mode.

Table 3-3: Power LED Indicators Description



NOTE:

The power LED turns off when the power cable is unplugged from the system.

DRPC-240-TGL Embedded System

3.16 Available Drivers

All the drivers for the DRPC-240-TGL are available on IEI Resource Download Center (<https://download.ieiworld.com>). Type DRPC-240-TGL and press Enter to find all the relevant software, utilities, and documentation.

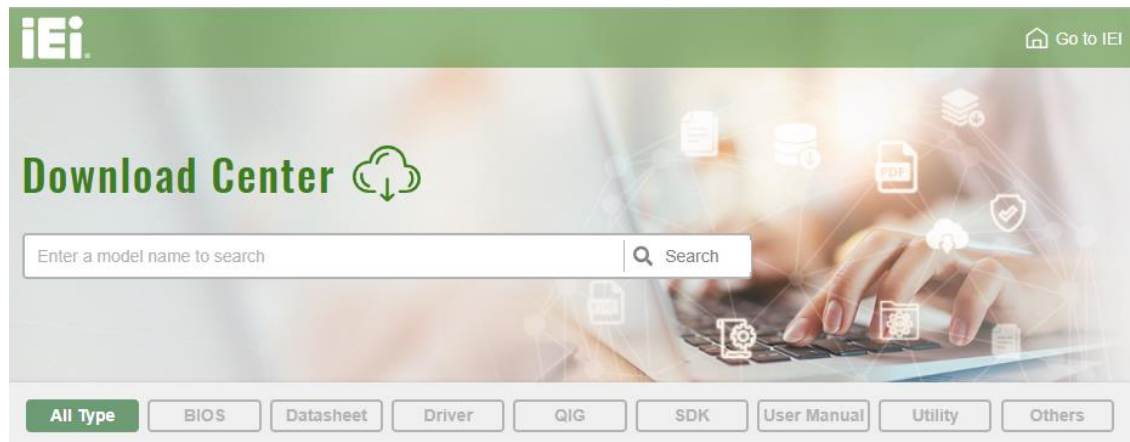
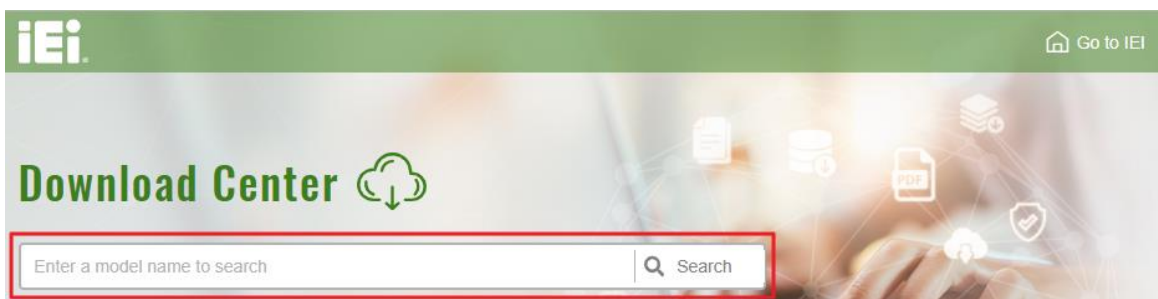


Figure 3-24: IEI Resource Download Center

3.16.1 Driver Download

To download drivers from IEI Resource Download Center, follow the steps below.

Step 1: Go to <https://download.ieiworld.com>. Type DRPC-240-TGL and press Enter.



Step 2: All product-related software, utilities, and documentation will be listed. You can choose **Driver** to filter the result.

All Type BIOS Datasheet **Driver** QIG SDK User Manual Utility Others

WAFER-BT-i1 Product Info ▶

Embedded Computer ▶ Single Board Computer ▶ Embedded Board
3.5" SBC with Intel® 22nm Atom™/Celeron® on-board SoC

Driver

File Name	Published	Version	File Checksum
7B000-001033-RS V2.3.iso (2.23 GB)	2017/10/03	2.30	3B2DB1F792779A93A8F50DDBC3943E30

Step 3: Click the driver file name on the page and you will be prompted with the following window. You can download the entire ISO file (❶), or click the small arrow to find an individual driver and click the file name to download (❷).

7B000-001168-RS_V1.4.iso

❶ [Click here to download entire ISO file. \(2.99 GB\)](#)

* Download individual file *

- Docs
 - 1.Chipset
 - ❷ 10.1.1.12.zip (2.7 MB)
 - 2.VGA
 - 3.Audio
 - 4.Lan
 - 5.USB 3.0
 - 6.Serial IO
 - 7.TXE
 - 8.Manual



NOTE:

To install software from the downloaded ISO image file in Windows 10 (or later), double-click the ISO file to mount it as a virtual drive to view its content.

Chapter

4

System Motherboard

4.1 Overview

The connectors and jumpers of the system motherboard are listed in the following sections.

4.1.1 Layout

The following diagram shows the locations of the internal/external connectors and jumpers on the motherboard.

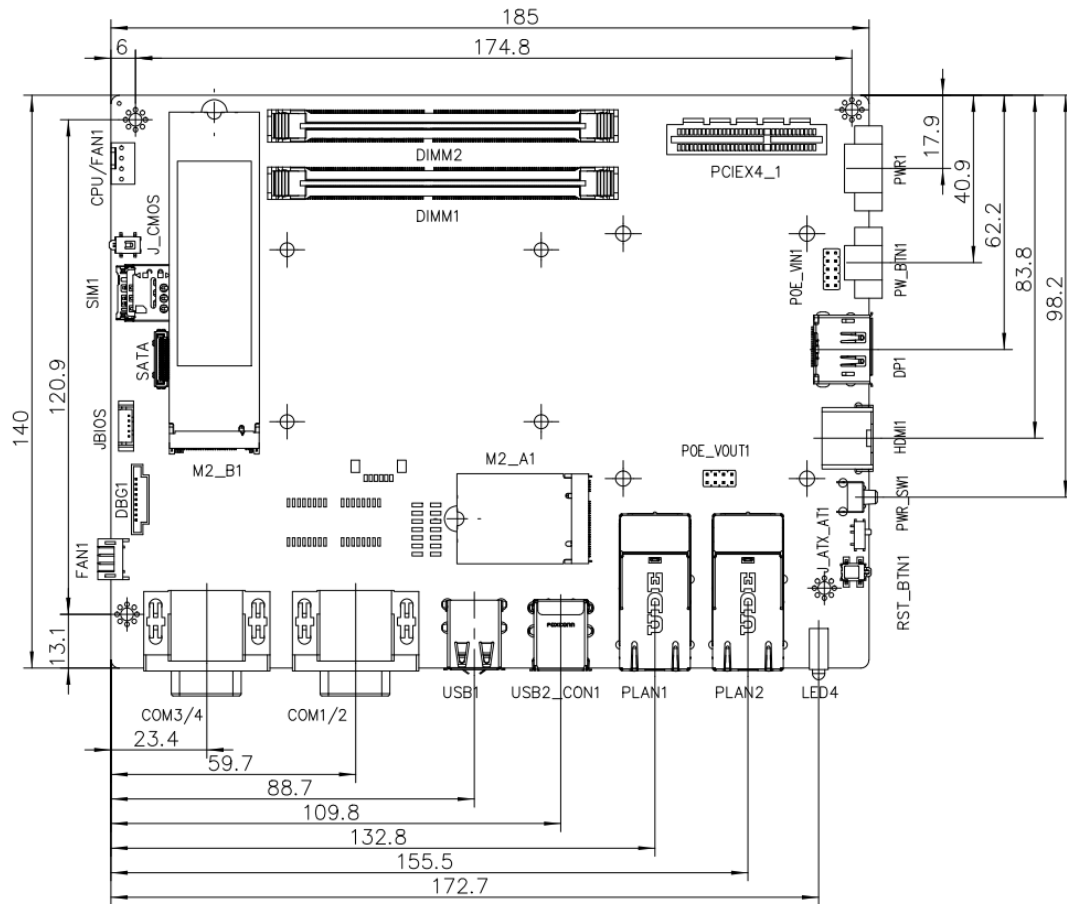


Figure 4-1: System Motherboard (Front)

DRPC-240-TGL Embedded System

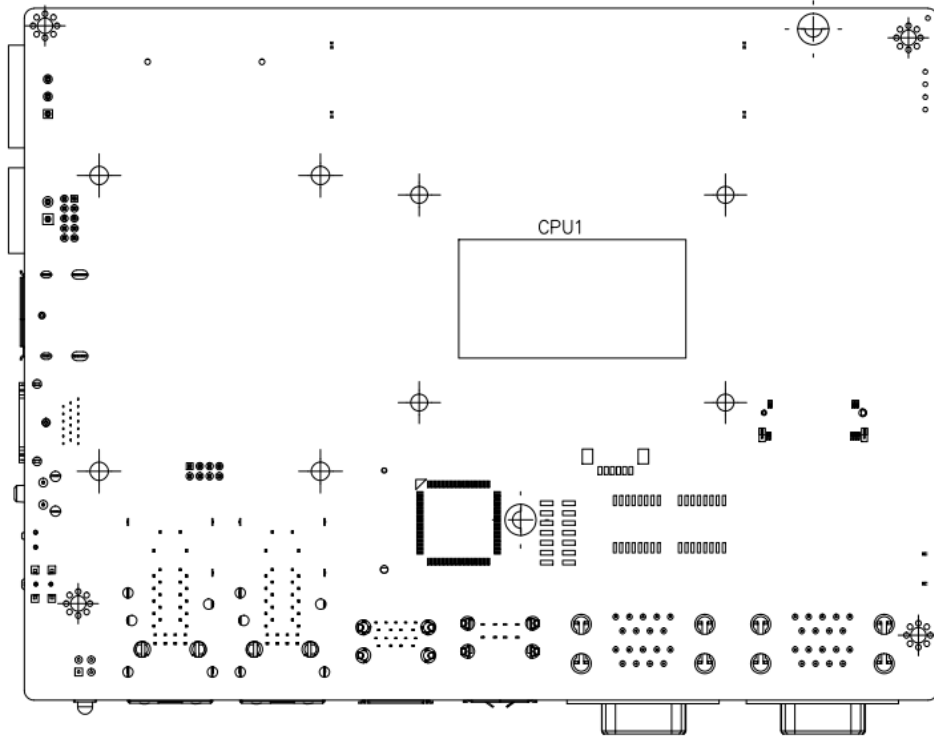


Figure 4-2: System Motherboard (Rear)

4.2 Internal Peripheral Connectors

The table below shows a list of the connectors on the motherboard.

Label	Function
SATA	Serial ATA connectors
SIM1	SIM card connector
M2_A1	M.2 A key card connector
M2_B1	M.2 B key card connector
CPU/FAN1	CPU fan connector

Table 4-1: Internal Peripheral Connectors

4.2.1 SATA Connector (SATA1)

The DRPC-240-TGL has one SATA connector for SATA device connection.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	11	+5V
2	GND	12	NC
3	GND	13	NC
4	GND	14	GND
5	GND	15	RX+
6	GND	16	RX-
7	+5V	17	GND
8	+5V	18	TX-
9	+5V	19	TX+
10	+5V	20	GND

Table 4-2: SATA Connector Pinouts (SATA1)

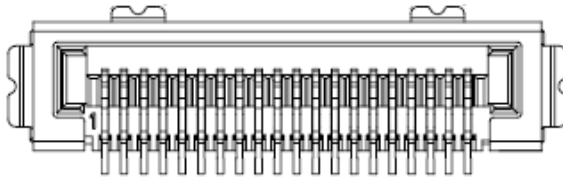


Figure 4-3: SATA Connector

4.2.2 SIM Card Slot (SIM1)

PIN NO.	DESCRIPTION
1	SIM_VCC
2	SIM_RST
3	SIM_Clock
5	GND
6	N/C
7	SIM_DATA

Table 4-3: SIM Card Slot Pinouts (SIM1)

DRPC-240-TGL Embedded System

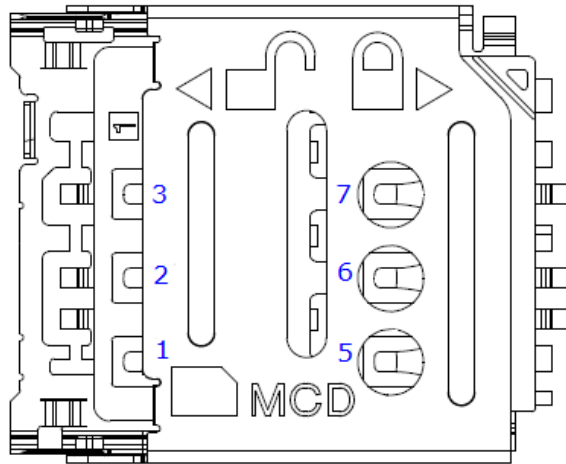


Figure 4-4: SIM Card Slot (SIM1)

4.2.3 M.2 A-Key Card Slot (M2_A1)

The M.2 A-Key card slot supports USB 2.0 and PCIe x1.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+V3.3A
3	USB+	4	+V3.3A
5	USB-	6	NC
7	GND	8	Module Key
9	Module Key	10	Module Key
11	Module Key	12	Module Key
13	Module Key	14	Module Key
15	Module Key	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	GND	24	GND
25	NC	26	NC
27	NC	28	NC
29	GND	30	GND
31	NC	32	NC
33	GND	34	NC
35	PCIE_TX0+	36	GND

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
37	PCIE_TX0-	38	NC
39	GND	40	NC
41	PCIE_RX0+	42	NC
43	PCIE_RX0-	44	NC
45	GND	46	NC
47	CLK_PCIE0+	48	NC
49	CLK_PCIE0-	50	NC
51	GND	52	BUF_PLT_RST#
53	PCIE_CLKREQ#	54	Pull Up +V3.3A
55	PCIE_WAKE#	56	Pull Up +V3.3A
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	GND	64	NC
65	NC	66	NC
67	NC	68	NC
69	GND	70	NC
71	NC	72	+V3.3A
73	NC	74	+V3.3A
75	GND		

Table 4-4: M.2 A-Key Card Slot Pinouts (M2_A1)

4.2.4 M.2 B-Key Card Slot (M2_B1)

The M.2 B-Key card slot supports USB 3.0 and SIM card.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC3
3	GND	4	VCC3
5	GND	6	FULL_CARD_POWER_OFF#
7	USBD+	8	N/C
9	USBD-	10	N/C
11	GND	12	Module Key

DRPC-240-TGL Embedded System

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
13	Module Key	14	Module Key
15	Module Key	16	Module Key
17	Module Key	18	Module Key
19	Module Key	20	N/C
21	GND	22	N/C
23	GND	24	N/C
25	C N/	26	N/C
27	GND	28	N/C
29	USB3.0_RX-	30	UIM_RST
31	USB3.0_RX+-	32	UIM_CLK
33	GND	34	UIM_DATA
35	USB3.0_TX-	36	UIM_PWR
37	USB3.0_TX+	38	N/C
39	GND	40	SMBCLK(1.8V)
41	PCIE_RXN0	42	SMBDATA(1.8V)
43	PCIE_RXP0	44	N/C
45	GND	46	N/C
47	PCIE_TXN0	48	N/C
49	PCIE_TXP0	50	PERST#
51	GND	52	N/C
53	PCIE_CLK#	54	PCIE_WAKE#
55	PCIE_CLK	56	N/C
57	GND	58	N/C
59	N/C	60	N/C
61	N/C	62	N/C
63	N/C	64	N/C
65	N/C	66	N/C
67	RST	68	N/C
69	GND	70	VCC3
71	GND	72	VCC3
73	GND	74	VCC3
75	GND		

Table 4-5: M.2 B-Key Slot Pinouts (M2_B1)

4.2.5 CPU Fan Connector

The CPU fan connector can provide 12V/500mA to a CPU fan.

PIN NO.	DESCRIPTION
1	GND
2	+V12S
3	Rotation Signal
4	PWM Control Signal

Table 4-6: CPU Fan Connector Pinouts (CPU/FAN1)

4.3 External Peripheral Connectors

The table below shows a list of the external connectors of the system.

Label	Function
HDMI1	HDMI connector
DP1	DisplayPort connector
USB2_CON1	USB 3.2 Gen 2 connectors
USB1	USB 2.0 connectors
COM1/2	Dual-port serial port connector (RS-232)
COM3/4	Dual-port serial port connector (RS-422/RS485)
PW_BTN1	Remote power connector
PLAN1, PLAN2	Dual LAN connectors
PWR1	Power input connector
FAN1	System fan connector

Table 4-7: External Peripheral Connectors

DRPC-240-TGL Embedded System

4.3.1 HDMI Connector (HDMI1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	HDMI_DATA2	2	GND
3	HDMI_DATA2#	4	HDMI_DATA1
5	GND	6	HDMI_DATA1#
7	HDMI_DATA0	8	GND
9	HDMI_DATA0#	10	HDMI_CLK
11	GND	12	HDMI_CLK#
13	N/C	14	N/C
15	HDMI_SCL	16	HDMI_SDA
17	GND	18	+5V
19	HDMI_HPD		

Table 4-8: HDMI Connector Pinouts (HDMI1)

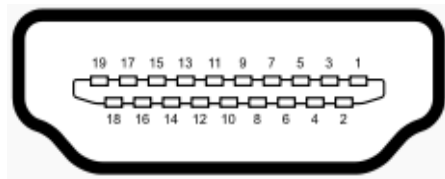


Figure 4-5: HDMI Connector

4.3.2 DP Connector (DP1)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	11	AUXP
2	LANE1N	12	AUXN
3	LANE1P	13	GND
4	GND	14	LANE2P
5	LANE3N	15	LANE2N
6	LANE3P	16	GND
7	GND	17	LANE0P
8	AUX_CTRL_DET_D	18	LANE0N
9	GND	19	+3.3V
10	HPD		

Table 4-9: DP Connector Pinouts (DP1)

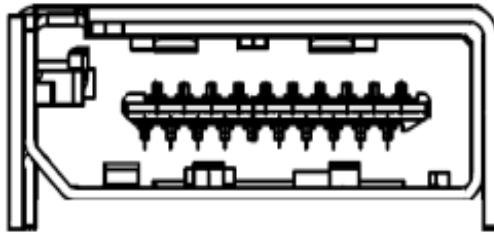


Figure 4-6: DP Connector

4.3.3 USB 3.2 Gen 2 Connectors (USB2_CON1)

The DRPC-240-TGL has two USB 3.2 Gen 2 (10Gb/s) connectors.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	10	VCC
2	USB_DATA-	11	USB_DATA-
3	USB_DATA+	12	USB_DATA+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+

Table 4-10: USB 3.2 Gen 2 Connector Pinouts (USB2_CON1)

4.3.4 USB 2.0 Connectors (USB1)

The DRPC-240-TGL provides two USB 2.0 connectors for USB device connection.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USB_VCC	5	USB_VCC
2	DATA-	6	DATA-
3	DATA+	7	DATA+
4	GND	8	GND

Table 4-11: USB 2.0 Connector Pinouts (USB1)

DRPC-240-TGL Embedded System

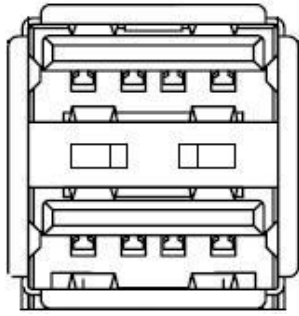


Figure 4-7: USB 2.0 Connector

4.3.5 RS-232 Connectors (COM1/2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	ISOCOM_GND		

Table 4-12: RS-232 Connector Pinouts (COM1, COM2)

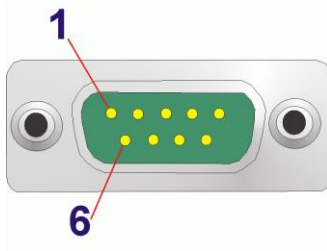


Figure 4-8: RS-232 Connector

4.3.6 Remote Power Connector (PW_BTN1)

This connector is for remote power control.

