QBiX-JMB-CFLA310HG-B1

Industrial System with Intel® H310 Chipset, Support for Intel® 9th/8th Gen. Core™ i Processor and Discrete GFX card support

Startup Manual

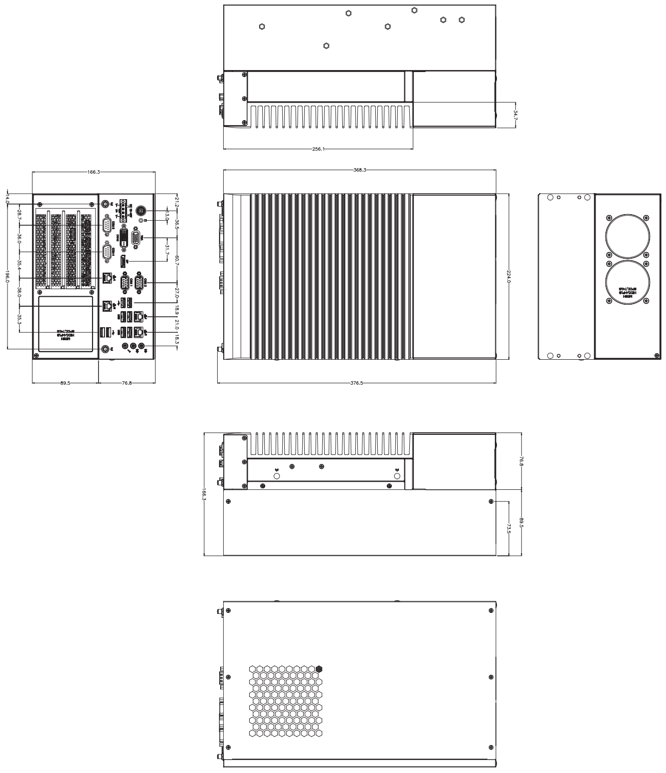
Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

For Main system : 9BQJH310AMR-SI
1. Terminal Blocks Male Plug x 1 (P/N: 25IO0-2ESDV0-D2R)
2. Screw M3x4L x 12 (P/N : 25984G-1C014-S00)

For Expansion slot kit : 6BQJH310BPR-SI
1. Power Cable #18 350mm x 2 (P/N: 25CRI-35030I-S9R)
2. Screw #6-32x4L x16 (P/N: 25KS2-13004F-S0R)

Dimension



Caution: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

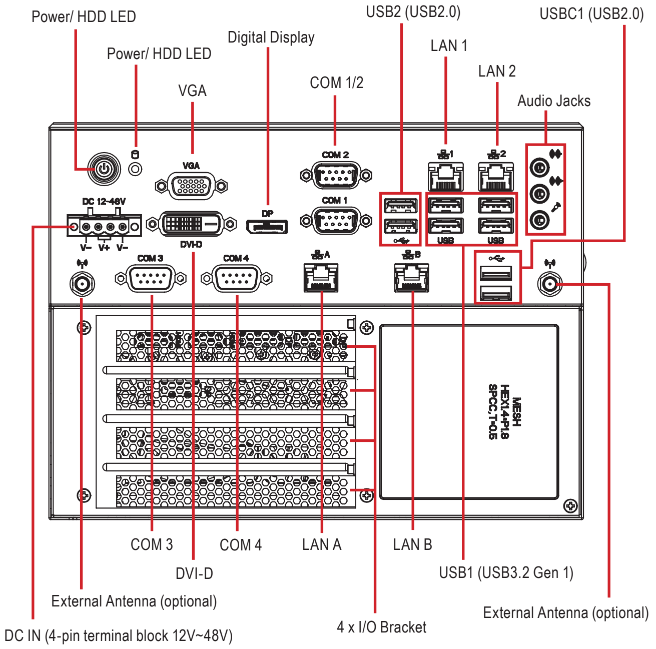
Specifications

Dimension	System Size : 224W x 368D x 166.3H(mm) - Discrete GFX max 250W support.(optional)
CPU	Support for 9th/8th Generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® processors in the LGA1151 package, TDP under 65W
Chipset	Intel® H310 Express Chipset
Memory	2 x DDR4 SO-DIMM sockets, Max. Capacity 32 GB, Dual channel DDR4 2666/2400 MHz
Ethernet	1 x GbE LAN Ports (Intel® I219V) 3 x GbE LAN Ports (Intel® I211AT)
Graphic Support	Integrated Graphics Processor - Intel® HD Graphics support: 1 x DVI-D port, supporting a maximum resolution of 1920x1080 @60Hz 1 x D-Sub port, supporting a maximum resolution of 1920x1200 @60Hz 1 x DP port, supporting a maximum resolution of 4096x2160 @30Hz 2 independent displays output
Audio	Realtek® Audio Codec
Storage	3 x 2.5" HDD/SSD (SATA 6Gb/s)
Expansion Slots	1 x 2280 M.2 M-Key (SATA 6Gb/s) 1 x 2230 M.2 E-Key (WiFi/BT) 1 x Full-size Mini PCIe with SIM slot (PCIe x1 + USB2.0) -- support 3G/4G module 1 x PCIe slot -- Discrete riser card support

Front I/O	1 x Power Switch/Power/HDD LED 3 x Audio Jacks (Line in, Line out, Mic in) 1 x Display port 1 x DVI-D 1 x VGA 2 x COM Ports (RS-232/422/485 & RI/5V/12V) 2 x COM Ports (RS-232) 4 x RJ45 LAN Ports 4 x USB 3.2 Gen 1 4 x USB 2.0 1 x 4-pin Terminal Block 2 x External Antenna Holes (Optional)
Riser Card (Optional)	PCIe x4 (Gen3 x1) PCIe x16 (Gen3 x16) -- Discrete GFX card: max. 250W, max length 293mm
Rear I/O	—
Power	DC in +24V~48V (full Range) -- Support discrete GFX card
Operation Temperature	For Main system : Operating temperature: -20°C to 50°C (CPU TDP 65W) Operating temperature: -20°C to 60°C (CPU TDP 35W) For Full system : Depends on the Graphic cards installed in the system Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing) Use wide temperature range memory and storage
Vibration During Operation	Operation: IEC 60068-2-64, 1 Grms, random, 5 ~ 500 Hz, 1 hr / Per Axis, With SSD/M.2 2280 & Without Graphics Cards Non-operation: IEC 60068-2-6, 2 G, Sine, 10 ~ 500 Hz, 1 Oct/min, 1 hr / Per Axis
Shock During Operation	Operation: IEC 60068-2-27, 50 G, half sine, 11 ms duration, with SSD
Packaging Content	For Main system : 9BQJH310AMR-SI Carton size: 351 x 300 x 166 (mm) Packing Capacity: 1pc Including: Terminal Blocks Male Plug x 1 (P/N: 25IO0-2ESDV0-D2R) Screw M3x4L x 12 (P/N : 25984G-1C014-S00) For Expansion slot kit : 6BQJH310BPR-SI Carton size: 460 x 315 x 279 (mm) Packing Capacity: 1pc Including: Power Cable #18 350mm x 2 (P/N: 25CRI-35030I-S9R) Screw #6-32x4L x16 (P/N: 25KS2-13004F-S0R)

Oeder Information	System : 9BQJH310AMR-SI & 6BQJH310BPR-SI (Built in Components: Please contact with your sales representative for more information or e-mailed to : sales@gigaipc.com)

System I/O Interface



Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

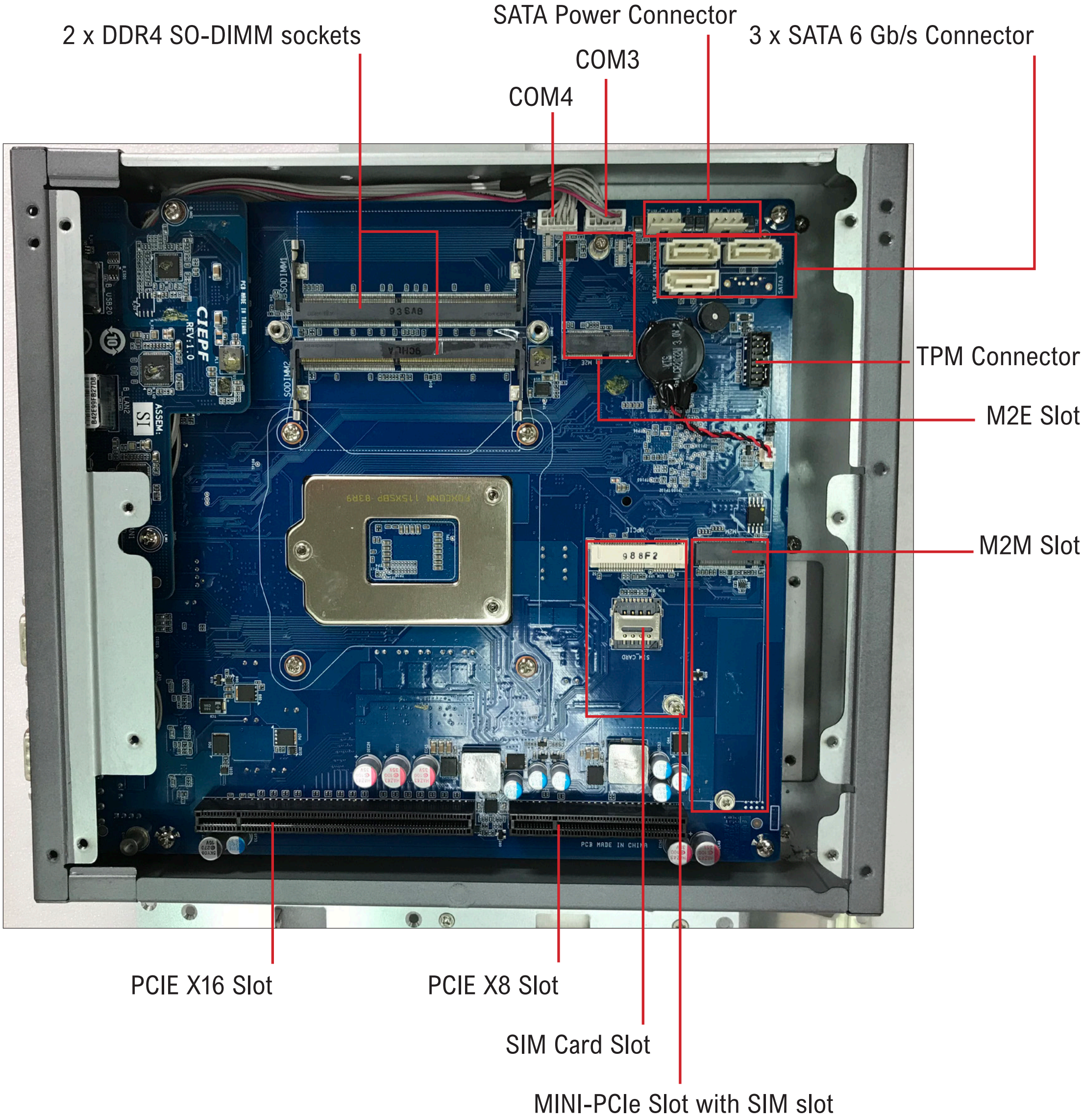
Front I/O Connectors

No.	Code	Scription
1	VGA	VGA Connector
2	DVI-D	DVI-D Connector
3	DP	Digital Display Port
4	COM 1/2	RS-232/422/485
5	COM 3/4	RS-232
6	USB 1	4 x USB 3.2 Gen 1
7	USB 2	2 x USB 2.0
8	USB C1	2 x USB 2.0

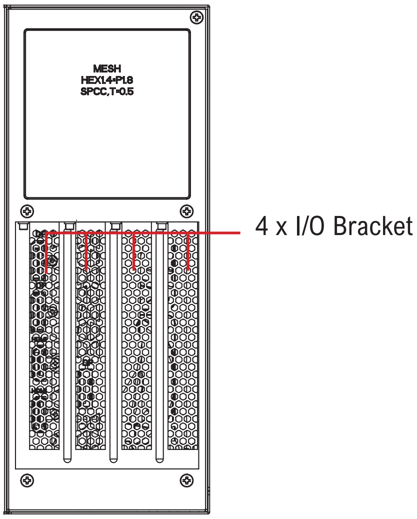
Front I/O Connectors

9	LAN 1	Intel® I219V
10	LAN 2	Intel® I211AT
11	LAN A	Intel® I211AT
12	LAN B	Intel® I211AT
13	LED	Power and Storage Device Status LED
14	DC-12-48V	Power connector When installed Graphic card, power would support from +24V ~ 48V
15	Audio	Audio Jacks (Line in, Line out & Mic in)