PIN NO.	DESCRIPTION
1	GND
2	PWRBTN_SW#

Table 4-13: Remote Power Connector (PW_BTN1)

4.3.7 RS-422/485 Serial Port Connectors (COM3/4)

Mode	RS-422	RS-485
PIN NO.	DESCRIPTION	DESCRIPTION
1	TXD-	DATA-
2	TXD+	DATA+
3	RXD+	N/A
4	RXD-	N/A
5	ISOCOM_GND	N/A
6	N/A	N/A
7	N/A	N/A
8	N/A	N/A
9	N/A	N/A

Table 4-14: RS-422/485 Serial Port Connector Pinouts (COM3, COM4)

4.3.8 Dual LAN Connectors (PLAN1, PLAN2)

The DRPC-240-TGL has four RJ-45 Ethernet connectors.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2-
3	MDIA2-	7	MDIA0-
4	MDIA1-	8	MDIA0+

Table 4-15: LAN Connector Pinouts (PLAN1, PLAN2)

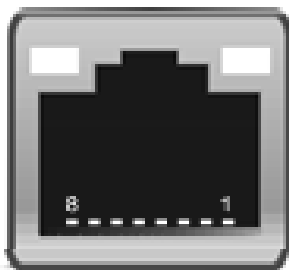


Figure 4-9: RJ-45 Connector

DRPC-240-TGL Embedded System

4.3.9 Power Input Connector (PWR1)

This connector supports +12V ~ +28V DC power input.

PIN NO.	DESCRIPTION
1	+12V~28V
2	+12V~28V
3	GND

Table 4-16: Power Input Connector Pinouts (PWR1)

4.3.1 System Fan Connector

The system fan connector can provide 12V/500mA to a system fan.

PIN NO.	DESCRIPTION
1	GND
2	+V12S
3	Rotation Signal
4	PWM Control Signal

Table 4-17: System Fan Connector Pinouts (FAN1)

Chapter

5

BIOS

DRPC-240-TGL Embedded System

5.1 Introduction

The BIOS is programmed onto the BIOS chip. The BIOS setup program allows changes to certain system settings. This chapter outlines the options that can be changed.



NOTE:

Some of the BIOS options may vary throughout the life cycle of the product and are subject to change without prior notice.

5.1.1 Starting Setup

The UEFI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. **Using keyboard:** Press the **DEL** or **F2** as soon as the system is turned on.
2. **Using touchscreen:** Press the **Setup** button on the upper right corner of the BIOS Starting Menu.

If the message disappears before the **DEL** or **F2** key is pressed, restart the computer and try again, then the BIOS Starting Menu will appear. Select "Setup" and press Enter to get into the BIOS Setup.

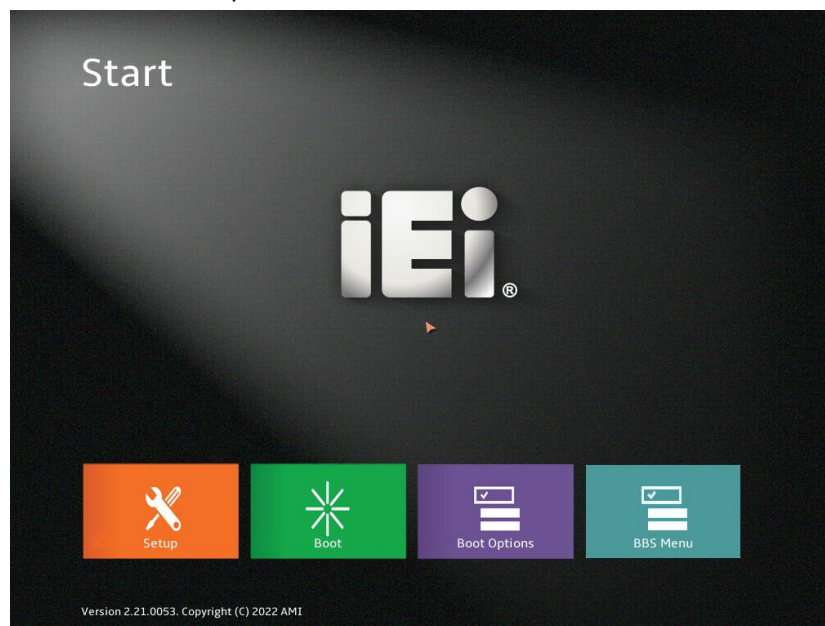


Figure 5-1: BIOS Starting Menu

5.1.2 Using Setup

The BIOS Setup menu can be navigated by using a keyboard or a touchscreen.

5.1.2.1 Keyboard Navigation

For keyboard navigation, use the navigation keys shown in **Table 5-1**.

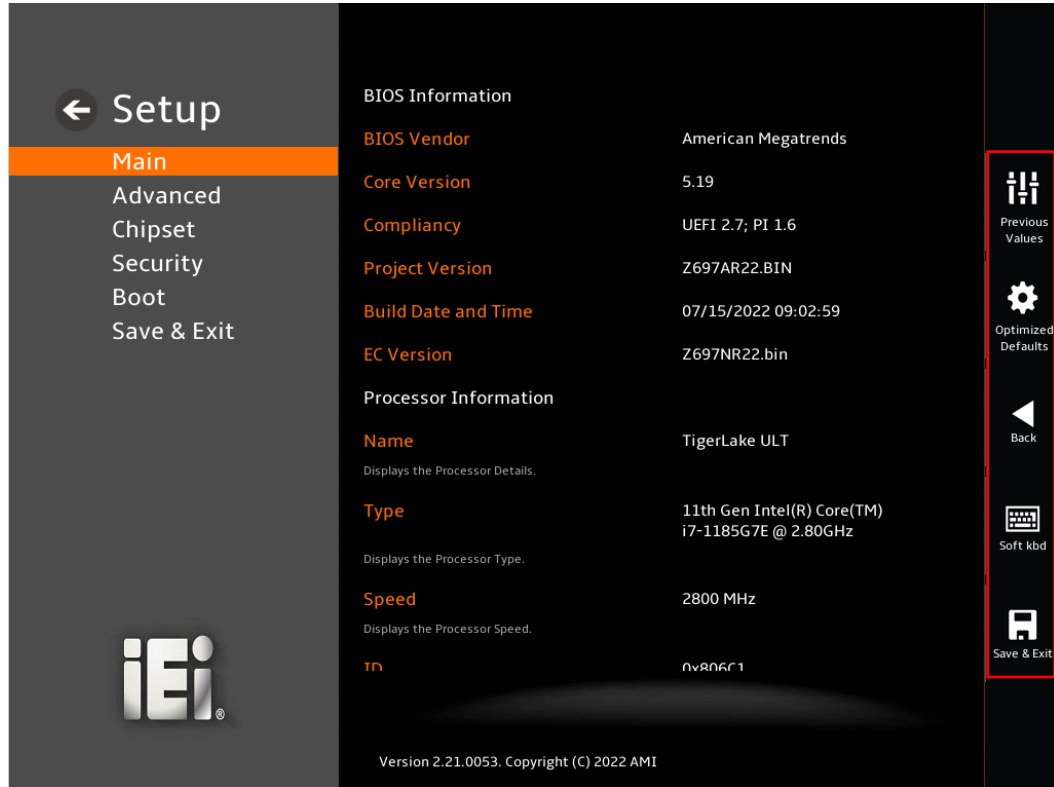
Key	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
+	Increase the numeric value or make changes
-	Decrease the numeric value or make changes
Page Up	Move to the previous page
Page Dn	Move to the next page
Esc	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2	Load previous values
F3	Load optimized defaults
F4	Save changes and Exit BIOS
<K>	Scroll help area upwards
<M>	Scroll help area downwards

Table 5-1: BIOS Navigation Keys

DRPC-240-TGL Embedded System

5.1.2.2 Touch Navigation

For touchscreen navigation, use the on-screen navigation keys shown below.



On-screen Button	Function
Previous Values	Load the last value you set.
Optimized Defaults	Load the factory default values in order to achieve the best performance.
Back	Return to the previous menu.
Soft kbd	Display the on-screen keyboard.
Save & Exit	Save the changes made to the BIOS options and reset the system.

Table 5-2: BIOS On-screen Navigation Keys

5.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window, press the **Esc** key.

5.1.4 Unable to Reboot after Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the clear CMOS button described in **Chapter 4**.

5.1.5 BIOS Menu Bar

The **menu bar** on top of the BIOS screen has the following main items:

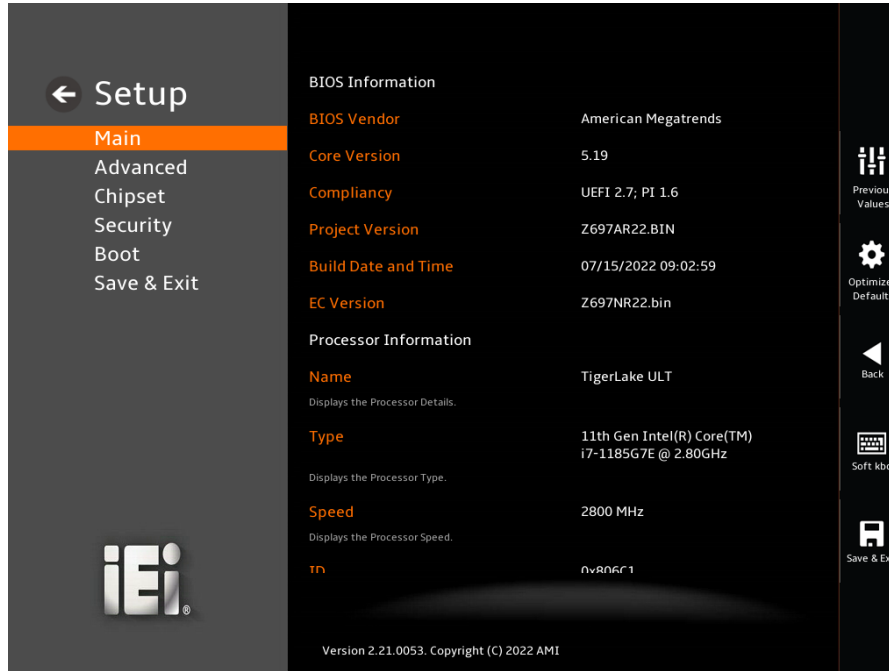
- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings.
- Chipset – Changes the chipset settings.
- Security – Sets User and Supervisor Passwords.
- Boot – Changes the system boot configuration.
- Save & Exit – Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

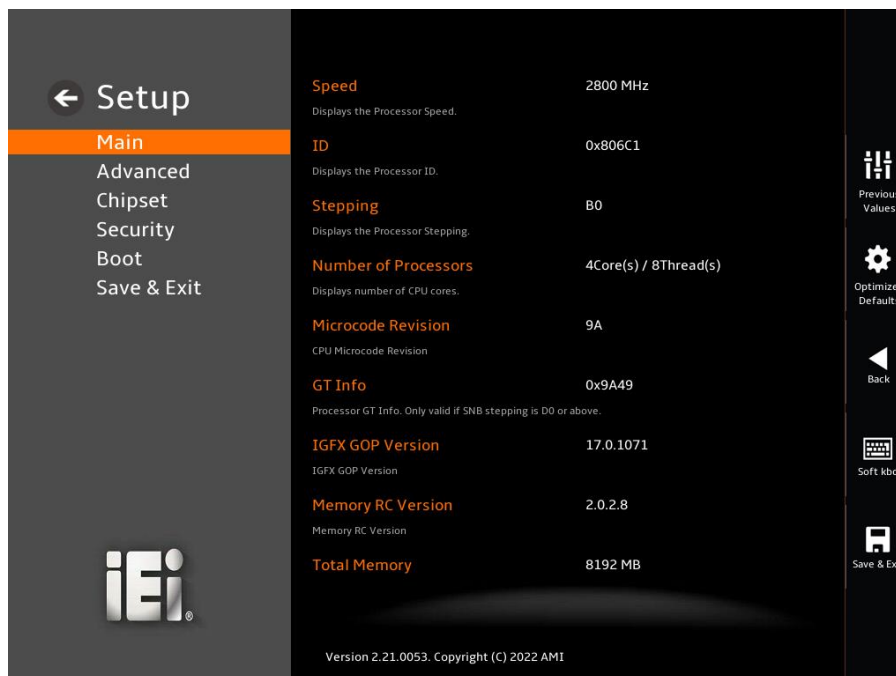
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5.2 Main

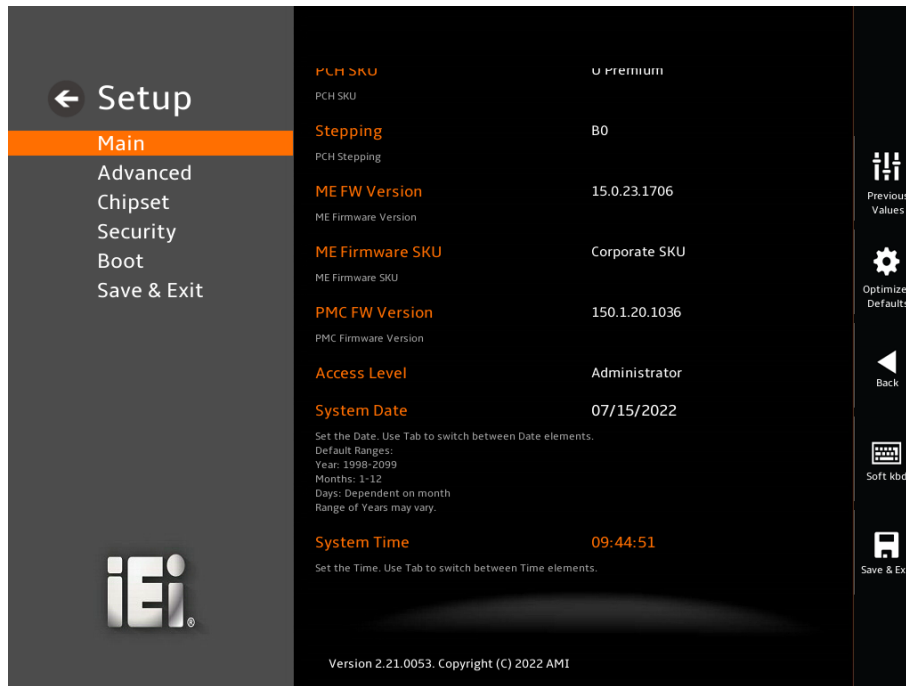
The **Main** BIOS menu appears when the **BIOS Setup** program is entered. The **Main** menu gives an overview of the basic system information.



BIOS Menu 1: Main (1/3)



BIOS Menu 2: Main (2/3)



BIOS Menu 3: Main (3/3)

➔ BIOS Information

The **BIOS Information** lists a brief summary of the BIOS. The fields in **BIOS Information** cannot be changed. The items shown in the system overview include:

- **BIOS Vendor:** Installed BIOS vendor
- **Core Version:** Current BIOS version
- **Compliance:** Current UEFI & PI version
- **Project Version:** the board version
- **Build Date:** Date the current BIOS version was made
- **EC Version:** Current EC version
- BIOS Information

➔ Processor Information

The **Processor Information** lists a brief summary of the Processor. The fields in **Processor Information** cannot be changed. The items shown in the system overview include:

- **Name:** Displays the Processor Details

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- **Type:** Displays the Processor Type
- **Speed:** Displays the Processor Speed
- **ID:** Displays the Processor ID
- **Stepping:** Displays the Processor Stepping
- **Package:** Displays the Processor Package
- **Number of Processors:** Displays number of CPU cores
- **Microcode Revision:** CPU Microcode Revision
- **GT Info:** Processor GT Info. Only valid if SNB stepping is D0 or above
- **IGFX GOP Version:** Displays the IGFX GOP Version
- **Memory RC Version:** Displays the Memory RC Version
- **Total Memory:** Displays the install Memory in the system
- **Memory Speed:** Displays the Frequency of Memory

→ PCH Information

The **PCH Information** lists a brief summary of the PCH. The fields in **PCH Information** cannot be changed. The items shown in the system overview include:

- **Name:** Displays the PCH Name
- **PCH SKU:** Displays the PCH SKU
- **Stepping:** Displays the PCH Stepping
- **ME FW Version:** Displays the ME Firmware Version
- **ME Firmware SKU:** Displays the ME Firmware SKU
- **PMC FW Version:** Displays the PMC Firmware Version

The System Overview field also has two user configurable fields:

→ System Date [xx/xx/xx]

Use the **System Date** option to set the system date. Manually enter the day, month and year.

→ System Time [xx:xx:xx]

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

5.3 Advanced

Use the **Advanced** menu (**BIOS Menu 4**) to configure the CPU and peripheral devices through the following sub-menus:



WARNING!

Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.



BIOS Menu 4: Advanced

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5.3.1 RC ACPI Settings

Use the **RC ACPI Settings** menu (**BIOS Menu 5**) to configure the system power control and distribution of the hardware device.