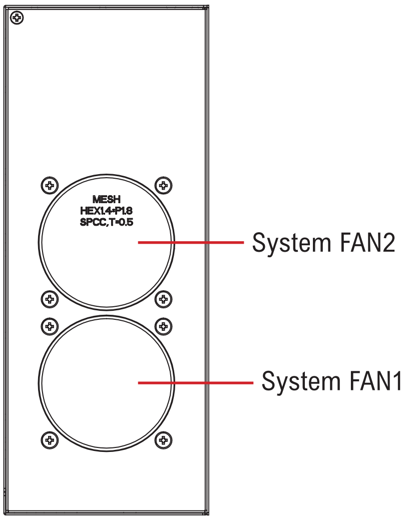
Internal I/O Connectors



Expansion Front View

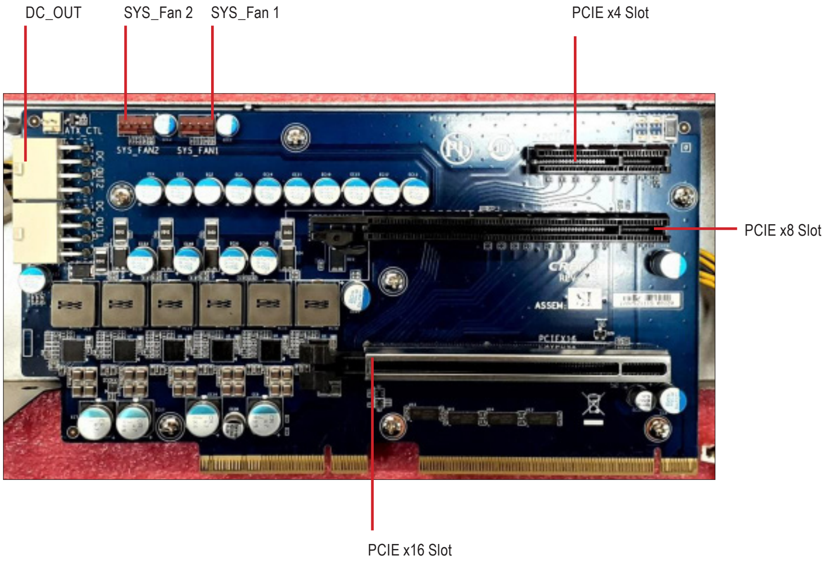


Expansion Rear View

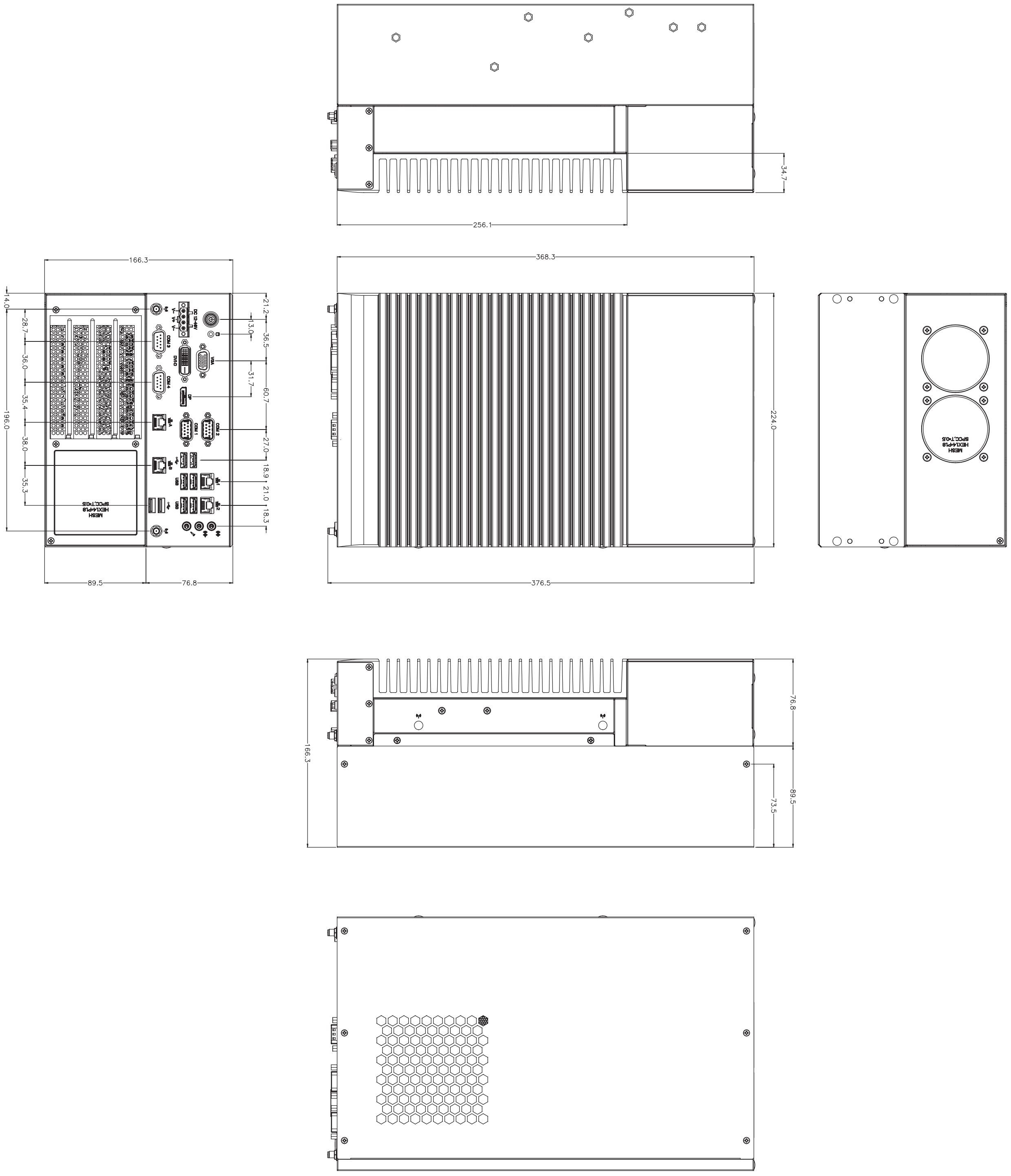


Expansion I/O Connectors

No.	Code	Scription
1	DC_OUT	GPU Power Supply Connector DC Output
2	SYS_FAN1	Fan1 Power Connector
3	SYS_FAN2	Fan2 Power Connector
4	PCIEX4	PCIE x4 Slot
5	PCIEX8	PCIE x8 Slot
6	PCIEX16	PCIE x16 Slot



System Dimensions



Simple Installation Process

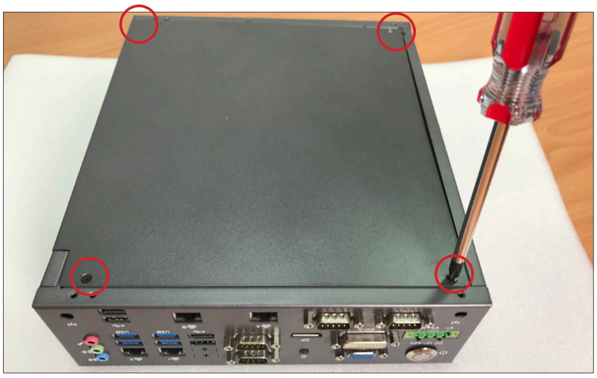
Memory Installation

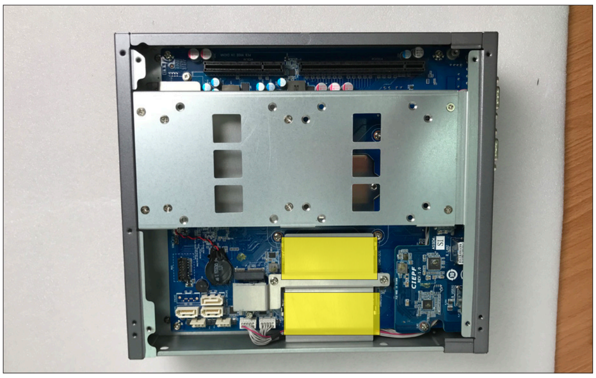
QBiX-JMB-CFLA310H-A1 supports DDR4 SO-DIMM type memory module.

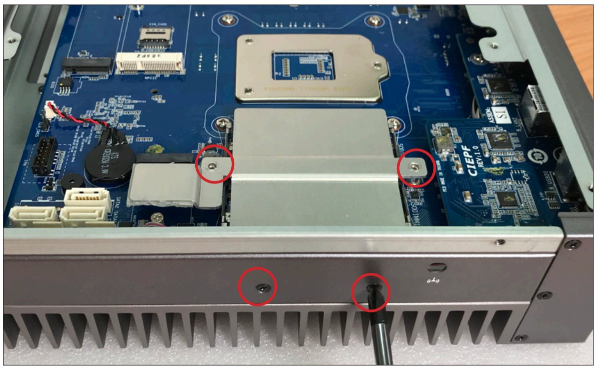
1. Loosen 4 screws and remove the bottom cover.
2. Loosen 4 screws to remove memory thermal cover.
3. Affix thermal pad on memory and assemble memory.

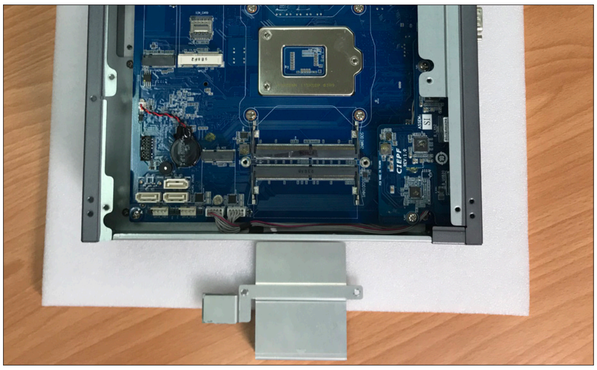
Note : Thermal pad and memory thermal cover must be fully mated and compacted.

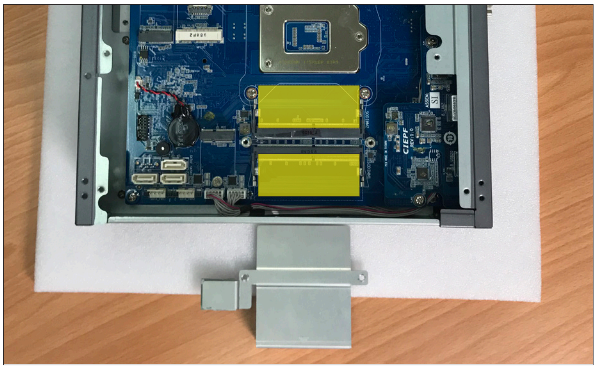
4. Install 4 screws and memory thermal cover.
5. Replace the bottom cover and secure with screws.