BIOS Menu 5: RC ACPI Settings

→ Low Power S0 Idle Capability [Disabled]

Use the **Low Power S0 Idle Capability** option to enable or disable the Low Power S0 Idle Capability.

- **Disabled** **DEFAULT** Disables Low Power S0 Idle Capability.
- **Enabled** Enables Low Power S0 Idle Capability.

The following options are available when the **Low Power S0 Idle Capability** option is enabled.

→ EC Notification [Disabled]

Use the **EC Notification** option to enable or disable the function of sending EC Notification when the system turns into Low Power S0 Idle State.

- Disabled** **DEFAULT** Disables EC Notification function
- Enabled** Enables EC Notification function

The following two options are available when the **EC Notification** option is enabled, otherwise they are unavailable.

→ EC CS Debug Light [Disabled]

Use the **EC CS Debug Light** option to enable or disable the EC CS Debug Light function which controls the CAPS LOCK lights to be turned on when EC enters Low Power S0 Idle State.

- Disabled** **DEFAULT** Disables EC CS Debug Light function
- Enabled** Enables EC CS Debug Light function

→ EC Low Power Mode [Disabled]

Use the **EC Low Power Mode** option to enable or disable the EC Low Power Mode which controls whether EC will go to Low power mode during Low Power S0 Idle State.

- Disabled** **DEFAULT** Disables EC Low Power Mode
- Enabled** Enables EC Low Power Mode

→ Sensor Standby [Disabled]

Use the **Sensor Standby** option to enable or disable the Sensor Standby Mode.

- Disabled** **DEFAULT** Disables Sensor Standby Mode
- Enabled** Enables Sensor Standby Mode

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→ CS PL1 Limit [Disabled]

Use the **Sensor Standby** option to enable or disable the Sensor Standby Mode.

- **Disabled** **DEFAULT** Disables Sensor Standby Mode
- **Enabled** Enables Sensor Standby Mode

When the **CS PL1 Limit** option is enabled, the **CS PL1 Value** option is available.

→ CS PL1 Value

Use the + or – key to change the **CS PL1** value. Enter a decimal number between 500 and 12500. For 12.50W, enter 12500.

→ LPIT Residency Counter [Disabled]

Use the **LPIT Residency Counter** option to select the system power mode.

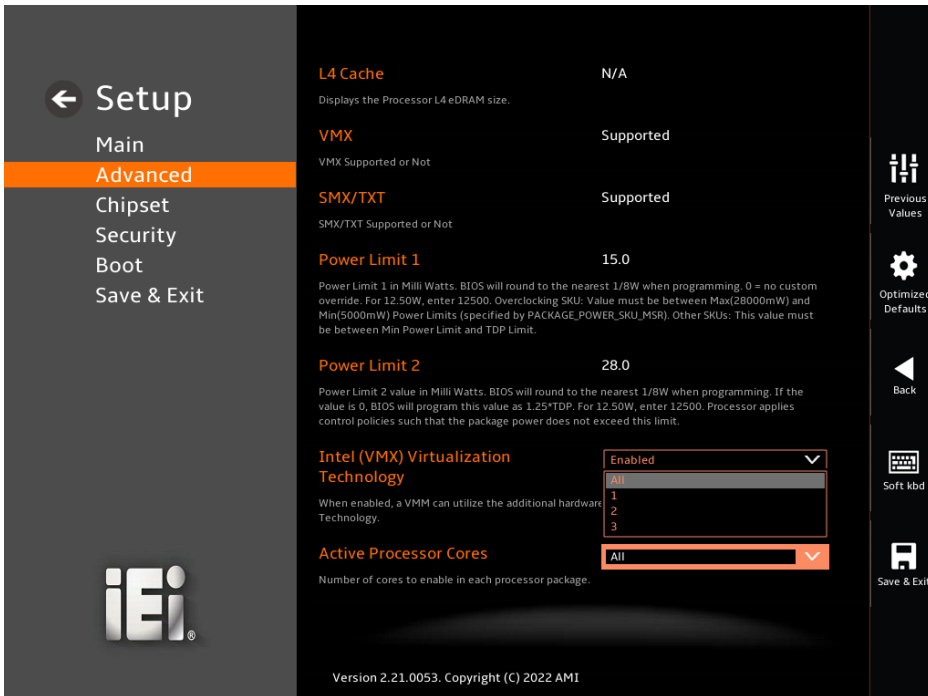
- **SLP S0** **DEFAULT**
- **C10**

5.3.2 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 8**&**BIOS Menu 7**&**BIOS Menu 8**&**BIOS Menu 9**) to view detailed CPU specifications or enable the Intel Virtualization Technology.



BIOS Menu 6: CPU Configuration (1/4)



BIOS Menu 7: CPU Configuration (2/4)

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← Setup

- Main
- Advanced**
- Chipset
- Security
- Boot
- Save & Exit

Power Limit 2 28.0
Power Limit 2 value in Milli Watts. BIOS will round to the nearest 1/8W when programming. If the value is 0, BIOS will program this value as 1.25*TDP. For 12.50W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

Intel (VMX) Virtualization Technology Enabled
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Active Processor Cores All
Number of cores to enable in each processor package.

Hyper-Threading Enabled
Enable or Disable Hyper-Threading Technology.

Intel(R) SpeedStep(tm) Enabled
Allows more than two frequency ranges to be supported.

C states Disabled
Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

Intel Trusted Execution Technology Disabled
Enables utilization of additional hardware capabilities provided by Intel (R) Trusted Execution Technology.

Changes require a full power cycle to take effect.

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Previous Values
Optimized Defaults
Back
Soft kbd
Save & Exit

BIOS Menu 8: CPU Configuration (3/4)

← Setup

- Main
- Advanced**
- Chipset
- Security
- Boot
- Save & Exit

C states Disabled
Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.

Intel Trusted Execution Technology Disabled
Enables utilization of additional hardware capabilities provided by Intel (R) Trusted Execution Technology.

Changes require a full power cycle to take effect.

Power Limit 1 15000
Power Limit 1 in Milli Watts. BIOS will round to the nearest 1/8W when programming. 0 = no custom override. For 12.50W, enter 12500. Overclocking SKU: Value must be between Max(28000mW) and Min(5000mW) Power Limits (specified by PACKAGE_POWER_SKU_MSR). Other SKUs: This value must be between Min Power Limit and TDP Limit.

Power Limit 2 28000
Power Limit 2 value in Milli Watts. BIOS will round to the nearest 1/8W when programming. 0 = no custom override. For 12.50W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

Power Limit 1 Time Window 128
Power Limit 1 Time Window value in seconds. The value may vary from 0 to 128. 0 = default value (28 sec for Mobile and 8 sec for Desktop). Defines time v maintained.

Turbo Mode Enabled
Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.

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Previous Values
Optimized Defaults
Back
Soft kbd
Save & Exit

BIOS Menu 9: CPU Configuration (4/4)

→ **Intel (VMX) Virtualization Technology [Disabled]**

Use the **Intel (VMX) Virtualization Technology** option to enable or disable virtualization on the system. When combined with third party software, Intel® Virtualization technology allows several OSs to run on the same system at the same time.

- **Disabled** Disables Intel Virtualization Technology.
- **Enabled** **DEFAULT** Enables Intel Virtualization Technology.

→ **Active Processor Cores [All]**

Use the **Active Processor Cores** BIOS option to enable numbers of cores in the processor package.

- **All** **DEFAULT** Enable all cores in the processor package.
- **1** Enable one core in the processor package.
- **2** Enable two cores in the processor package.
- **3** Enable three cores in the processor package.

→ **Hyper-Threading [Enabled]**

Use the **Hyper-Threading** option to enable or disable the **Hyper-Threading** Technology.

- **Disabled** Disables Hyper-Threading Technology
- **Enabled** **DEFAULT** Enables Hyper-Threading Technology

→ **Intel(R) SpeedStep(tm) [Enabled]**

Use the **Intel(R) SpeedStep(tm)** option to enable or disable the Intel® SpeedStep Technology which allows more than two frequency ranges to be supported.

- **Disabled** Disables Intel® SpeedStep Technology
- **Enabled** **DEFAULT** Enables Intel® SpeedStep Technology

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→ C states [Disabled]

Use the **C states** option to enable or disable CPU power management which allows CPU to go to C states when it is not 100% utilized.

- **Disabled** **DEFAULT** Disables CPU power management
- **Enabled** Enables CPU power management

→ Tcc Activation Offset [Enabled]

Use the **Turbo Mode** option to enable or disable Turbo Mode which requires Intel Speed Step or Intel Speed Shift to be available and enabled.

- **Disabled** **DEFAULT** Disables Turbo Mode Technology
- **Enabled** Enables Turbo Mode Technology

→ Power Limit 1

Use the + or – key to change the **Power Limit 1** value. BIOS will program the default values for Limit 1 and Power Limit 1 Time Window. For 12.50W, enter 12500.

→ Power Limit 2

Use the + or – key to change the **Power Limit 2** value. BIOS will round to the nearest 1/8W when programming. 0 = no custom override. For 12.50W, enter 12500.

→ Power Limit 1 Time Window [0]

Use the **Power Limit 1 Time Window** option to select the PL1 time duration. The value may vary from 0 to 128. For 0 is the default value

→ Turbo Mode [Enabled]

Use the **Turbo Mode** option to enable or disable Turbo Mode which requires Intel Speed Step or Intel Speed Shift to be available and enabled.

- **Disabled** Disables Turbo Mode Technology
- **Enabled** **DEFAULT** Enables Turbo Mode Technology

5.3.3 PCH-FW Configuration

The **PCH-FW Configuration** menu (**BIOS Menu 10**) allows Intel® Active Management Technology (AMT) options to be configured.



BIOS Menu 10: PCH-FW Configuration

➔ **AMT BIOS Features [Enabled]**

Use **AMT BIOS Features** option to enable or disable the Intel® AMT function.

- ➔ **Disabled** Intel® AMT is disabled
- ➔ **Enabled** **DEFAULT** Intel® AMT is enabled

➔ **Unconfigure ME [Disabled]**

Use the **Unconfigure ME** option to unconfigure ME with resetting MEBx password to default.

- ➔ **Disabled** **DEFAULT** Not unconfigure ME with resetting MEBx password to default
- ➔ **Enabled** Unconfigure ME with resetting MEBx password to default

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5.3.4 ACPI D3Cold Settings

Use the **ACPI D3Cold Settings** menu (错误!未找到引用源。) to configures the Advanced Configuration and Power Interface (ACPI) options.



BIOS Menu 11: ACPI D3Cold Support

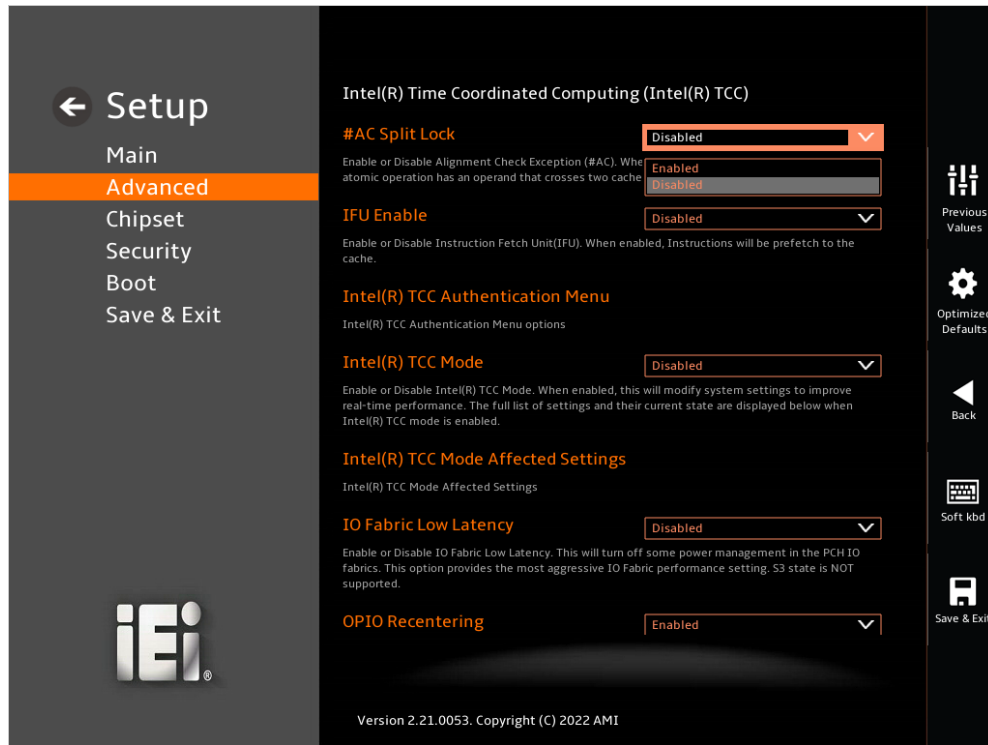
→ ACPI D3Cold Support [Disabled]

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- **Enabled** Enable D3Cold Mode
- **Disabled** **DEFAULT** Disable D3Cold Mode

5.3.5 Intel(R) Time Coordinated Computing

Use the **Intel(R) Time Coordinated Computing** menu (**BIOS Menu 12**) to configure settings related to the Intel TCC options



BIOS Menu 12: Intel Time Coordinated Computing

➔ **AC Split Lock [Disabled]**

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- ➔ **Enabled** Enable AC Split Lock.
- ➔ **Disabled** **DEFAULT** Disable AC Split Lock

➔ **IFU Enable [Disabled]**

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

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- **Enabled** Enable AC Split Lock.
- **Disabled** **DEFAULT** Disable AC Split Lock

→ Intel(R) TCC Mode [Disabled]

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- **Enabled** Enable AC Split Lock.
- **Disabled** **DEFAULT** Disable AC Split Lock

→ IO Fabric Low Latency [Disabled]

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- **Enabled** Enable AC Split Lock.
- **Disabled** **DEFAULT** Disable AC Split Lock

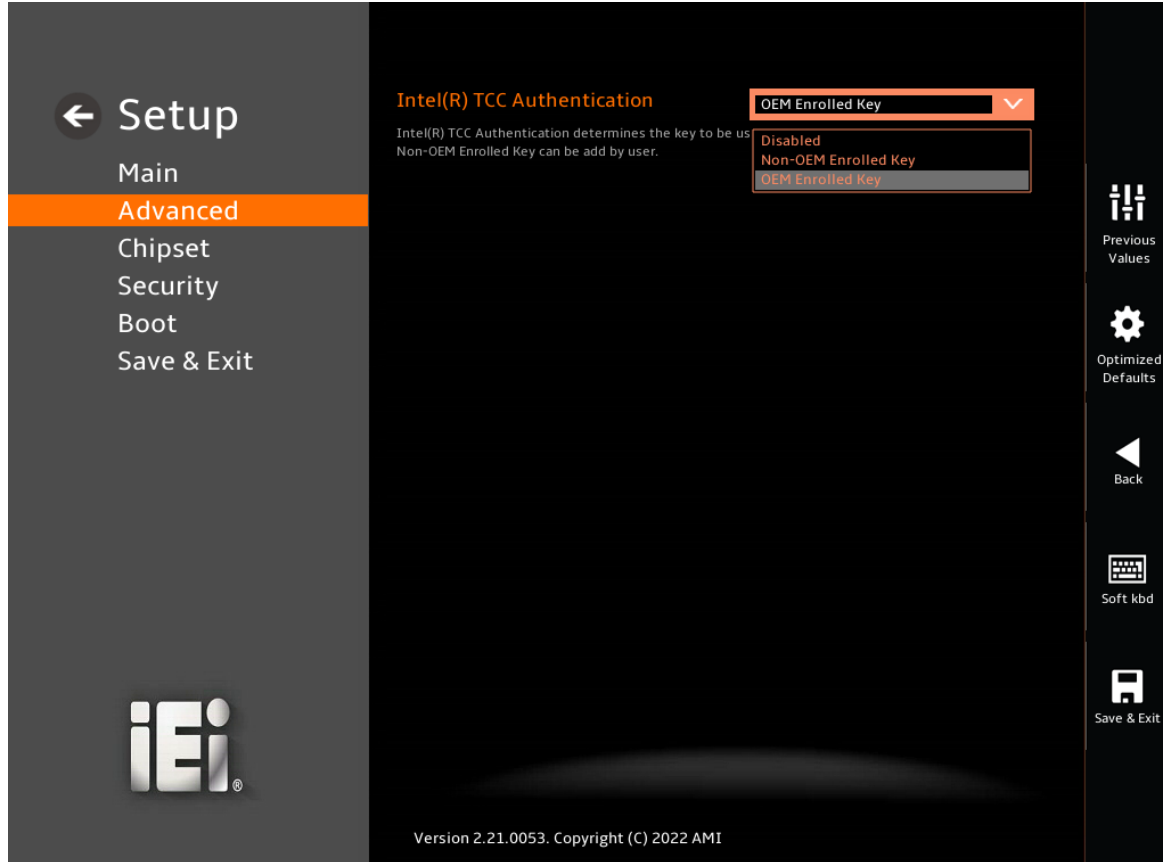
→ OPIO Recentering [Disabled]

Use the **ACPI Sleep State** option to specify the sleep state the system enters when it is not being used.

- **Enabled** Enable AC Split Lock.
- **Disabled** **DEFAULT** Disable AC Split Lock

5.3.5.1 Intel(R) TCC Authentication Menu

Use the **Intel(R) TCC Authentication** submenu (**BIOS Menu 13**) to configure the Intel(R) TCC Authentication Menu options.



BIOS Menu 13: Intel(R) TCC Authentication Menu

➔ **Intel(R) TCC Authentication [Disabled]**

Use the **Intel(R) TCC Authentication** option to specify the sleep state the system enters when it is not being used.

- ➔ **Disabled** **DEFAULT** Disable AC Split Lock
- ➔ **Non-OEM Enrolled Key** Enable AC Split Lock.
- ➔ **OEM Enrolled Key** Disable AC Split Lock

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5.3.6 Trusted Computing

Use the **Trusted Computing** menu (**BIOS Menu 14**) to configure settings related to the Trusted Computing Group (TCG) Trusted Platform Module (TPM).



BIOS Menu 14: PCH-FW Configuration

➔ Security Device Support [Disable]

Use the **Security Device Support** option to configure support for the TPM.

- ➔ **Disable** TPM support is disabled.
- ➔ **Enable** **DEFAULT** TPM support is enabled.

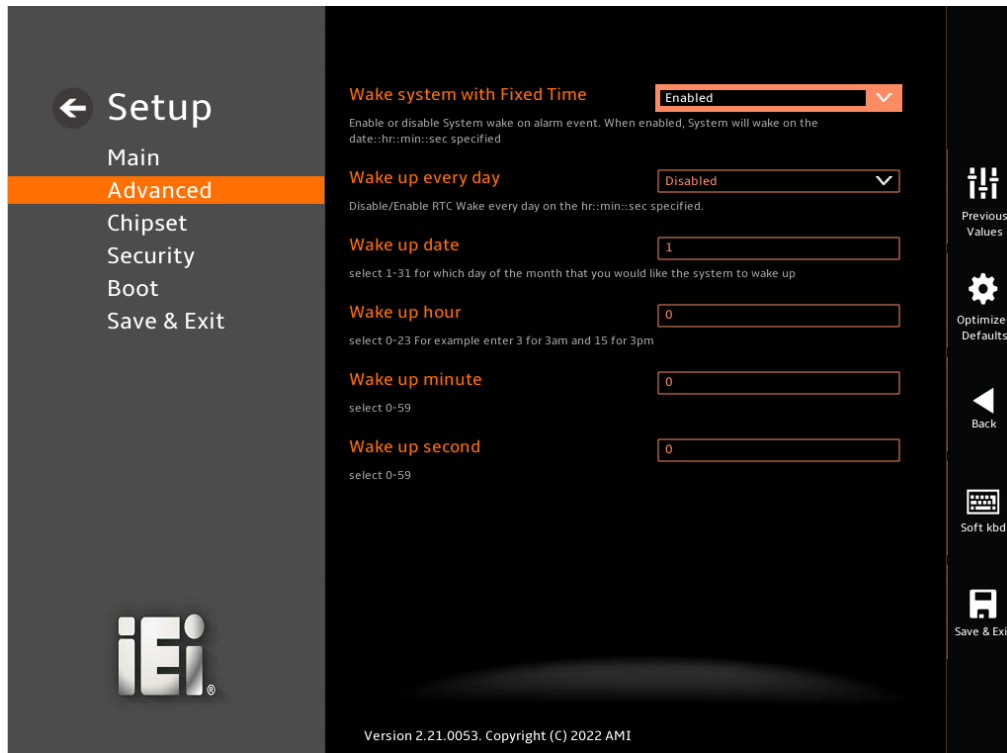
➔ Pending Operation [None]

Use the **Pending Operation** option to schedule an operation for the security device.

- ➔ **None** **DEFAULT** TPM information is previous.S
- ➔ **TPM Clear** TPM information is cleared

5.3.7 RTC Wake Settings

The **RTC Wake Settings** menu (**BIOS Menu 15**) configures RTC wake event.



BIOS Menu 15: RTC Wake Settings

➔ **Wake System with Fixed Time [Disabled]**

Use the **Wake System with Fixed Time** option to specify the time the system should be roused from a suspended state.

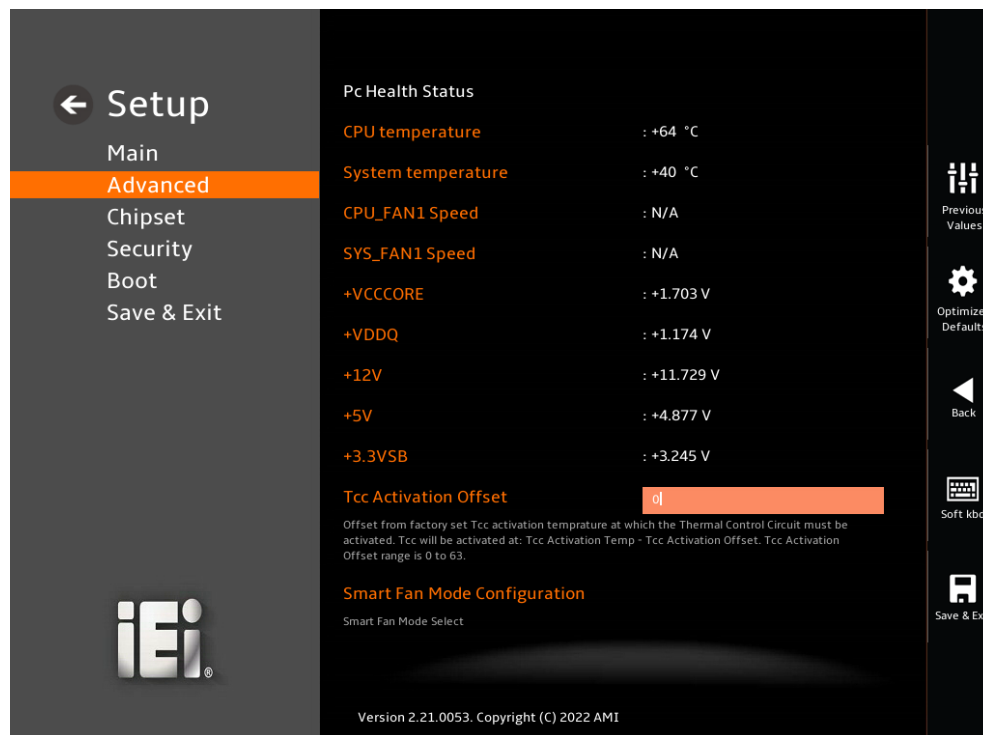
- ➔ **Disabled** **DEFAULT** The real time clock (RTC) cannot generate a wake event
- ➔ **Enabled** If selected, the following appears with values that can be selected:
 - *Wake up every day
 - *Wake up date
 - *Wake up hour
 - *Wake up minute
 - *Wake up second

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*Wake After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

5.3.8 EC H/W Monitor

The EC H/W Monitor menu (**BIOS Menu 16**) contains the smart fan mode configuration submenu and shows the state of H/W real-time operating temperature, fan speeds and system voltages.



BIOS Menu 16: ENE KB9068 Monitor

→ PC Health Status

The following system parameters and values are shown. The system parameters that are monitored are:

- System Temperatures:
 - CPU Temperature
 - System Temperature
- Fan Speeds:

- CPU_FAN1 Speed
- SYS_FAN1 Speed
- Voltages:
 - +VCCCORE
 - +VDDQ
 - +12V
 - +5V
 - +3.3VSB

➔ **Tcc Activation Offset [0]**

Use the + or – key to change the **Tcc Activation Offset** value which offset from default value of Thermal Control Circuit (TCC) activation temperature when the TCC is activated. TCC Activation Offset range is 0 to 63.

5.3.8.1 Smart Fan Mode Configuration

Use the **Smart Fan Mode Configuration** submenu (**BIOS Menu 17**) to configure the CPU/system fan start/off temperature and control mode.



BIOS Menu 17: Smart Fan Mode Configuration

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→ CPU_FAN1/SYS_FAN1 Smart Fan Control [Auto Mode]

Use the **CPU_FAN1/SYS_FAN1 Smart Fan Control** option to configure the CPU Smart Fan.

→ **Manual Mode** The fan spins at the speed set in Manual Mode settings.

→ **Auto Mode** **DEFAULT** The fan adjusts its speed using Auto Mode settings.

→ Auto mode fan start temperature

If the CPU temperature is between **fan off** and **fan start**, the fan speed change to **fan start PWM**. To set a value, Use the + or – key to change the value or enter a decimal number between 1 and 100.

→ Auto mode fan off temperature

If the CPU temperature is lower than the value set this option, the fan speed change to be lowest. To set a value, Use the + or – key to change the value or enter a decimal number between 1 and 100.

→ Auto mode fan start PWM

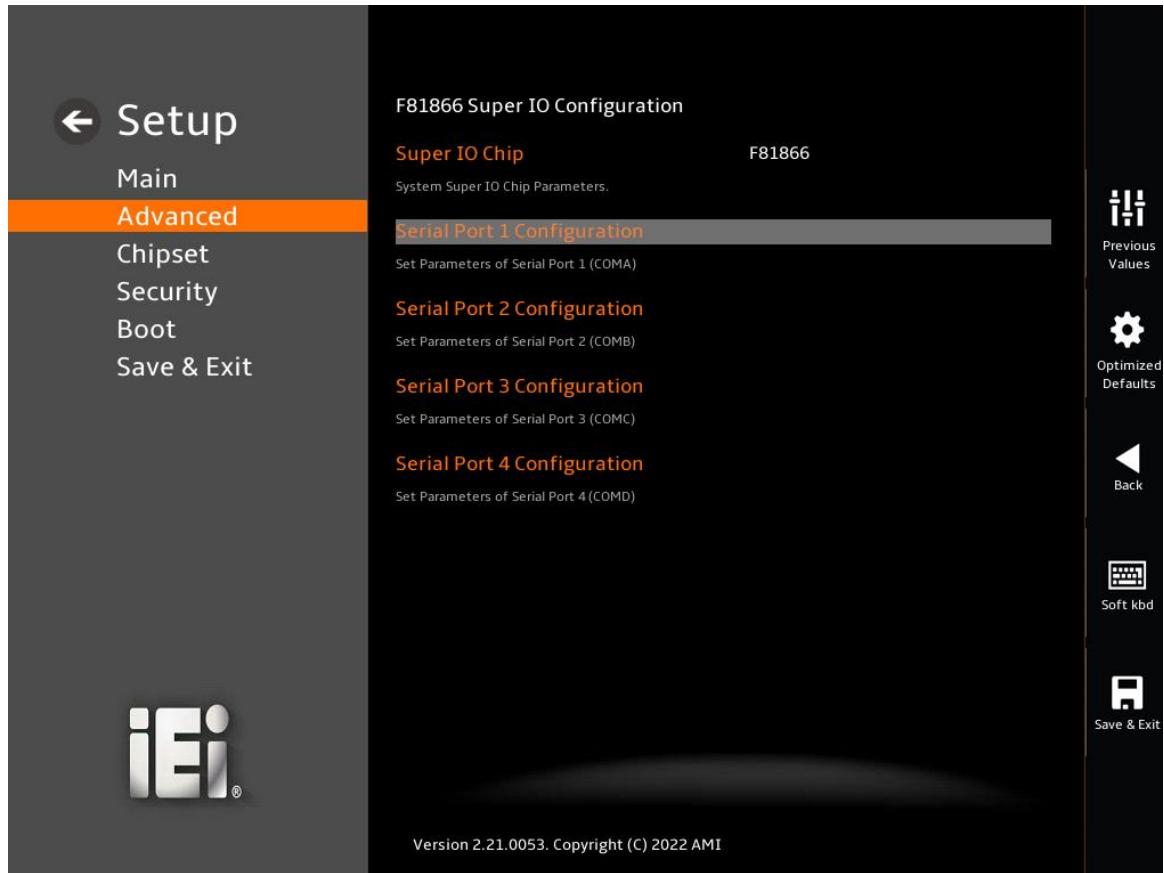
Use the **Auto mode fan Start PWM** option to set the PWM start value. Use the + or – key to change the value or enter a decimal number between 1 and 100.

→ Auto mode fan slope PWM

Use the **Auto mode fan slope PWM** option to select the linear rate at which the PWM mode increases with respect to an increase in temperature. Use the + or – key to change the value or enter a decimal number between 1 and 8

5.3.9 F81866 Super IO Configuration

Use the **F81866 Super IO Configuration** menu (**BIOS Menu 18**) to set or change the configurations for the parallel ports and serial ports.

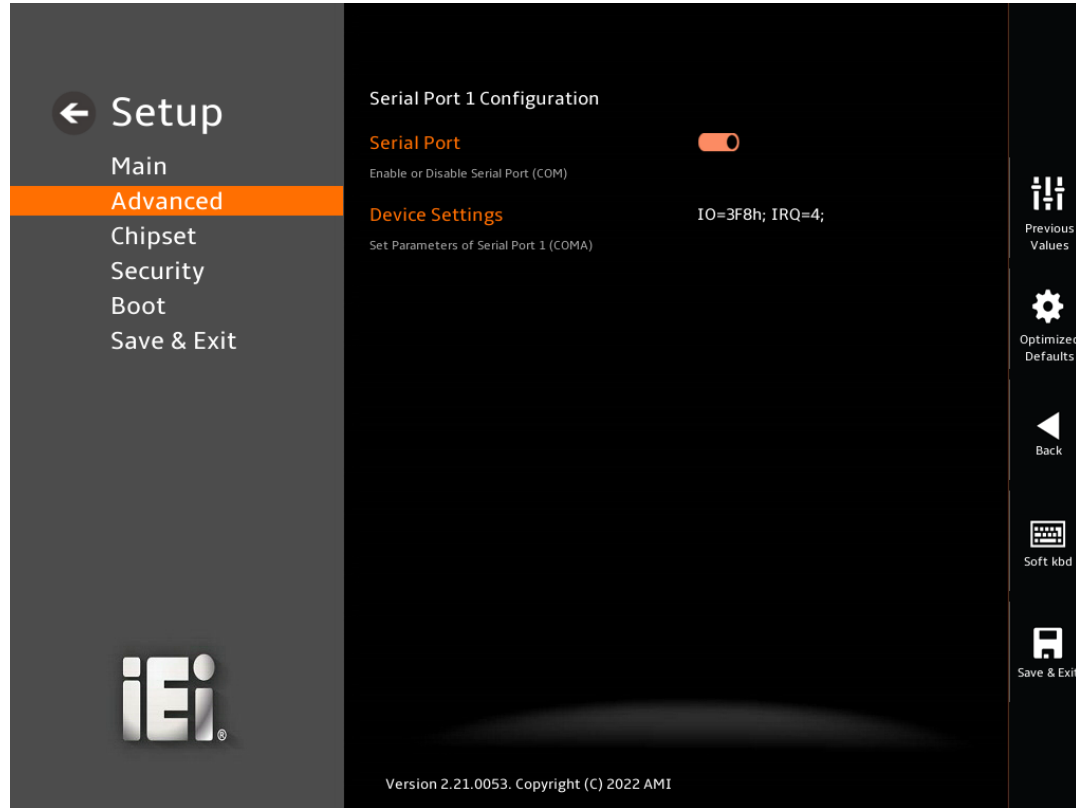


BIOS Menu 18: F81866 Super IO Configuration

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5.3.9.1 Serial Port 1 Configuration

Use the **Serial Port 1 Configuration** menu (**BIOS Menu 19**) to configure the serial port n.



BIOS Menu 19: Serial Port 1 Configuration Menu

→ Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- **Disabled** Disable the serial port
- **Enabled** **DEFAULT** Enable the serial port

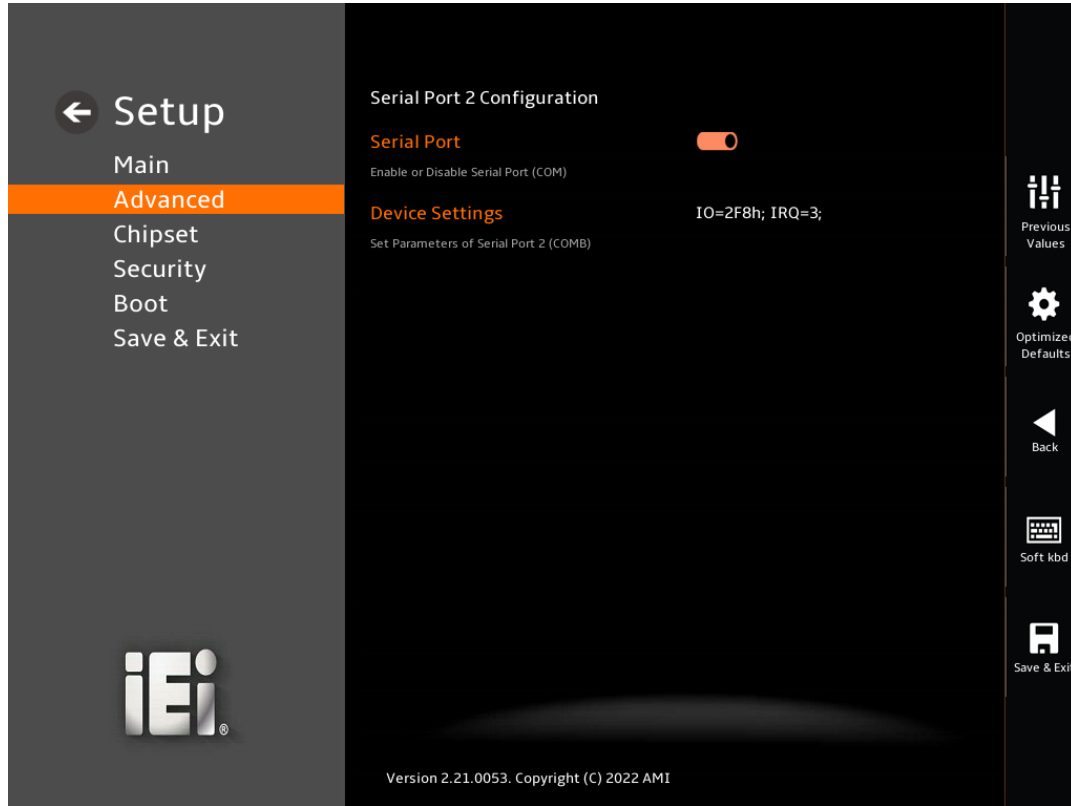
→ Device Settings

Use the **Device Settings** option to change the serial port IO port address and interrupt address.

- **IO=3F8h;** Serial Port I/O port address is 3F8h and the interrupt
IRQ=4 address is IRQ4

5.3.9.2 Serial Port 2 Configuration

Use the **Serial Port 2 Configuration** menu (**BIOS Menu 20**) to configure the serial port n.