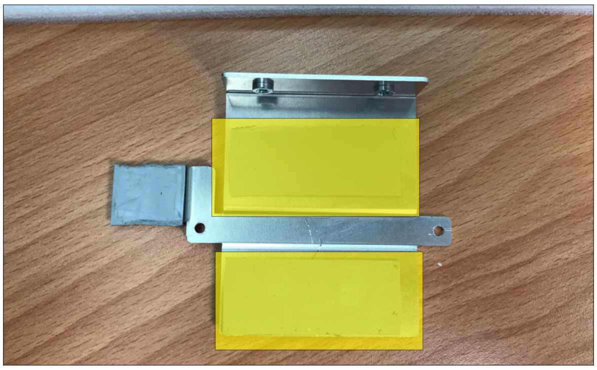






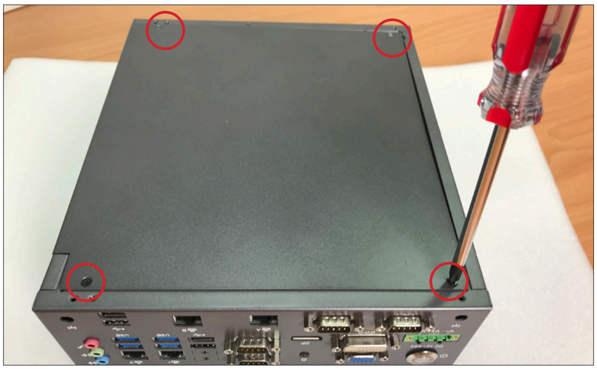


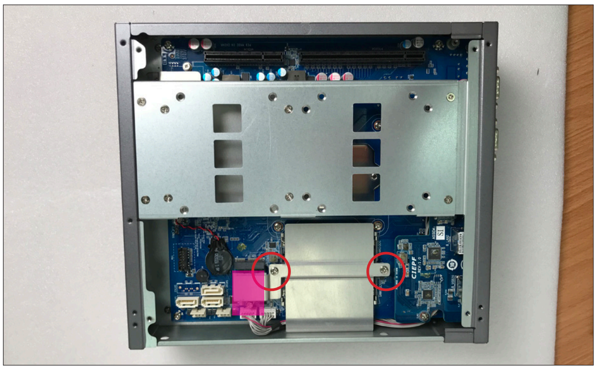


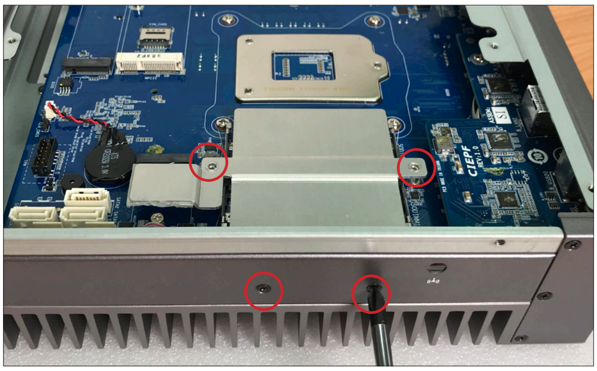


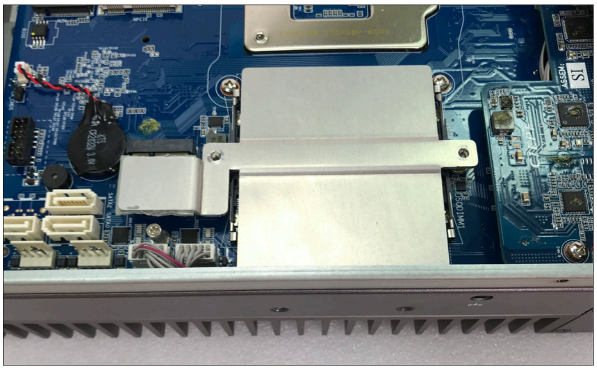
M2E (Support NGFF-2230 Wifi/BT) Installation

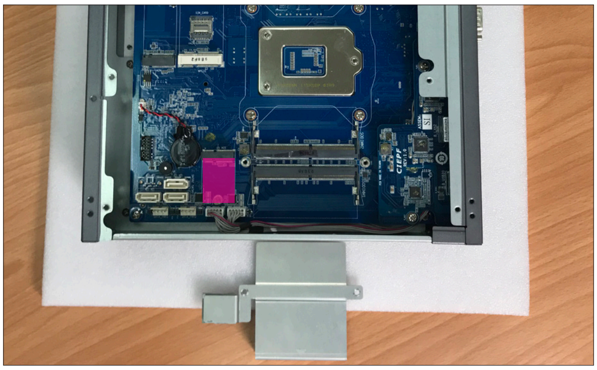
1. Loosen 4 screws and remove the bottom cover.
2. Loosen 4 screws to remove M2E thermal cover.
3. Install the module in the M2E (Support NGFF-2230 Wifi/BT) slot and secure with screws.
4. Affix thermal pad on M2E card and assemble.
5. Install 4 screws and M2E thermal cover.
6. Replace the bottom cover and secure with screws.

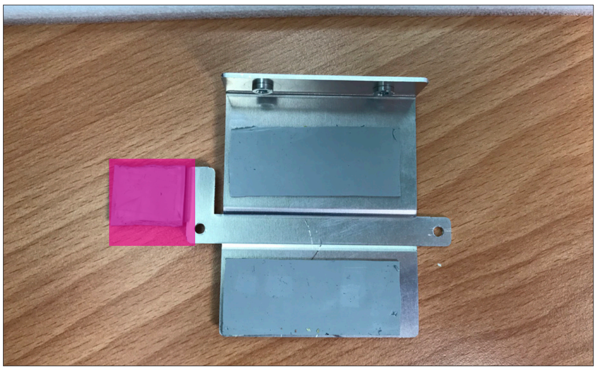






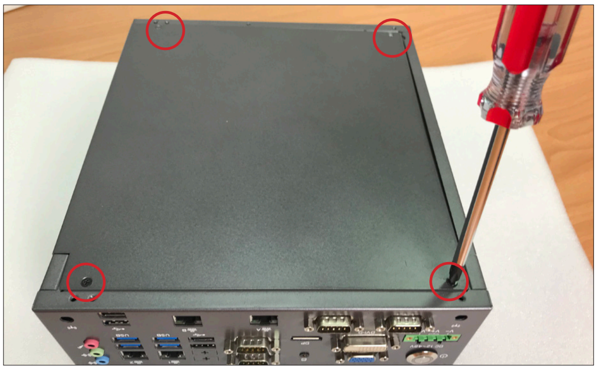


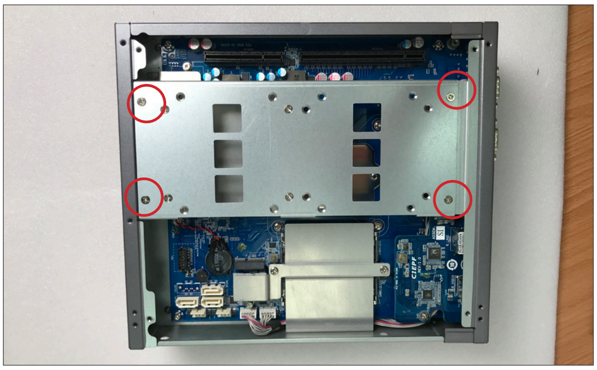


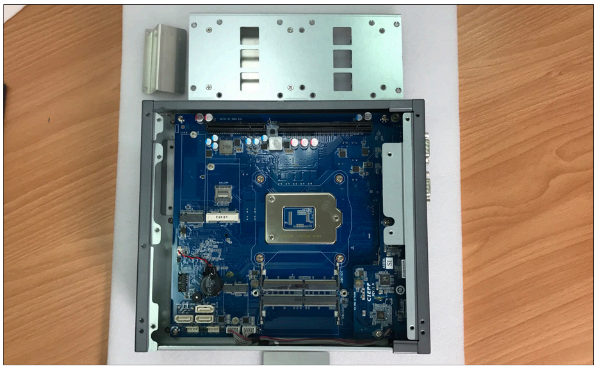


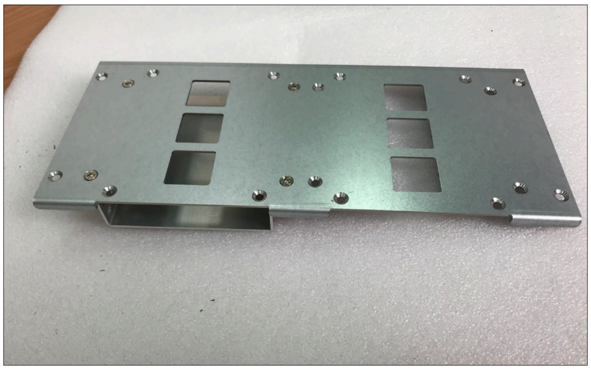
Storage Installation 1 (2.5” HDD/SSD)