BIOS Menu 20: Serial Port 2 Configuration Menu

➔ Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- ➔ **Disabled** Disable the serial port
- ➔ **Enabled** **DEFAULT** Enable the serial port

➔ Device Settings

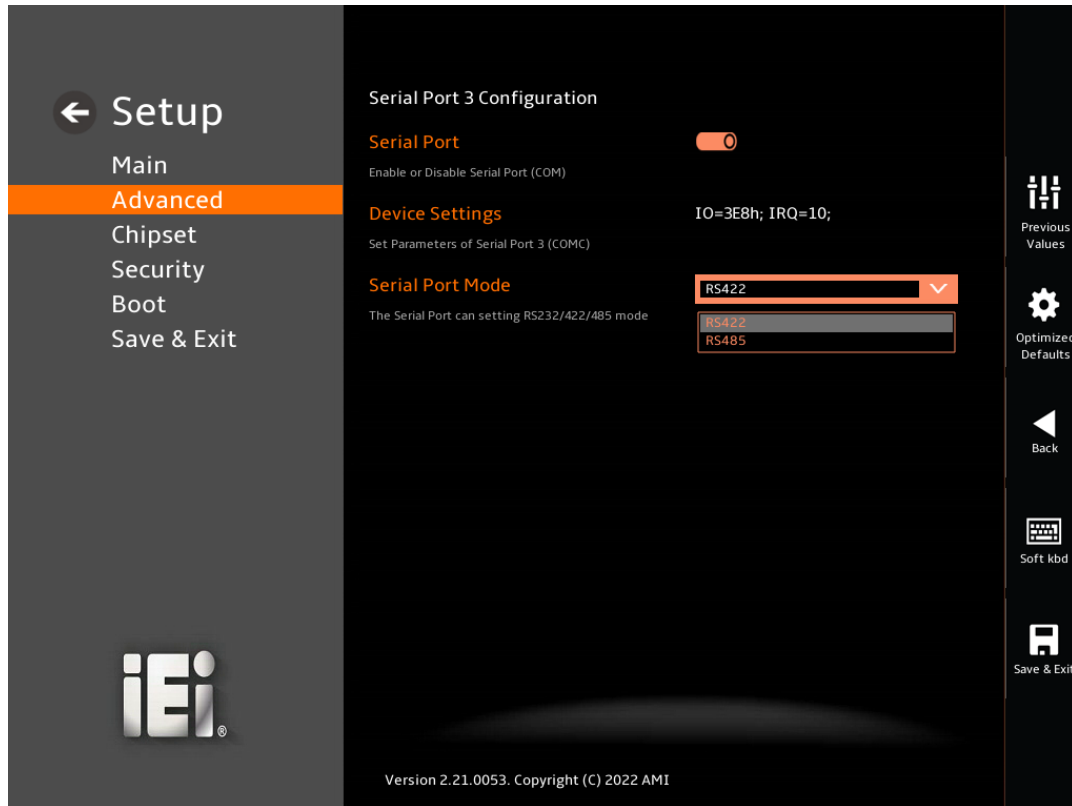
Use the **Device Settings** option to change the serial port IO port address and interrupt address.

- ➔ **IO=2F8h;** Serial Port I/O port address is 2F8h and the interrupt
IRQ=3 address is IRQ3

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5.3.9.3 Serial Port 3 Configuration

Use the **Serial Port 3 Configuration** menu (**BIOS Menu 21**) to configure the serial port 3.



BIOS Menu 21: Serial Port 3 Configuration Menu

→ Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- **Disabled** Disable the serial port
- **Enabled** **DEFAULT** Enable the serial port

→ Device Settings

Use the **Device Settings** option to change the serial port IO port address and interrupt address.

- **IO=3E8h;** Serial Port I/O port address is 3E8h and the interrupt
IRQ=10 address is IRQ10

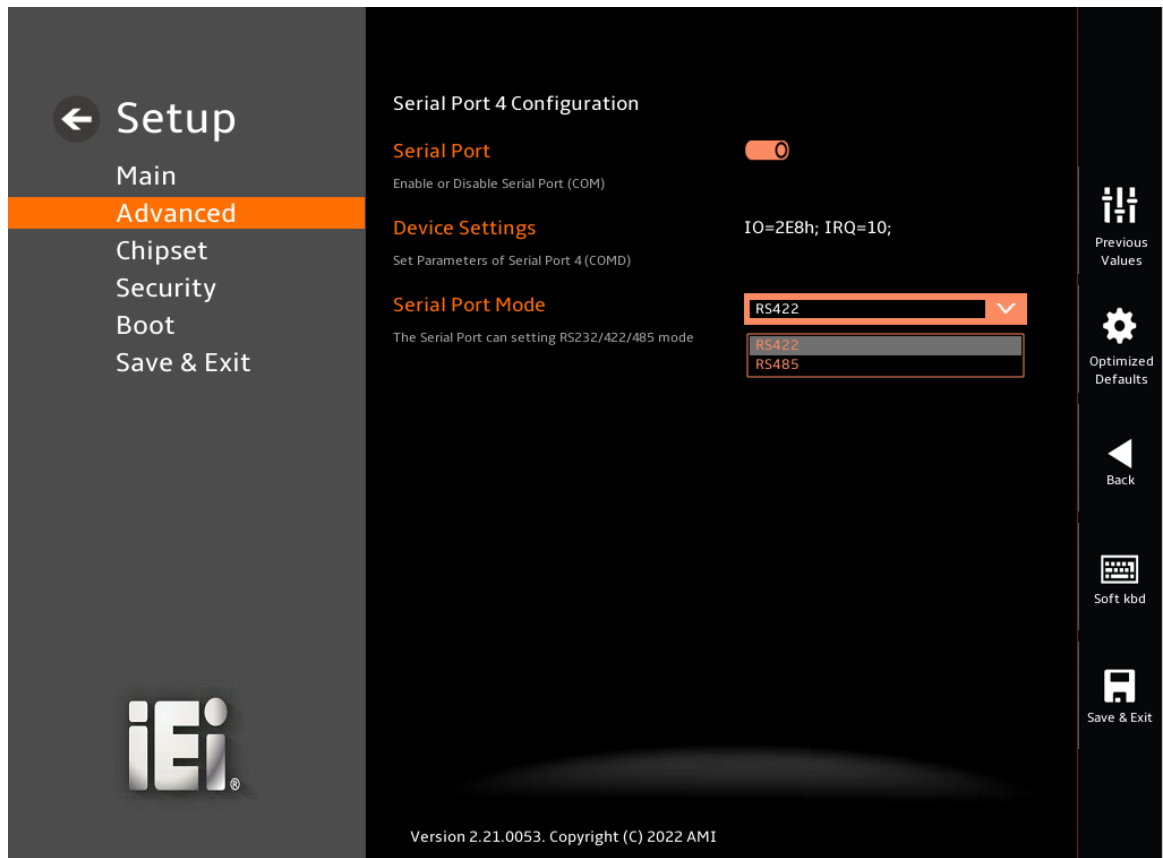
→ Serial Port Mode [RS422]

Use the **Serial Port Mode** option to set the RS-422/485 serial port mode.

- **RS422** **DEFAULT** Select the RS-422 serial port mode
- **RS485** Select the RS-485 serial port mode

5.3.9.4 Serial Port 4 Configuration

Use the **Serial Port 4 Configuration** menu (**BIOS Menu 22**) to configure the serial port 4.



BIOS Menu 22: Serial Port 4 Configuration Menu

→ Serial Port [Enabled]

Use the **Serial Port** option to enable or disable the serial port.

- **Disabled** Disable the serial port
- **Enabled** **DEFAULT** Enable the serial port

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→ Device Settings

Use the **Device Settings** option to change the serial port IO port address and interrupt address.

- **IO=2E8h;** Serial Port I/O port address is 2E8h and the interrupt
- IRQ=10** address is IRQ10

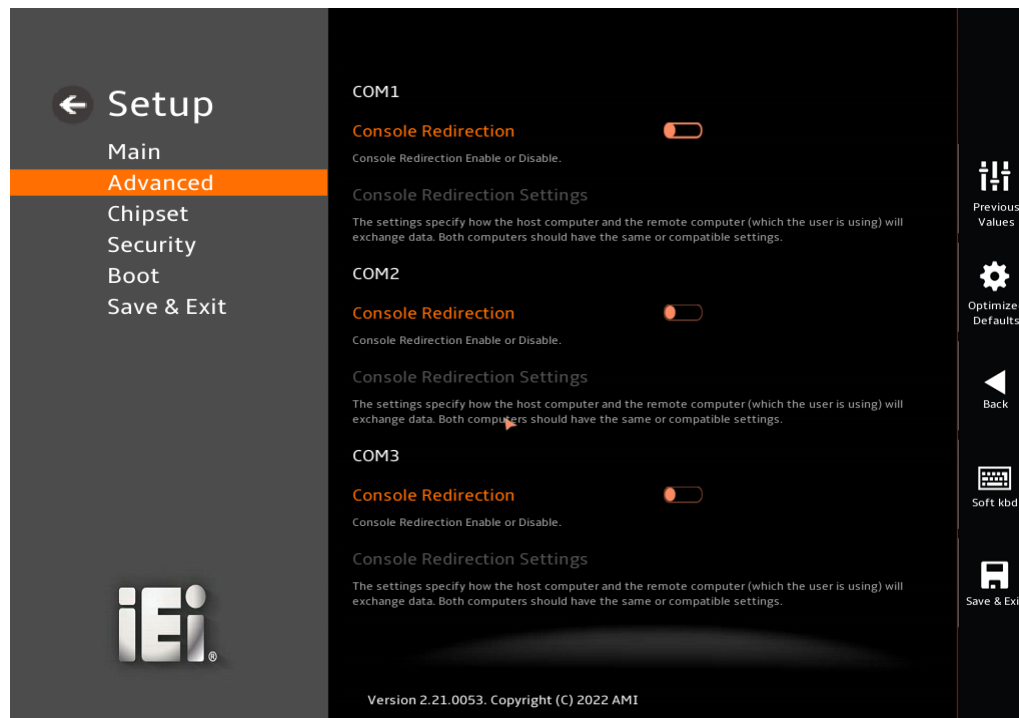
→ Serial Port Mode [RS422]

Use the **Serial Port Mode** option to set the RS-422/485 serial port mode.

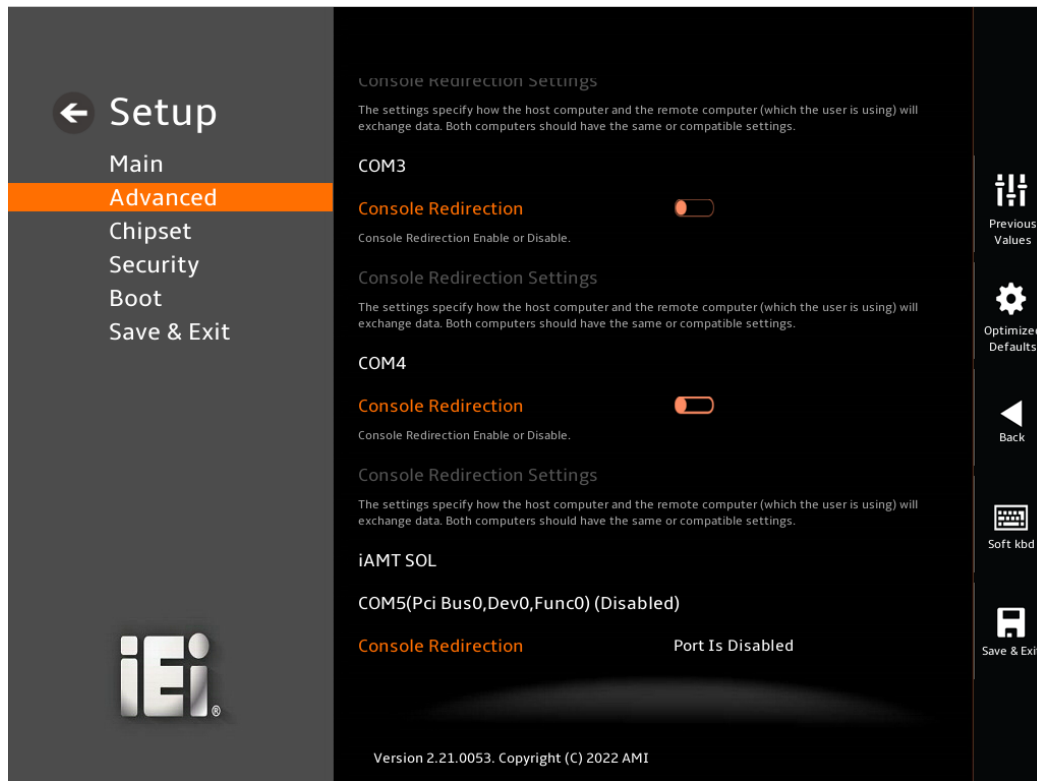
- **RS422 DEFAULT** Select the RS-422 serial port mode
- **RS485** Select the RS-485 serial port mode

5.3.10 Serial Port Console Redirection

The **Serial Port Console Redirection** menu (**BIOS Menu 23 & BIOS Menu 24**) allows the console redirection options to be configured. Console Redirection allows users to maintain a system remotely by re-directing keyboard input and text output through the serial port.



BIOS Menu 23: Serial Port Console Redirection (1/2)



BIOS Menu 24: Serial Port Console Redirection (2/2)

➔ **Console Redirection [Disabled]**

Use **Console Redirection** option to enable or disable the console redirection function.

- ➔ **Disabled** **DEFAULT** Disabled the console redirection function
- ➔ **Enabled** Enabled the console redirection function

The **Console Redirection Settings** submenu will be available when the **Console Redirection** option is enabled.

5.3.10.1 Console Redirection Settings

The following options are available in the **Console Redirection Settings** submenu (**BIOS Menu 25**) when the **COM Console Redirection** (for COM1 to COM5) option is enabled.

- 19200 Sets the serial port transmission speed at 19200.
- 38400 Sets the serial port transmission speed at 38400.
- 57600 Sets the serial port transmission speed at 57600.
- 115200 **DEFAULT** Sets the serial port transmission speed at 115200.

→ **Data Bits [8]**

Use the **Data Bits** option to specify the number of data bits.

- 7 Sets the data bits at 7.
- 8 **DEFAULT** Sets the data bits at 8.

→ **Parity [None]**

Use the **Parity** option to specify the parity bit that can be sent with the data bits for detecting the transmission errors.

- **None** **DEFAULT** No parity bit is sent with the data bits.
- **Even** The parity bit is 0 if the number of ones in the data bits is even.
- **Odd** The parity bit is 0 if the number of ones in the data bits is odd.
- **Mark** The parity bit is always 1. This option does not allow for error detection.
- **Space** The parity bit is always 0. This option does not allow for error detection.

→ **Stop Bits [1]**

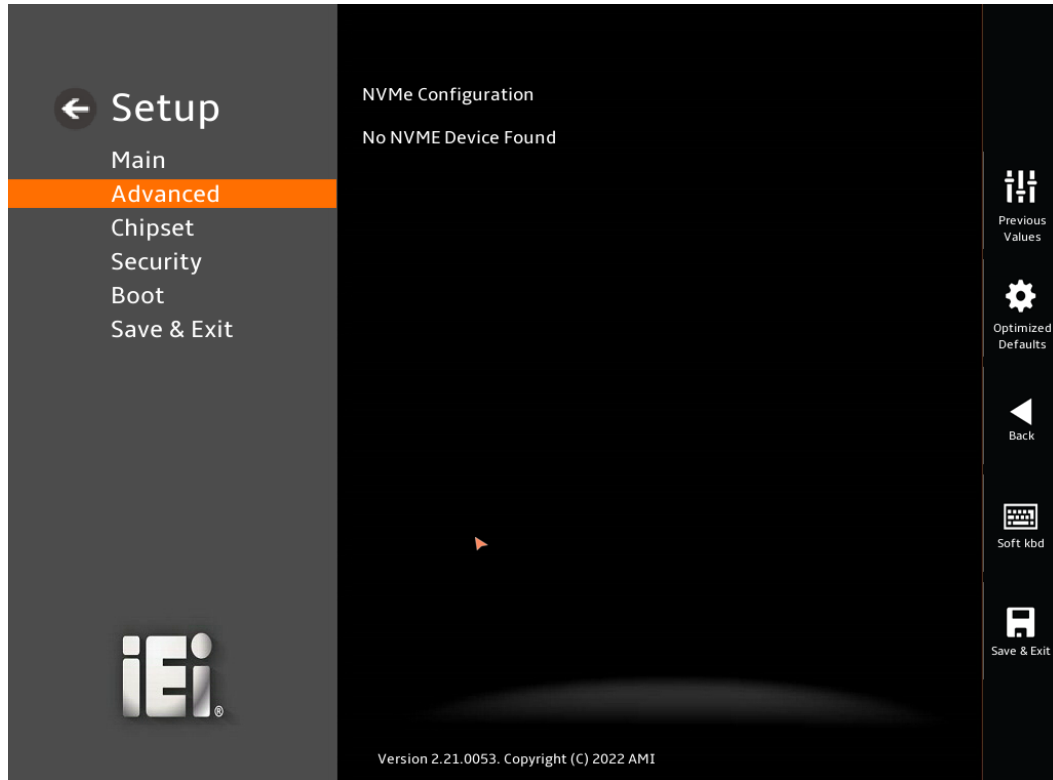
Use the **Stop Bits** option to specify the number of stop bits used to indicate the end of a serial data packet. Communication with slow devices may require more than 1 stop bit.

- 1 **DEFAULT** Sets the number of stop bits at 1.
- 2 Sets the number of stop bits at 2.

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5.3.11 NVMe Configuration

Use the **NVMe Configuration (BIOS Menu 26)** menu to display the NVMe controller and device information.



BIOS Menu 26: NVMe Configuration

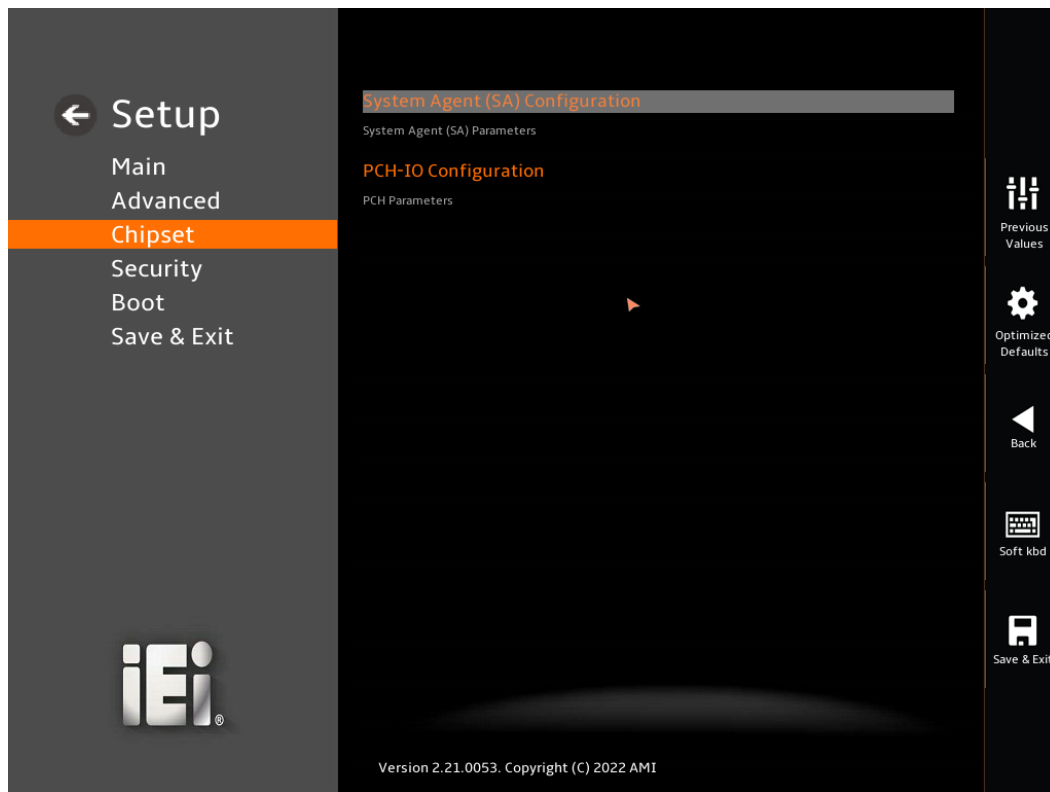
5.4 Chipset

Use the **Chipset** menu (**BIOS Menu 27**) to access the PCH IO and System Agent (SA) configuration menus.



WARNING!

Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.

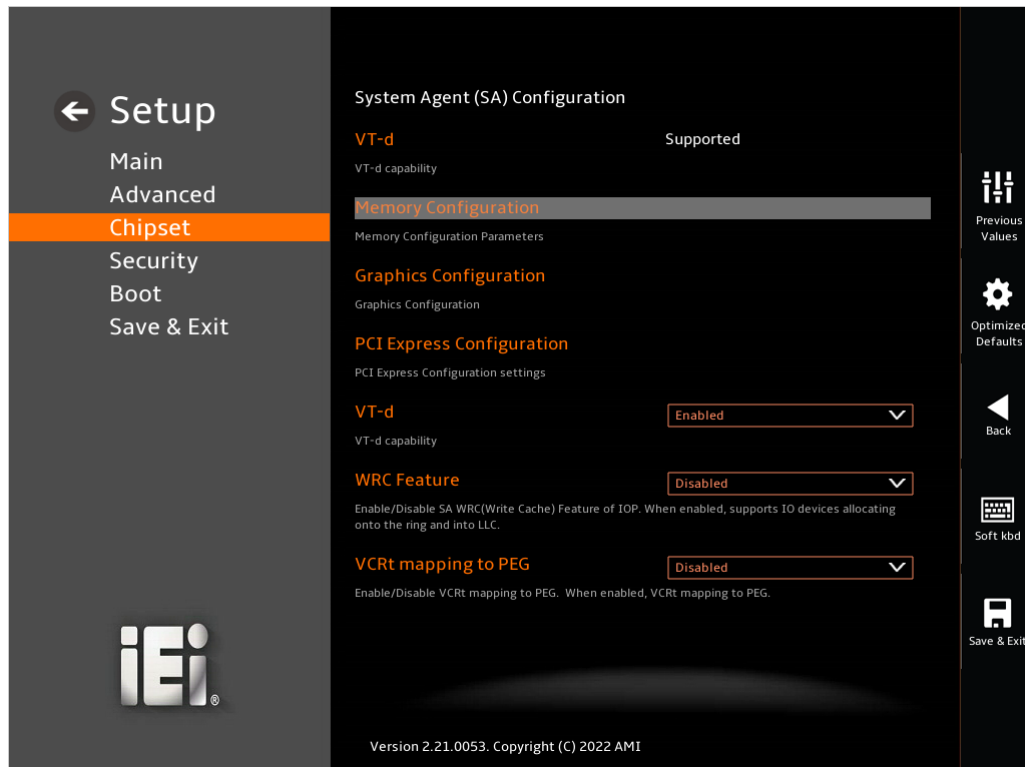


BIOS Menu 27: Chipset

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5.4.1 System Agent (SA) Configuration

Use the **System Agent (SA) Configuration** menu (**BIOS Menu 28**) to configure the System Agent (SA) parameters.



BIOS Menu 28: System Agent (SA) Configuration

→ VT-d [Enabled]

Use the **VT-d** option to enable or disable the VT-d capability.

- **Disabled** Disable the VT-d capability
- **Enabled** **DEFAULT** Enable the VT-d capability

→ WRC Feature [Enabled]

Use the **WRC Feature** option to enable or disable the capability of writing cache.

- **Disabled** Disable the WRC Feature capability
- **Enabled** **DEFAULT** Enable the WRC Feature capability

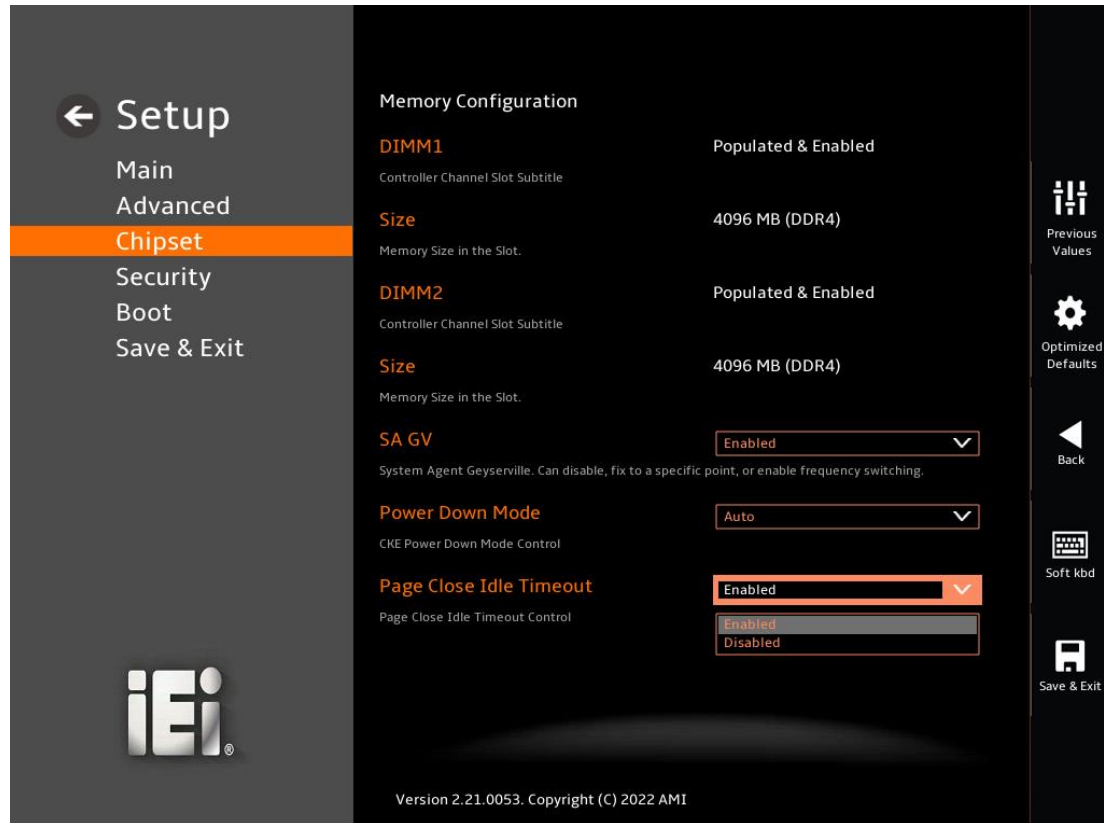
➔ **VCRt mapping to PEG [Enabled]**

Use the **VCRt mapping to PEG** option to enable or disable the VCRt mapping to PEG capability.

- ➔ **Disabled** Disable the VCRt capability
- ➔ **Enabled** **DEFAULT** Enable the VCRt capability

5.4.1.1 Memory Configuration

Use the **Memory Configuration** submenu (**BIOS Menu 29**) to view memory information.

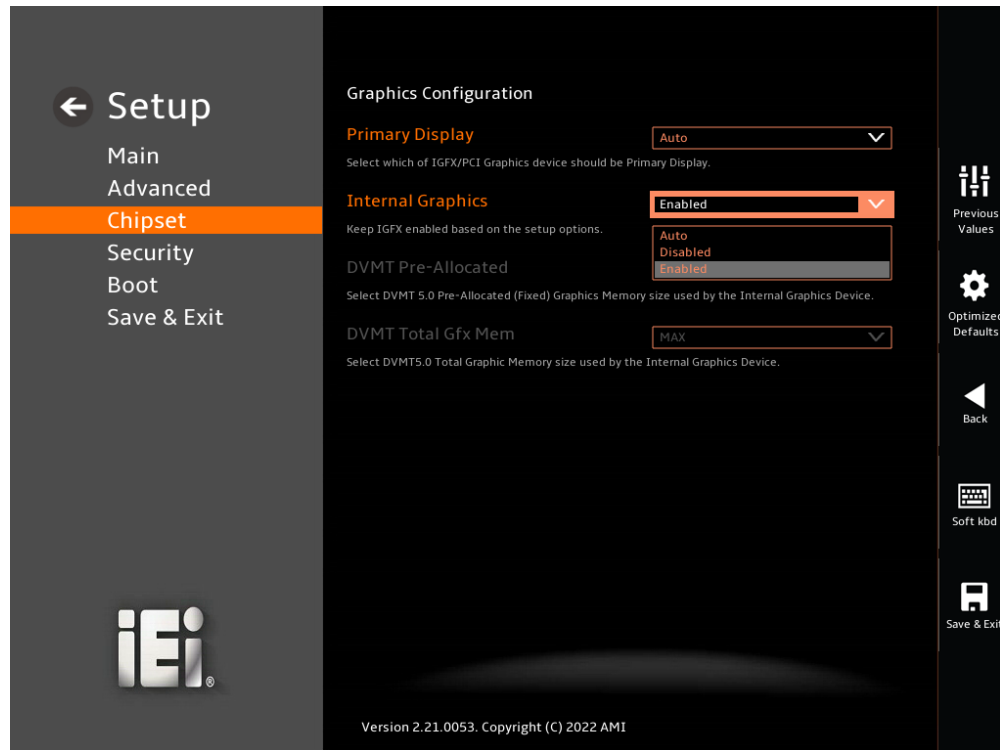


BIOS Menu 29: Memory Configuration

DRPC-240-TGL Embedded System

5.4.1.2 Graphics Configuration

Use the **Graphics Configuration (BIOS Menu 30)** menu to configure the video device connected to the system.



BIOS Menu 30: Graphics Configuration

→ Primary Display [Auto]

Use the **Primary Display** option to select the primary graphics controller the system uses.

The following options are available:

- Auto **Default**
- IGFX
- PEG
- PCI
- SG

→ Internal Graphics [Enabled]

Use the **Internal Graphics** option to configure whether to keep IGFX enabled. If user wants to support dual display by internal graphics and external graphics, this Internal Graphics

option should be set to Enabled and the above Primary Display option should be set to IGFX.

- **Auto** Auto mode
- **Disabled** Disables IGFX.
- **Enabled** **Default** Enables IGFX.

→ **DVMT Pre-Allocated [32M]**

Use the **DVMT Pre-Allocated** option to set the amount of system memory allocated to the integrated graphics processor when the system boots. The system memory allocated can then only be used as graphics memory, and is no longer available to applications or the operating system. Configuration options are listed below:

- 32M
- 64M **Default**

→ **DVMT Total Gfx Mem [256M]**

Use the **DVMT Total Gfx Mem** option to select DVMT5.0 total graphic memory size used by the internal graphic device. The following options are available:

- 128M
- 256M
- MAX **Default**

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5.4.1.3 PCI Express Configuration

Use the **PCI Express Configuration** menu (**BIOS Menu 32**) to configure the PCI Express Configuration settings.



BIOS Menu 31: PEG Port Configuration

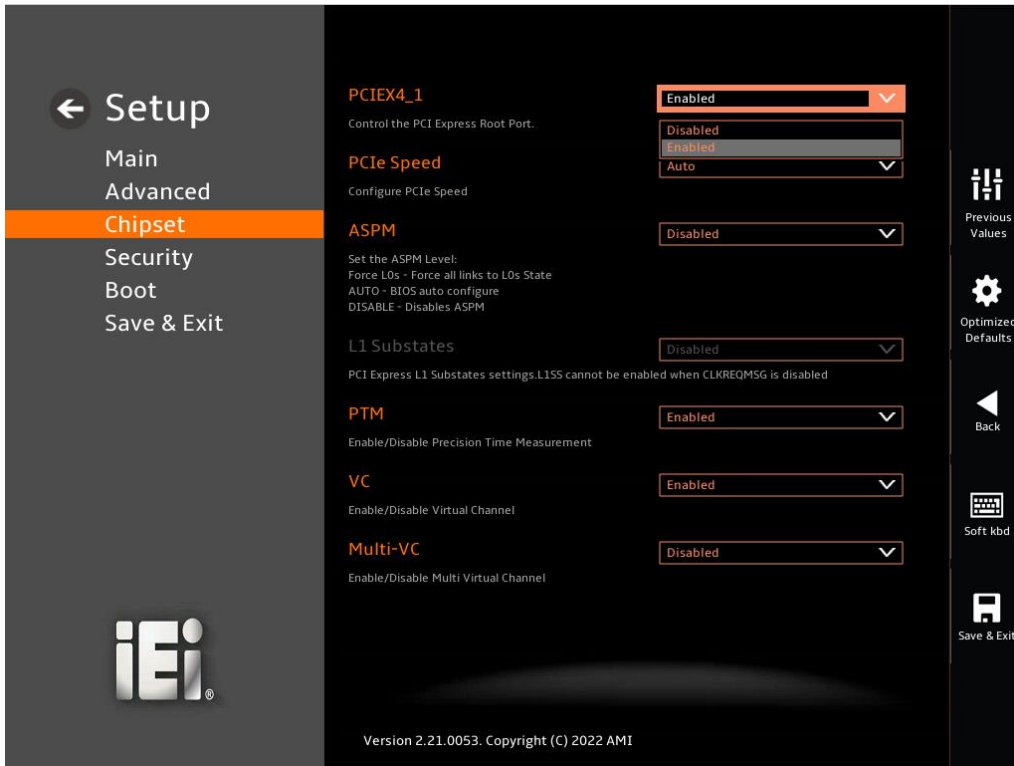
→ PCI Express Clock Gating [Enabled]

Use the **PCI Express Clock Gating** option to enable or disable the PCI Express Clock Gating capability for each root port.

- | | | | |
|---|-----------------|----------------|--|
| → | Disabled | | Disables the PCI Express Clock Gating Capability |
| → | Enabled | DEFAULT | Enables the PCI Express Clock Gating Capability |

5.4.1.3.1 PCIEX4_1

Use the **PCIEX4_1** submenu (**BIOS Menu 32**) to control the PCI Express Root Port.



BIOS Menu 32: PCIEX4_1

➔ **PCIEX4_1 [Enabled]**

Use the **PCIEX4_1** option to enable or disable the PCIEX4_1 capability.

- ➔ **Disabled** Disable the PCIEX4_1 capability
- ➔ **Enabled** **DEFAULT** Enable the PCIEX4_1 capability

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed. Configuration options are listed below.

- ➔ **Auto** **DEFAULT** Auto mode.
- ➔ **Gen1** Configure PCIe Speed to Gen1.

DRPC-240-TGL Embedded System

- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.
- ➔ **Gen4** Configure PCIe Speed to Gen4

➔ **ASPM [Disabled]**

Use the **ASPM** option to set the ASPM level. Configuration options are listed below.

- ➔ **Disabled** **DEFAULT** Disables ASPM
- ➔ **L1** Set L1 Level

➔ **PTM [Disabled]**

Use the **PTM** option to enable or disable the Precision Time Measurement. Configuration options are listed below.

- ➔ **Disabled** **DEFAULT** Disables the PTM Technology
- ➔ **Enabled** Enables the PTM Technology

➔ **VC [Disabled]**

Use the **VC** option to enable or disable the Virtual Channel. Configuration options are listed below.

- ➔ **Disabled** **DEFAULT** Disables the PTM Technology
- ➔ **Enabled** Enables the PTM Technology

The following options are available when the **VC** option is enabled.

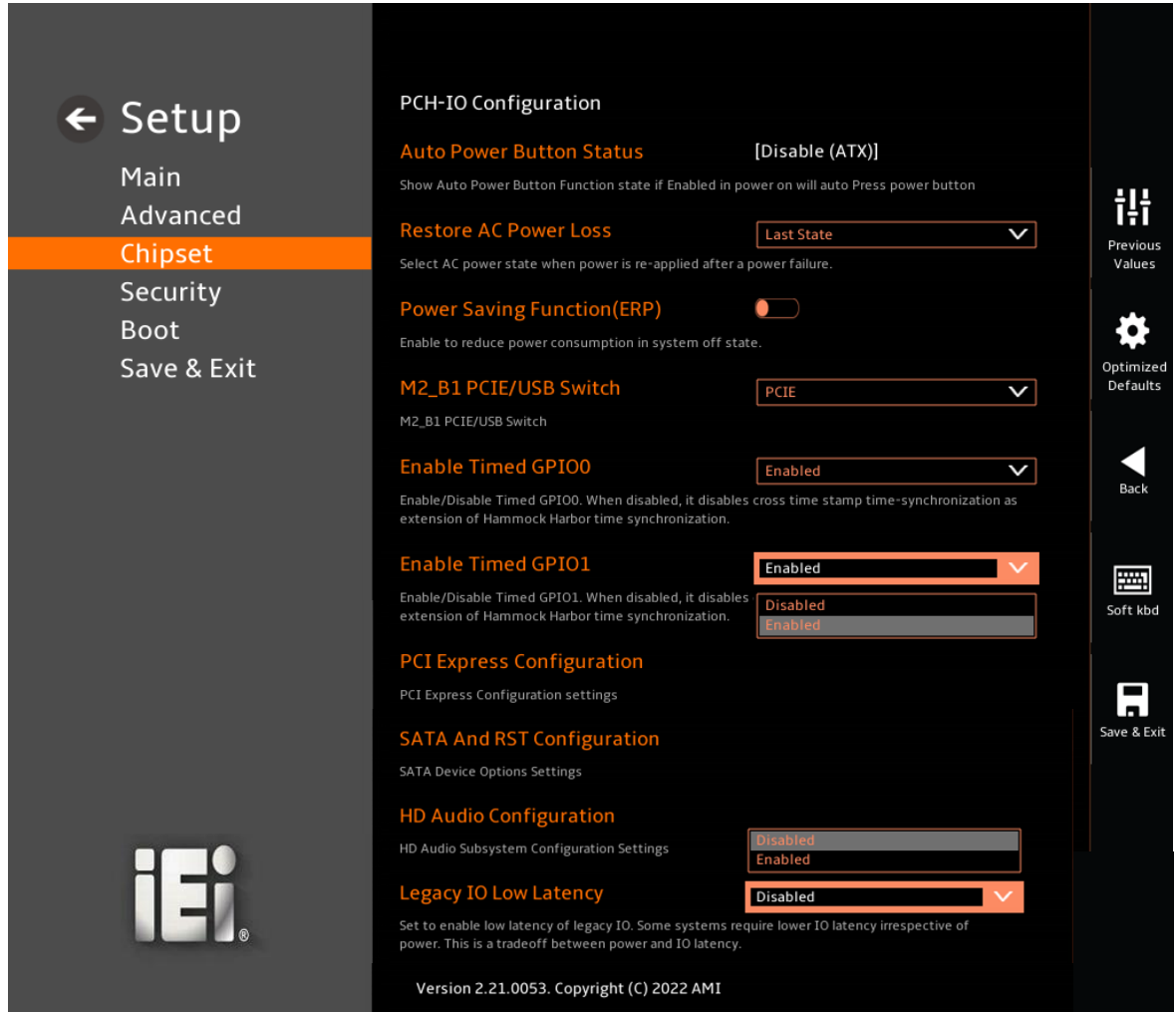
➔ **Multi-VC [Disabled]**

Use the **Multi-VC** option to enable or disable the Multi Virtual Channel. Configuration options are listed below.