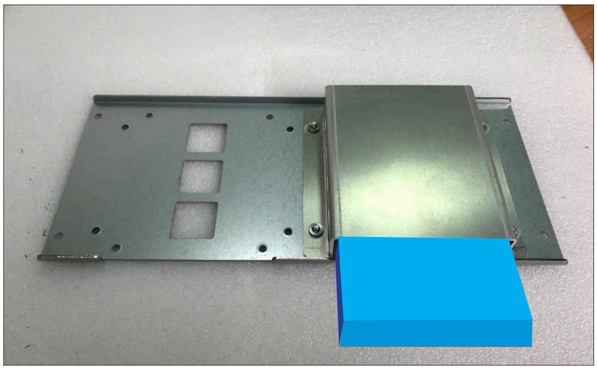
1. Loosen 4 screws and remove the bottom cover.
2. Loosen 4 screws to remove storage tray.
3. Secure storage with 4 x screws.
4. Assemble SATA cable/power cable and replace storage tray securely with 4 x screws.
5. Replace the bottom cover and secure with screws.

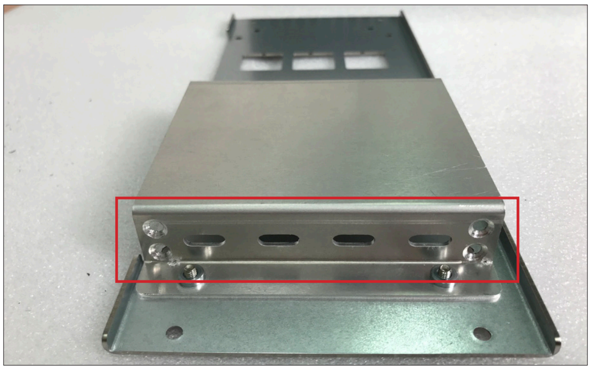


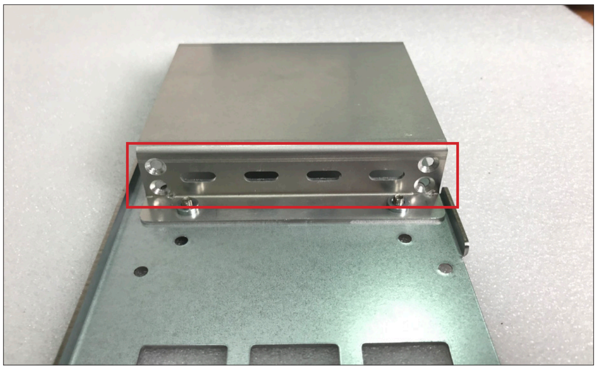


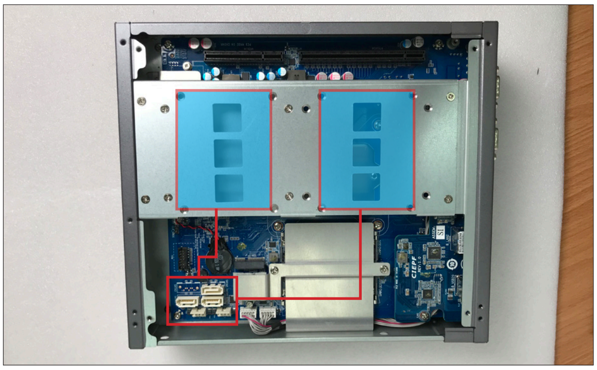






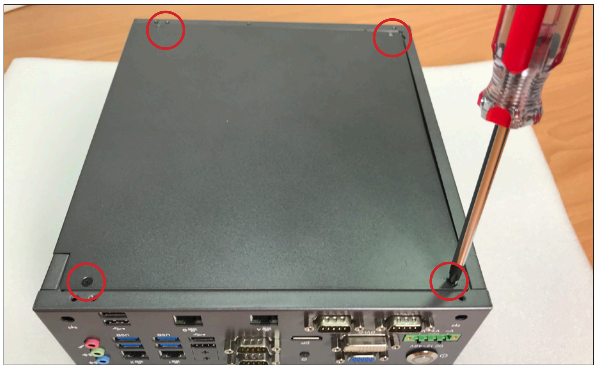


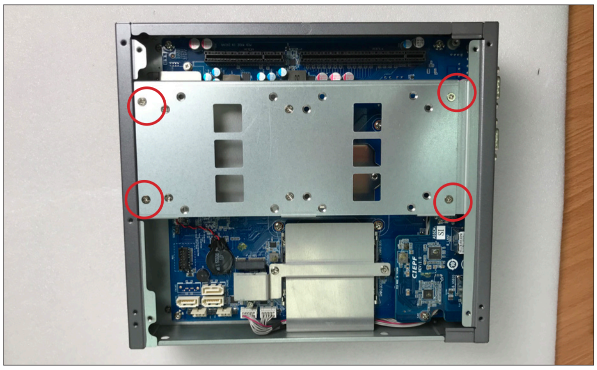


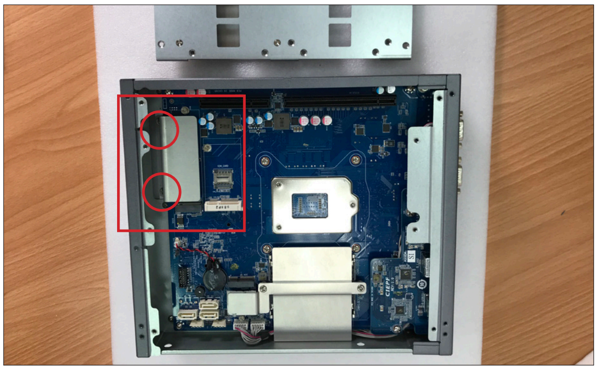


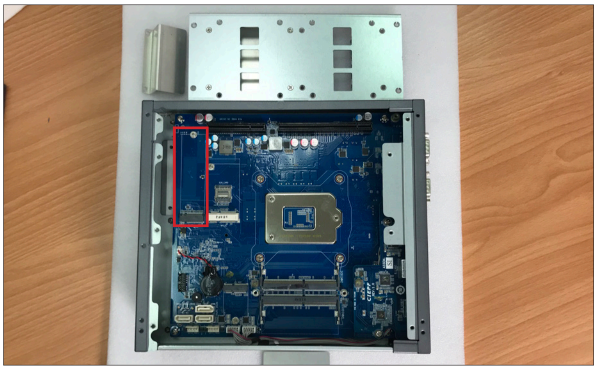
Storage Installation 2 (M2M Storeage)

1. Loosen 4 screws, and then remove the bottom cover.
2. Loosen 4 screws to remove the hard disk storage aluminum sheet.
3. Loosen the 2 screws to remove the aluminum heat sink and thermal pad.
4. Assemble the M2M (NGFF-2280 SATA) storage hard drive.
5. Install the 2 screws to securely replace the aluminum heat sink and heat sink paste.
6. Install 4 screws to firmly install the hard disk storage aluminum sheet.
7. Replace the bottom cover and secure with screws.





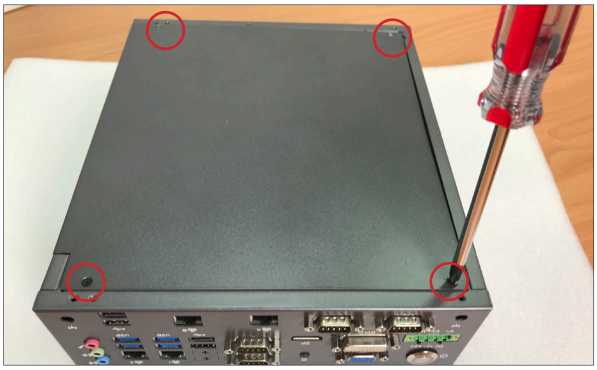


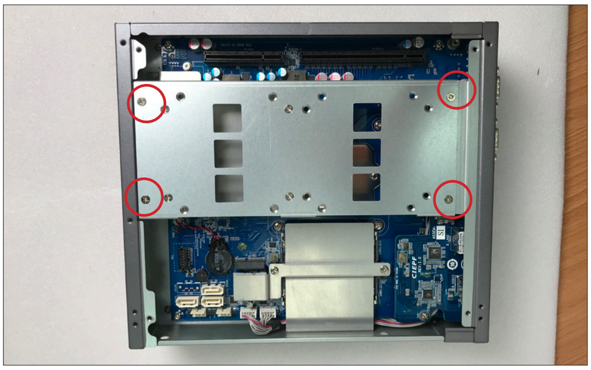


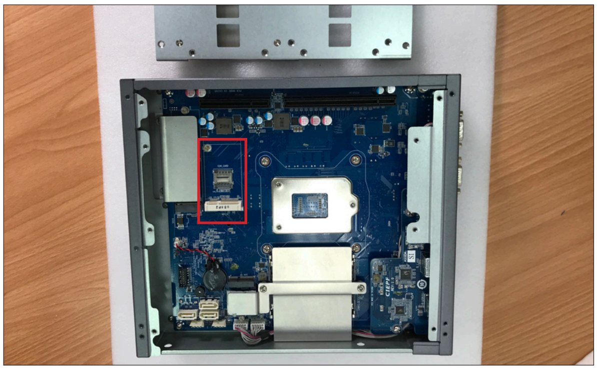
Mini-PCIe Slot (PCIeX1 + USB2.0) and SIM Card Slot Installation

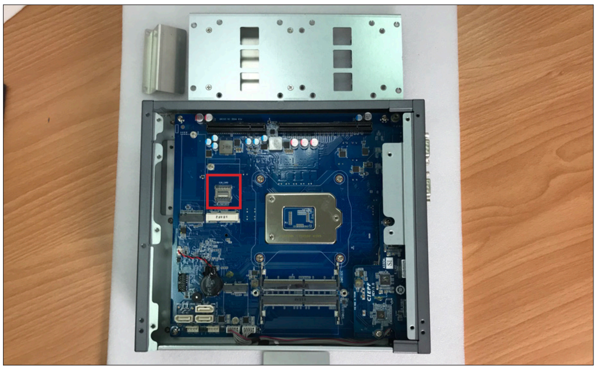
QBiX-JMB-CFLA310H-A1 supports one full size Mini-PCIe.

1. Loosen 4 screws, and then remove the bottom cover
2. Loosen 4 screws to remove the hard disk storage aluminum sheet
3. Assemble the Mini-PCIe expansion Card (Mini-PCIeX1 + USB2.0) or 3G/4G SIM Card in SIM Slot.
4. Install 4 screws to firmly install the hard disk storage aluminum sheet
5. Replace the bottom cover and secure with screws.





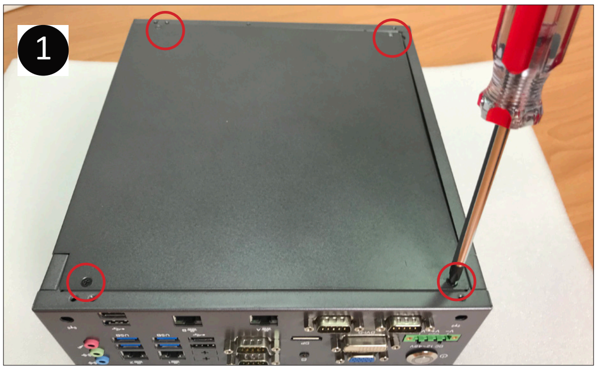


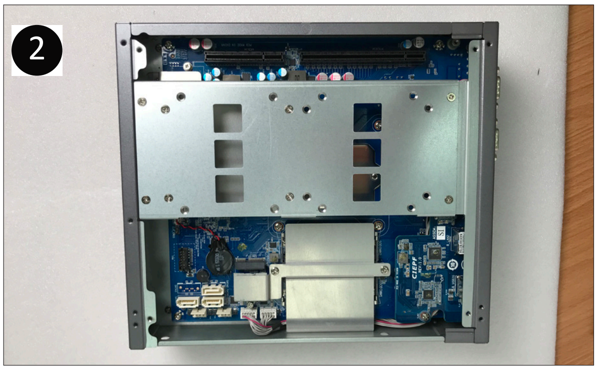


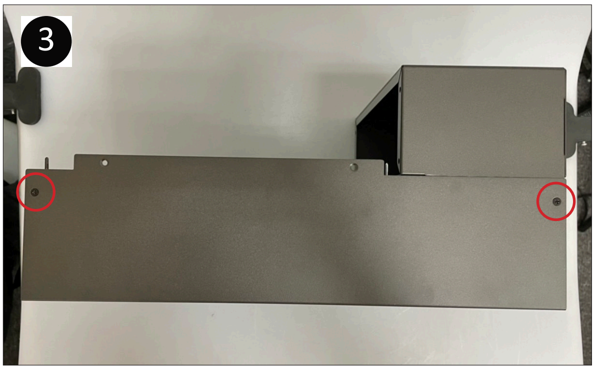
How to combine the QBiX-JMB-CFLA310H-A1 system & PCI-E extension chassis

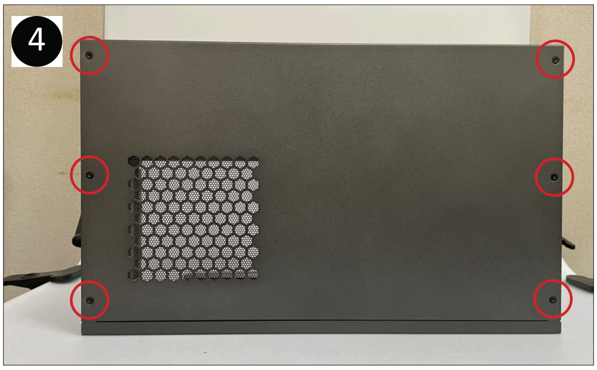
QBiX-JMB-CFLA310HG-B1 is combined with QBiX-JMB-CFLA310H-A1 and Expansion PCIE Slot Chassis.

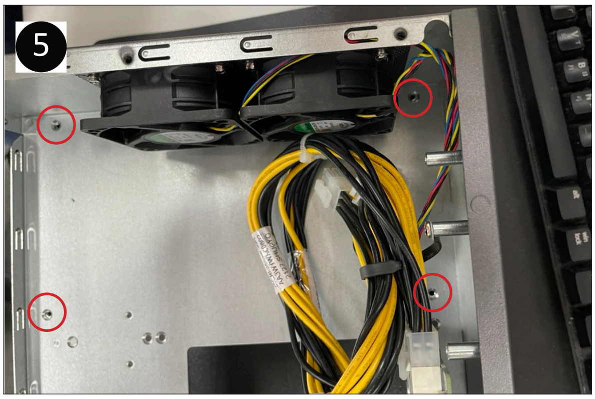
1. Loosen 4 screws and remove the bottom cover of QBiX-JMB-CFLA310H-A1. (refer Figure 1 and 2)
2. Loosen 8 screws and remove the cover of Expansion PCIE Slot Chassis. (refer Figure 3 and 4)
3. Loosen 4 screws on the system fan side of Expansion PCIE Slot Chassis to seperate into 2 parts as below A & B parts. (refer Figure 5 and 6)