- ➔ **Disabled** **DEFAULT** Disables the Multi-VC Technology
- ➔ **Enabled** Enables the Multi-VC Technology

5.4.2 PCH-IO Configuration

Use the **PCH-IO Configuration** menu (**BIOS Menu 33**) to configure the PCH parameters.



BIOS Menu 33: PCH-IO Configuration

➔ Auto Power Button Function [Disabled (ATX)]

Use the **Auto Power Button Function** BIOS option to show the power mode state. Use the **J_ATX_AT1** to switch the AT/ATX power mode.

- ➔ **Enabled (AT)** The system power mode is AT.
- ➔ **Disabled (ATX)** The system power mode is ATX.

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→ Restore AC Power Loss [Last State]

Use the **Restore AC Power Loss** BIOS option to specify what state the system returns to if there is a sudden loss of power to the system when the power mode is ATX.

- **Power Off** The system remains turned off
- **Power On** The system turns on
- **Last State** **DEFAULT** The system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

→ Power Saving Function(EUP) [Disabled]

Use the **Power Saving Function(EUP)** BIOS option to enable or disable the power saving function.

- **Disabled** **DEFAULT** Power saving function is disabled.
- **Enabled** Power saving function is enabled. It will reduce power consumption when the system is off.

→ M2_B1 PCIE/USB Switch

Use the **M2_B1 PCIE/USB Switch** BIOS option to select the PCIE or the USB signal from the M2_B1 socket.

- **PCIE** Select the PCIE signal
- **USB** Select the USB signal

→ Enable Timed GPIO0 [Disabled]

Use the **Enable Timed GPIO0** BIOS option to enable or disable the cross time, stamp time as extension of Hammock Harbor time synchronization.

- **Disabled** **DEFAULT** Timed GPIO0 capability is disabled.
- **Enabled** Timed GPIO0 capability is enabled.

→ **Enable Timed GPIO1 [Disabled]**

Use the **Enable Timed GPIO1** BIOS option to enable or disable the cross time, stamp time as extension of Hammock Harbor time synchronization.

→ **Disabled** **DEFAULT** Timed GPIO1 capability is disabled.

→ **Enabled** Timed GPIO1 capability is enabled.

→ **Legacy IO Low Latency [Disabled]**

Use the **Legacy IO Low Latency** BIOS option to enable or disable the Legacy IO Low Latency which is a tradeoff between power and IO latency.

→ **Disabled** **DEFAULT** Legacy IO Low Latency technology is disabled.

→ **Enabled** Legacy IO Low Latency technology is enabled.

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5.4.2.1 PCI Express Configuration

Use the **PCI Express Configuration** submenu (**BIOS Menu 34**) to configure the PCI Express Root Port Settings.



BIOS Menu 34: PCI Express Configuration

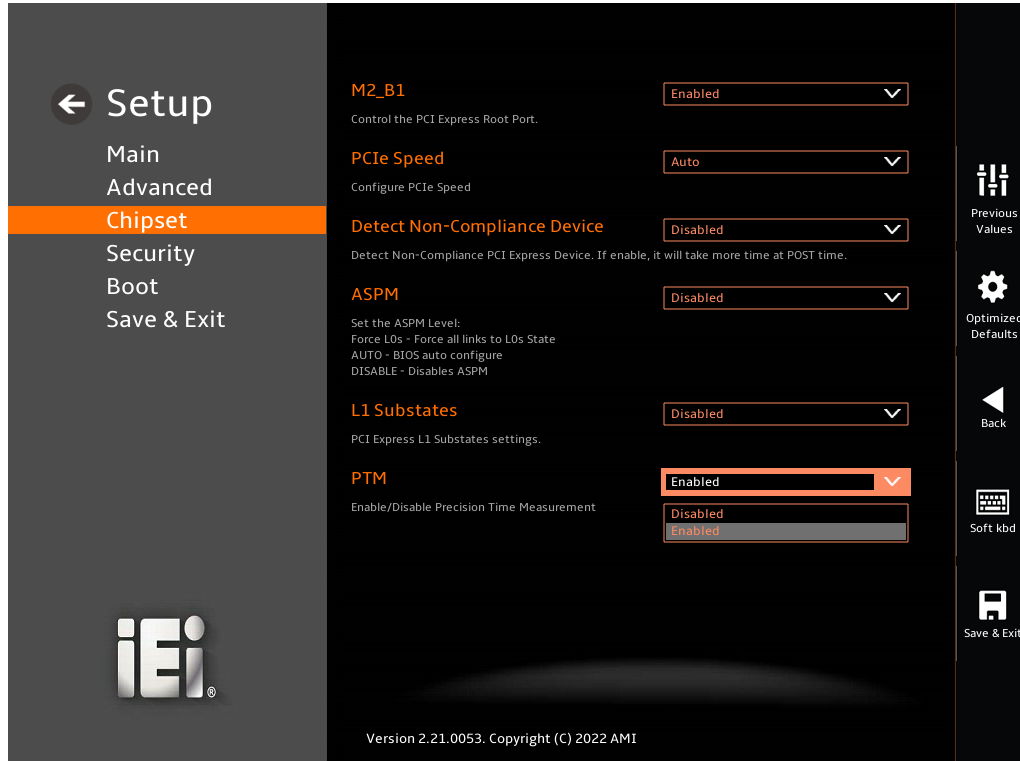
→ DMI Link ASPM Control [Auto]

Use the **DMI Link ASPM Control** option to control the Active State Power Management of the DMI Link.

- | | | | |
|---|-----------------|----------------|-----------------------|
| → | Disabled | DEFAULT | Auto mode. |
| → | L0s | | Select the L0s mode. |
| → | L1 | | Select the L1 mode |
| → | L0sL1 | | Select the L0sL1 mode |
| → | Auto | | Select the Auto mode |

5.4.2.1.1 M2_B1

Use the **M2_B1** submenu (**BIOS Menu 35**) to configure the M2_B1 PCI Root Port Setting.



BIOS Menu 35: PCIe Slot Configuration Submenu

➔ **M2_B1 [Enabled]**

Use the **M2_B1** option to enable or disable the PCI Express configuration of M.2 socket.

- ➔ **Disabled** Disable the M2_B1 capability
- ➔ **Enabled** **DEFAULT** Enable the M2_B1 capability

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed.

- ➔ **Auto** **DEFAULT** Auto mode.
- ➔ **Gen1** Configure PCIe Speed to Gen1.
- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.

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→ Detect Non-Compliance Device [Disabled]

Use the **Detect Non-Compliance Device** option to configure whether to detect if a non-compliance PCI Express device is connected to the PCI Express port.

- | | | | |
|---|-----------------|----------------|--|
| → | Disabled | DEFAULT | Do not detect if a non-compliance PCI Express device is connected to the PCI Express port. |
| → | Enabled | | Detect if a non-compliance PCI Express device is connected to the PCI Express port. |

→ ASPM [Disabled]

Use the **ASPM** option to set the ASPM level. Configuration options are listed below.

- | | | | |
|---|-----------------|----------------|-----------------------|
| → | Disabled | DEFAULT | Auto mode. |
| → | L0s | | Select the L0s mode. |
| → | L1 | | Select the L1 mode |
| → | L0sL1 | | Select the L0sL1 mode |
| → | Auto | | Select the Auto mode |

→ L1 Substates [Disabled]

Use the **L1 Substates** option to select the PCI Express L1 Substates settings. Configuration options are listed below.

- | | | | |
|---|------------------------|----------------|------------|
| → | Disabled | DEFAULT | Auto mode. |
| → | L1.1 | | |
| → | L1.1 & L1.2 | | |

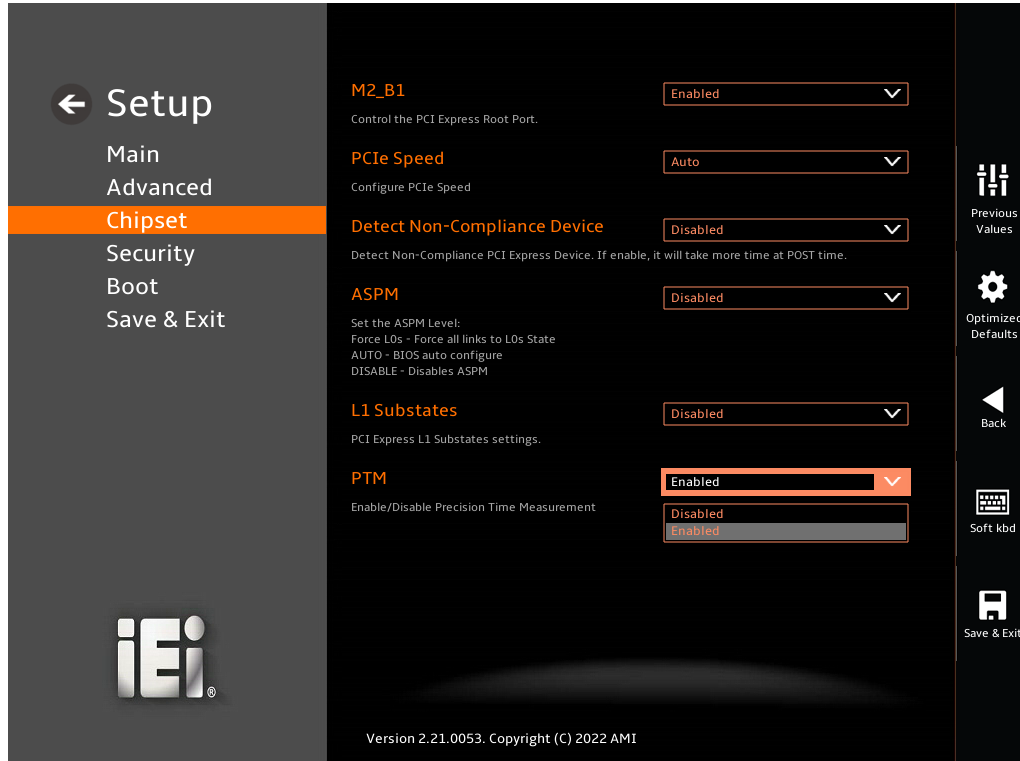
→ PTM [Disabled]

Use the **PTM** option to enable or disable the Precision Time Measurement. Configuration options are listed below.

- | | | | |
|---|-----------------|----------------|-----------------------------|
| → | Disabled | DEFAULT | Disables the PTM Technology |
| → | Enabled | | Enables the PTM Technology |

5.4.2.1.2 M2_A1

Use the **M2_A1** submenu (**BIOS Menu 35**) to configure the M2_A1 PCI Root Port Setting.



BIOS Menu 36: PCIe Slot Configuration Submenu

➔ **M2_A1 [Enabled]**

Use the **M2_A1** option to enable or disable the PCI Express configuration of M.2 socket.

- ➔ **Disabled** Disable the M2_A1 capability
- ➔ **Enabled** **DEFAULT** Enable the M2_A1 capability

➔ **PCIe Speed [Auto]**

Use the **PCIe Speed** option to specify the PCI Express port speed.

- ➔ **Auto** **DEFAULT** Auto mode.
- ➔ **Gen1** Configure PCIe Speed to Gen1.
- ➔ **Gen2** Configure PCIe Speed to Gen2.
- ➔ **Gen3** Configure PCIe Speed to Gen3.

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→ Detect Non-Compliance Device [Disabled]

Use the **Detect Non-Compliance Device** option to configure whether to detect if a non-compliance PCI Express device is connected to the PCI Express port.

- | | | | |
|---|-----------------|----------------|--|
| → | Disabled | DEFAULT | Do not detect if a non-compliance PCI Express device is connected to the PCI Express port. |
| → | Enabled | | Detect if a non-compliance PCI Express device is connected to the PCI Express port. |

→ ASPM [Disabled]

Use the **ASPM** option to set the ASPM level. Configuration options are listed below.

- | | | | |
|---|-----------------|----------------|-----------------------|
| → | Disabled | DEFAULT | Auto mode. |
| → | L0s | | Select the L0s mode. |
| → | L1 | | Select the L1 mode |
| → | L0sL1 | | Select the L0sL1 mode |
| → | Auto | | Select the Auto mode |

→ L1 Substates [Disabled]

Use the **L1 Substates** option to select the PCI Express L1 Substates settings. Configuration options are listed below.

- | | | | |
|---|------------------------|----------------|------------|
| → | Disabled | DEFAULT | Auto mode. |
| → | L1.1 | | |
| → | L1.1 & L1.2 | | |

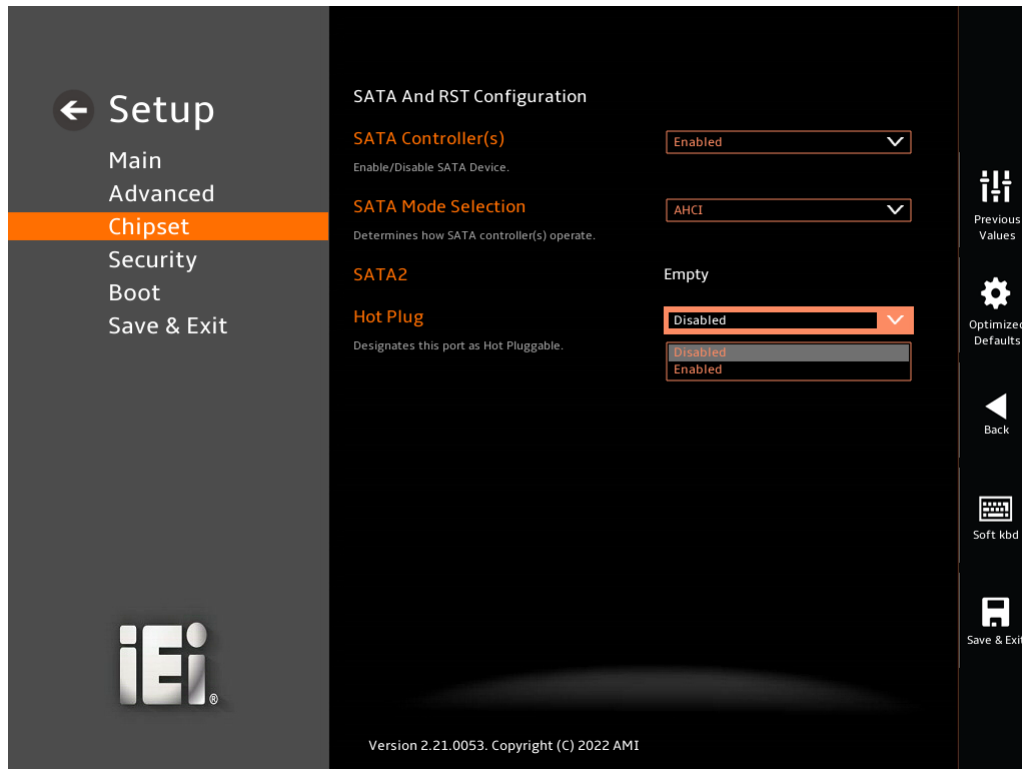
→ PTM [Disabled]

Use the **PTM** option to enable or disable the Precision Time Measurement. Configuration options are listed below.

- | | | | |
|---|-----------------|----------------|-----------------------------|
| → | Disabled | DEFAULT | Disables the PTM Technology |
| → | Enabled | | Enables the PTM Technology |

5.4.2.2 SATA And RST Configuration

Use the **SATA And RST Configuration** menu (**BIOS Menu 37**) to change and/or set the configuration of the SATA devices installed in the system.



BIOS Menu 37: SATA Configuration

➔ SATA Controller(s) [Enabled]

Use the **SATA Controller(s)** option to configure the SATA controller(s).

- ➔ **Enabled** **DEFAULT** Enables the on-board SATA controller(s).
- ➔ **Disabled** Disables the on-board SATA controller(s).

➔ SATA Mode Selection [AHCI]

Use the **SATA Mode Selection** option to determine how the SATA devices operate.

- ➔ **AHCI** **DEFAULT** Configures SATA devices as AHCI device.