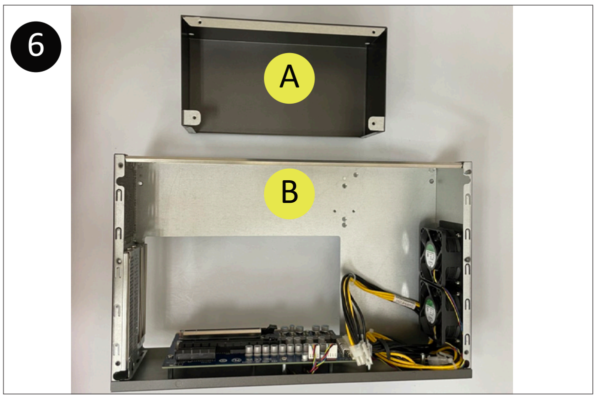






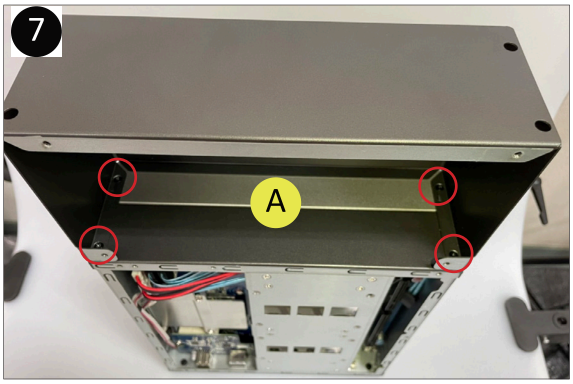


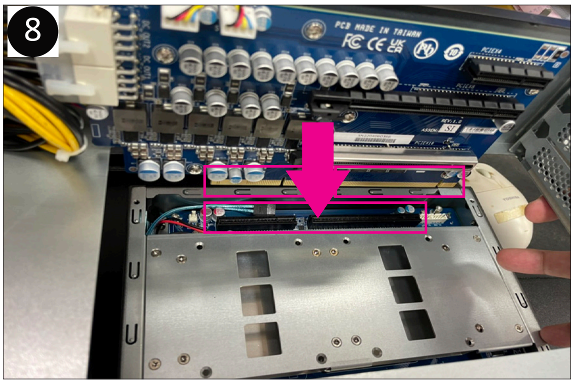


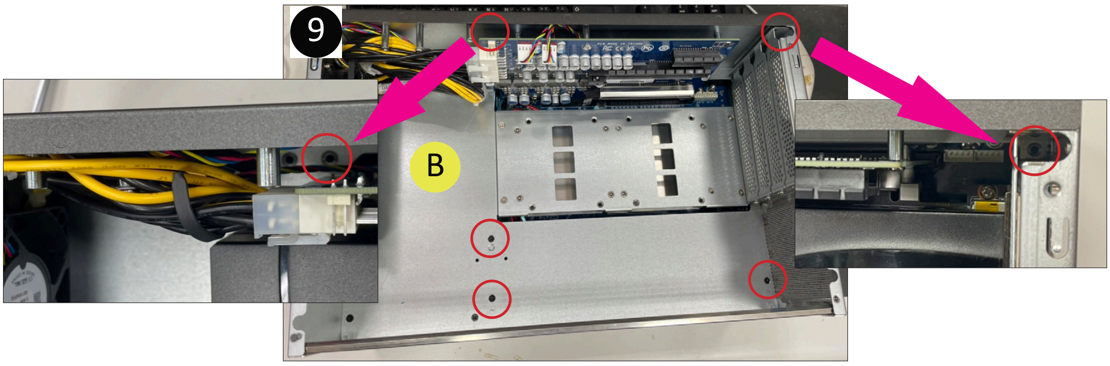


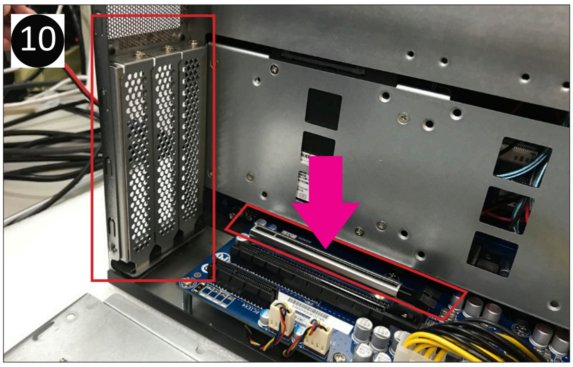
How to combine the QBiX-JMB-CFLA310H-A1 system & PCI-E extension chassis (Cont.)

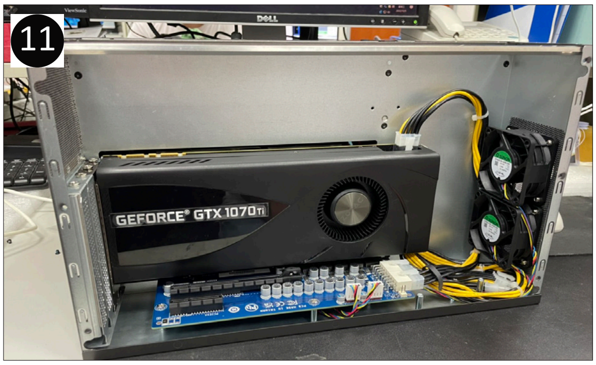
4. Assemble 4 screws (Torsion : 4 - 5 kgf.cm) to fix A parts on the QBiX-JMB-CFLA310H-A1 system (refer Figure 7)
   ※Recommend to use at least 15cm length screwdriver.
5. Insert the PCIe riser card into PCI-E slot of QBiX-JMB-CFLA310H-A1 system from Top to Bottom. (refer Figure 8)
6. Assemble 5 screws (Torsion : 4 - 5 kgf.cm) to fix B parts on the QBiX-JMB-CFLA310H-A1 system. (refer Figure 9)
7. Remove the screws on the IO Bracket, and then insert the graphic card into the PCI-E slot of PCI-E extension chassis from top to bottom. Connect the power cord in the extension card to the power connector of the graphics card (refer Figure 10 and 11)











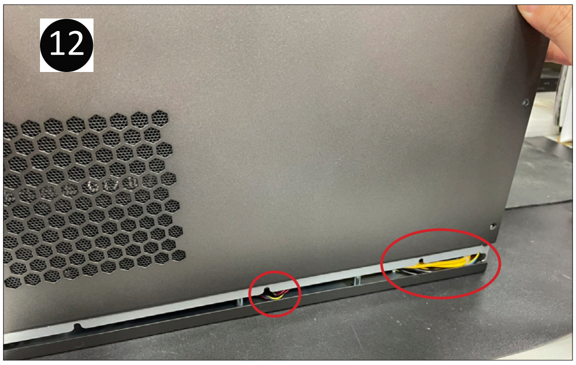
NOTE 1 : To connect 1 or 2 power cables on the graphic cards is depends on different graphic card spec.

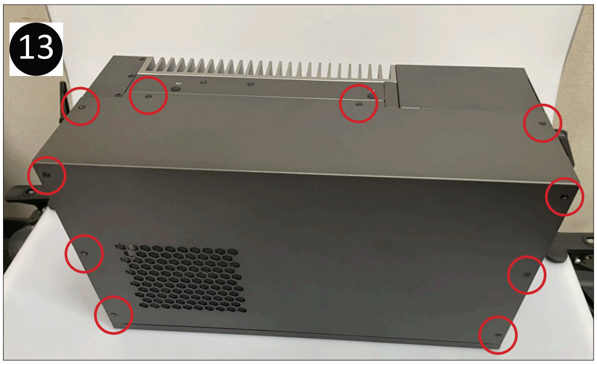
NOTE 2 : If only 1 power connector on the graphic card, you can choose any one of two power cables for connection.

NOTE 3 : The graphic card model uses on above picture (refer Figure 11) is for reference only.

How to combine the QBiX-JMB-CFLA310H-A1 system & PCI-E extension chassis (Cont.)