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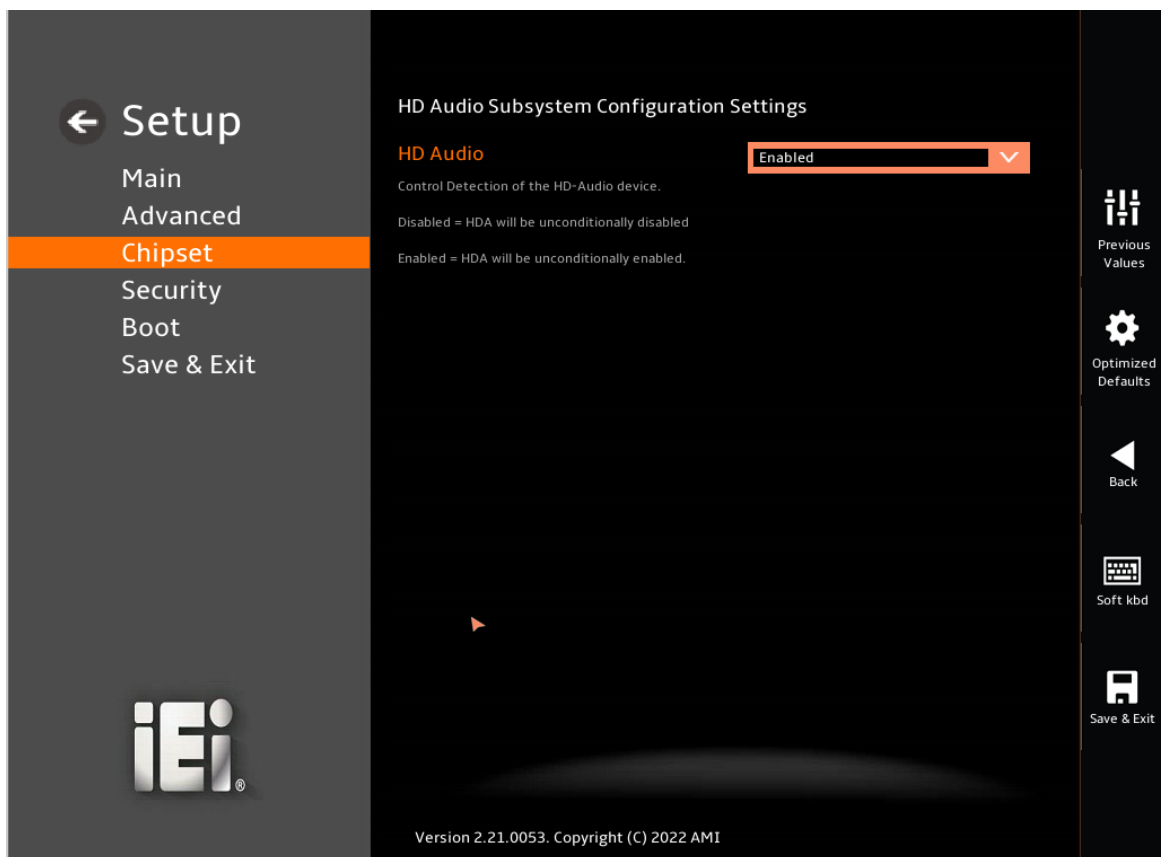
→ Hot Plug [Disabled]

Use the **Hot Plug** option to designate the correspondent port as hot-pluggable.

- **Disabled** **DEFAULT** Disables the hot-pluggable function of the SATA port.
- **Enabled** Designates the SATA port as hot-pluggable.

5.4.2.3 HD Audio Configuration

Use the **HD Audio Configuration** menu (**BIOS Menu 38**) to configure the HD Audio Subsystem settings.



BIOS Menu 38: HD Audio Configuration

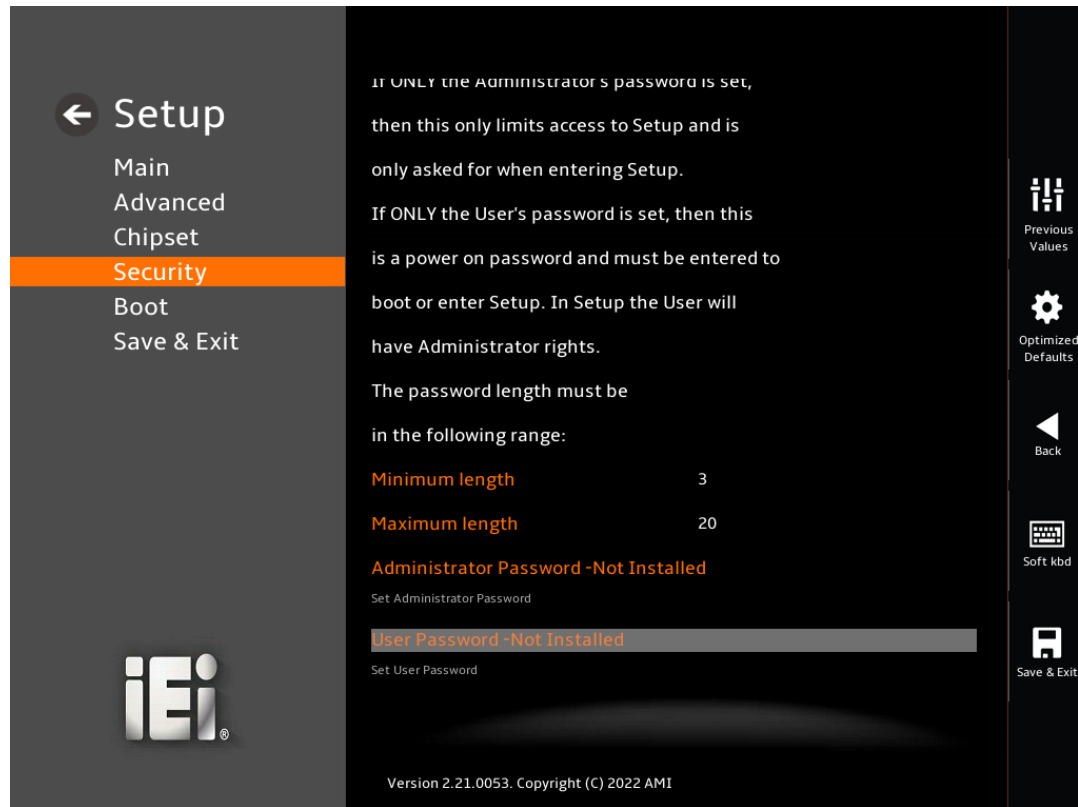
→ HD Audio [Auto]

Use the **HD Audio** option to enable or disable the High Definition Audio controller.

- **Disabled** The onboard High Definition Audio controller is disabled.
- **Enabled** **DEFAULT** The onboard High Definition Audio controller is enabled.

5.5 Security

Use the **Security** menu (**BIOS Menu 39**) to set system and user passwords.



BIOS Menu 39: Security

→ Administrator Password

Use the **Administrator Password** to set or change a administrator password.

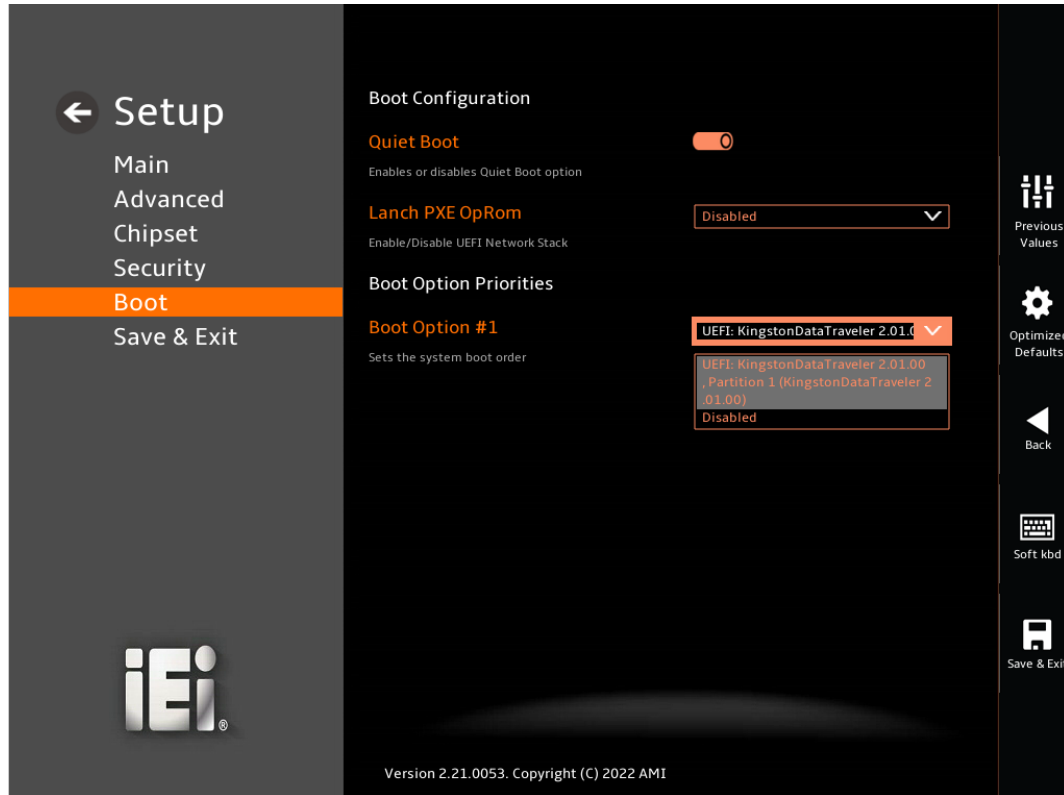
→ User Password

Use the **User Password** to set or change a user password.

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5.6 Boot

Use the **Boot** menu (**BIOS Menu 40**) to configure system boot options.



BIOS Menu 40: Boot Menu

5.6.1 Boot Configuration

➔ Quiet Boot [Enabled]

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

- ➔ **Disabled** Normal POST messages displayed
- ➔ **Enabled** **DEFAULT** OEM Logo displayed instead of POST messages

➔ Launch PXE OpROM [Disabled]

Use the **Launch PXE OpROM** option to enable or disable boot option for legacy network devices.

- **Disabled** **DEFAULT** Ignore all PXE Option ROMs
- **Enabled** Load PXE Option ROMs.

5.6.2 Boot Option Priorities

Use the Boot Option # N to choose the system boots from the peripherals you selected
The following Boot Options are listed as an example.

→ **Boot Option #1**

Sets the system boot order **UEFI: KingstonDataTraveler2.0** as the second priority.

- **UEFI: KingstonDataTraveler2.0, Partition 1**
- **Disabled**

→ **Boot Option #2**

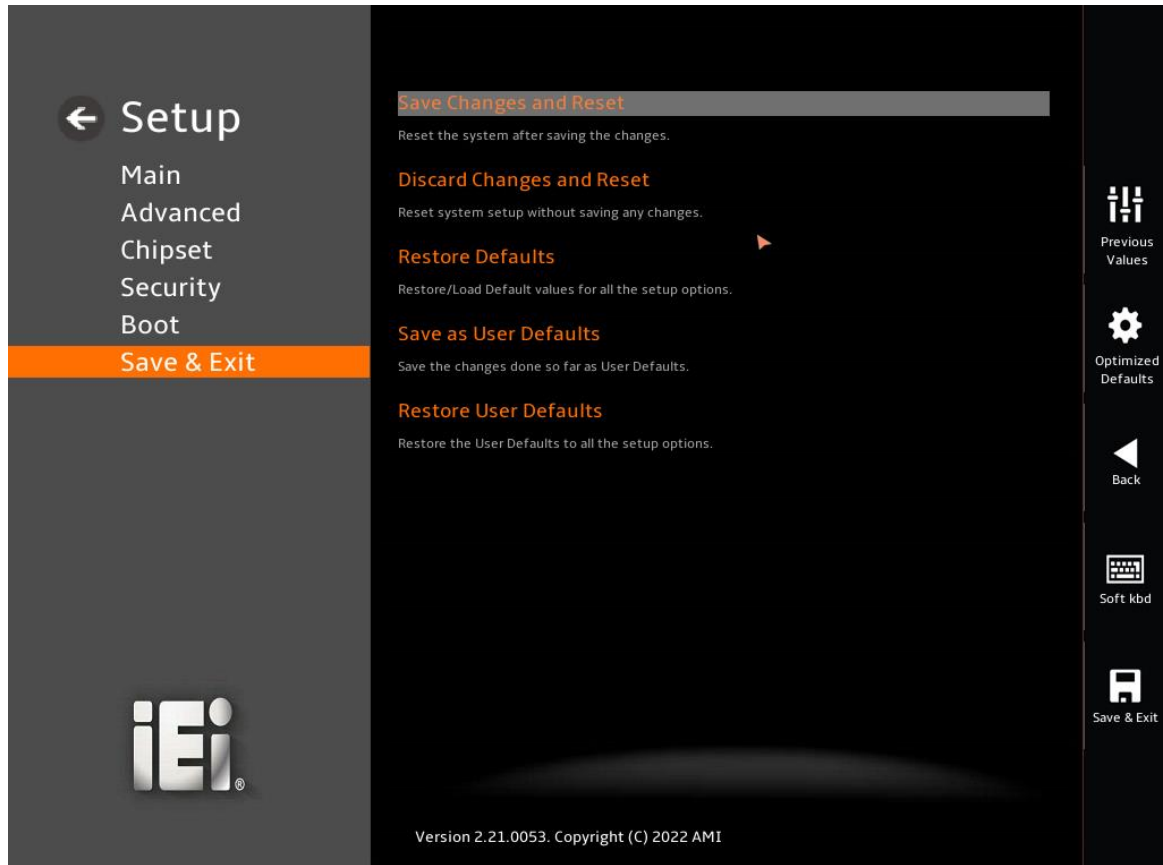
Sets the system boot order **ADATA SP580** as the first priority.

- **Windows Boot Manager (P1: ADATA SSD SP580 240GB)**
- **Disabled**

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5.7 Save & Exit

Use the **Safe & Exit** menu (**BIOS Menu 41**) to load default BIOS values, optimal failsafe values and to save configuration changes.

**BIOS Menu 41: Save & Exit****→ Save Changes and Reset**

Use the **Save Changes and Reset** option to save the changes made to the BIOS options and reset the system.

→ Discard Changes and Reset

Use the **Discard Changes and Reset** option to exit the system without saving the changes made to the BIOS configuration setup program.

→ **Restore Defaults**

Use the **Restore Defaults** option to load the optimal default values for each of the parameters on the Setup menus. **F3 key can be used for this operation.**

→ **Save as User Defaults**

Use the **Save as User Defaults** option to save the changes done so far as user defaults.

→ **Restore User Defaults**

Use the **Restore User Defaults** option to restore the user defaults to all the setup options.

Appendix

A

Safety Precautions

A.1 Safety Precautions



WARNING:

The precautions outlined in this appendix should be strictly followed. Failure to follow these precautions may result in permanent damage to the DRPC-240-TGL.

Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Make sure the power is turned off and the power cord is disconnected*** when moving, installing or modifying the system.
- ***Do not apply voltage levels that exceed the specified voltage range.*** Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if opened while still powered on.
- ***Do not drop or insert any objects*** into the ventilation openings.
- ***If considerable amounts of dust, water, or fluids enter the system***, turn off the power supply immediately, unplug the power cord, and contact the system vendor.
- ***This equipment is not suitable for use in locations where children are likely to be present.***
- **DO NOT:**
 - Drop the system against a hard surface.
 - In a site where the ambient temperature exceeds the rated temperature

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A.1.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the DRPC-240-TGL may result in permanent damage to the DRPC-240-TGL and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the DRPC-240-TGL. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the DRPC-240-TGL is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding:*** Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.

A.1.3 Product Disposal

**CAUTION:**

Risk of explosion if the battery is replaced by an incorrect type;

Replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types);

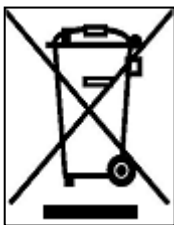
Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas;

A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

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A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the DRPC-240-TGL, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the DRPC-240-TGL, please read the details below.

- The interior of the DRPC-240-TGL does not require cleaning. Keep fluids away from the DRPC-240-TGL interior.
- Be cautious of all small removable components when vacuuming the DRPC-240-TGL.
- Turn the DRPC-240-TGL off before cleaning the DRPC-240-TGL.
- Never drop any objects or liquids through the openings of the DRPC-240-TGL.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the DRPC-240-TGL.

A.2.2 Cleaning Tools

Some components in the DRPC-240-TGL may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the DRPC-240-TGL.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the DRPC-240-TGL.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol can be used to clean the DRPC-240-TGL.
- **Using solvents** – The use of solvents is not recommended when cleaning the DRPC-240-TGL as they may damage the plastic parts.
- **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the DRPC-240-TGL. Dust and dirt can restrict the airflow in the DRPC-240-TGL and cause its circuitry to corrode.
- **Swabs** - Swabs moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas. Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

B

Regulatory Compliance

DECLARATION OF CONFORMITY

This equipment is in conformity with the following EU directives:

- EMC Directive 2014/30/EU
- Low-Voltage Directive 2014/35/EU
- RoHS II Directive 2015/863/EU

If the user modifies and/or install other devices in the equipment, the CE conformity declaration may no longer apply.

If this equipment has telecommunications functionality, it also complies with the requirements of the R&TTE Directive 1999/5/EC.

English

IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Български [Bulgarian]

IEI Integration Corp. декларира, че този оборудване е в съответствие със съществените изисквания и другите приложими правила на Директива 1999/5/EC.

Česky [Czech]

IEI Integration Corp tímto prohlašuje, že tento zařizení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk [Danish]

IEI Integration Corp erklærer herved, at følgende udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch [German]

IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.

Eesti [Estonian]

IEI Integration Corp deklareerib seadme seadme vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

Español [Spanish]

IEI Integration Corp declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική [Greek]

IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

Français [French]

IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano [Italian]

IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski [Latvian]

IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 1999/5/ΕΚ.

Lietuvių [Lithuanian]

IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands [Dutch]

IEI Integration Corp dat het toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti [Maltese]

IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar [Hungarian]

IEI Integration Corp nyilatkozik, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

Polski [Polish]

IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 199/5/EC.

Português [Portuguese]

IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Româna [Romanian]

IEI Integration Corp declară că acest echipament este în conformitate cu cerințele esențiale și cu celelalte prevederi relevante ale Directivei 1999/5/CE.

Slovensko [Slovenian]

IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

DRPC-240-TGL Embedded System

Slovensky [Slovak]

IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi [Finnish]

IEI Integration Corp vakuuttaa täten että I E i tuotteet on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska [Swedish]

IEI Integration Corp förklarar att denna utrustningstyp står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

ROHS STATEMENT



The label on the product indicates this product conforms to European (EU) Restriction of Hazardous Substances (RoHS) that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

FCC WARNING

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

CHINA ROHS

The label on the product indicates the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Appendix

C

Hazardous Materials Disclosure

The details provided in this appendix are to ensure that the product is compliant with the RoHS II Directive (2015/863/EU). The table below acknowledges the presences of small quantities of certain substances in the product, and is applicable to RoHS II Directive (2015/863/EU).

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements									
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)	Bis(2-ethylhexyl) phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
Housing	O	O	O	O	O	O	O	O	O	O
Display	O	O	O	O	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O	O	O	O	O
Battery	O	O	O	O	O	O	O	O	O	O
<p>O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in Directive (EU) 2015/863.</p> <p>X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in Directive (EU) 2015/863.</p>										