8. Reinstall the cover back, and please be careful for the cables that may be harmed by the cover. (refer Figure 12)
9. Assemble 10 screws (Torsion : 4 - 5 kgf.cm). (refer Figure 13)





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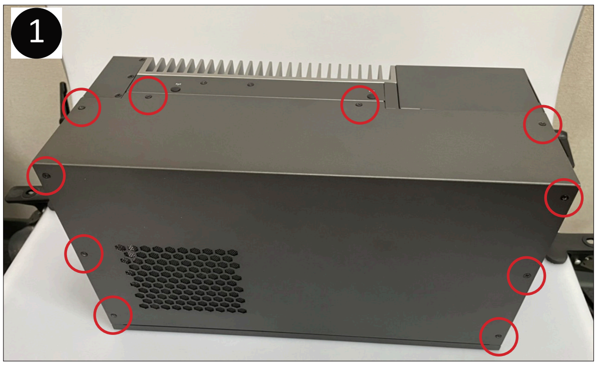
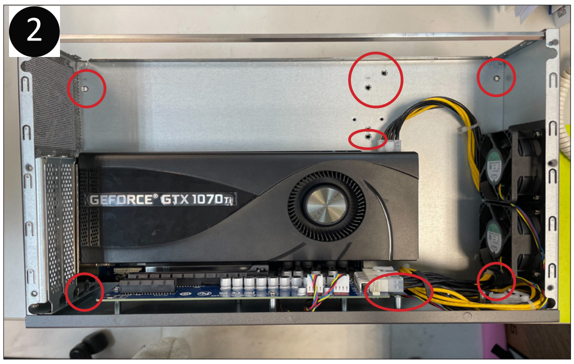
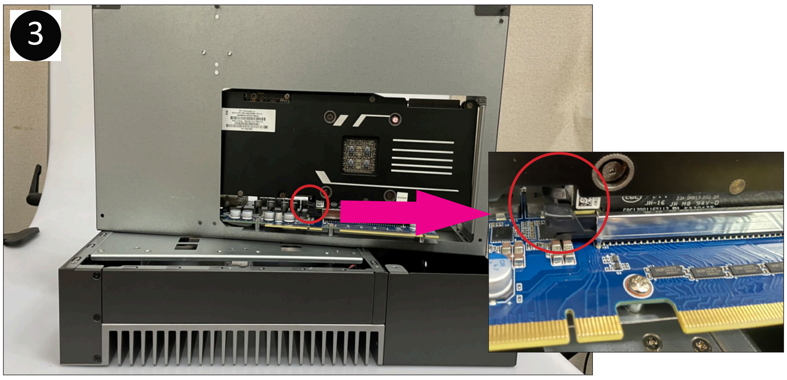
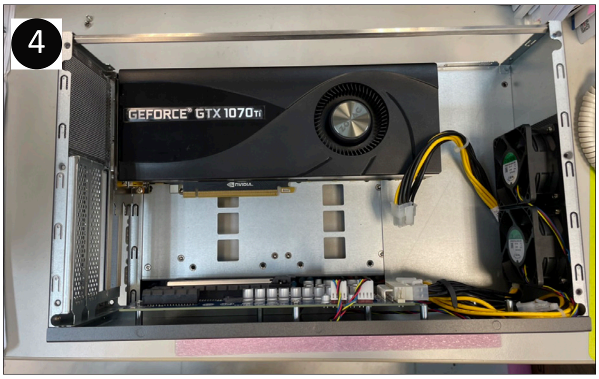
How to disassemble the graphic card

1. Remove 10 screws to open the bottom cover. (refer Figure 1)
2. Remove 9 screws to seperate the QBiX-JMB-CFLA310H-A1 system and PCI-E extension chassis. (refer Figure 2, or please refer to page 11/Figure 5 and page 12/Figure 9)
3. Push the lock on the PCIe slot down to easily disassemble the graphic card. (refer Figure 3)
4. Disassemble the graphic card from the PCIe slot. (refer Figure 4)


1


2


3


4

NOTE 1 : The graphic card model in this page is for reference only.

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this Startup Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:

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

15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -40°C (-40°F) OR ABOVE 85°C (185°F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER’S INSTRUCTIONS.
17. RESTRICTED ACCESS AREA: The equipment should only be installed in a Restricted Access Area.
18. DISCLAIMER: This set of instructions is given according to IEC 704-1. GIGAIPC disclaims all responsibility for the accuracy of any statements contained here in.

GIGAIPC

QBiX-JMB-CFLA310HG-B1

Industrial Fanless System with Intel® H310 Chipset,
Support for Intel® 9th/8th Gen. Core™ i Processor and Discrete GFX card

BIOS Manual

Introduction

BIOS (Basic input/output system) provides hardware detailed information and boot-up options, which include firmware to control, set-up and test all hardware settings. Therefore, BIOS is the communication bridge between OS/application software and hardware.

How to Entering into BIOS menu

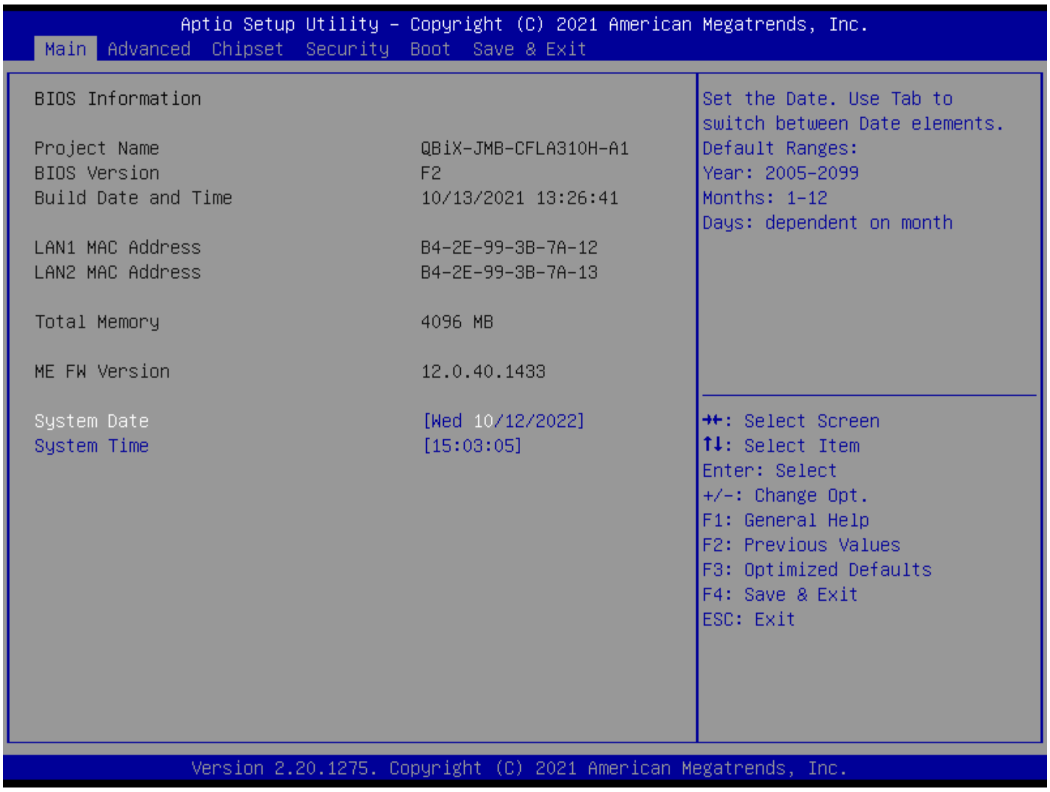
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

Function Keys to setup in BIOS Setup program

Function keys	Description
→←	Select Screen
↑↓	Select Item
Enter	Execute command or enter the submenu
+	Increase the numeric value or make changes
—	Decrease the numeric value or make changes
F1	General Help
F2	Previous Values
F3	Load Optimized Defaults Settings
F4	Save changes & Exit the BIOS Setup program
ESC	Exit the BIOS Setup program

1. The Main Menu

The main menu shows the basic system information.
Use arrow keys to move among the items.



```
              Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
   Main  Advanced  Chipset  Security  Boot  Save & Exit

  BIOS Information                                      Set the Date. Use Tab to
                                                        switch between Date elements.
  Project Name                   QBiX-JMB-CFLA310H-A1   Default Ranges:
  BIOS Version                   F2                     Year: 2005-2099
  Build Date and Time            10/13/2021 13:26:41    Months: 1-12
                                                        Days: dependent on month
  LAN1 MAC Address               B4-2E-99-3B-7A-12
  LAN2 MAC Address               B4-2E-99-3B-7A-13

  Total Memory                   4096 MB

  ME FW Version                  12.0.40.1433

  System Date                    [Wed 10/12/2022]       →←: Select Screen
  System Time                    [15:03:05]             ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```
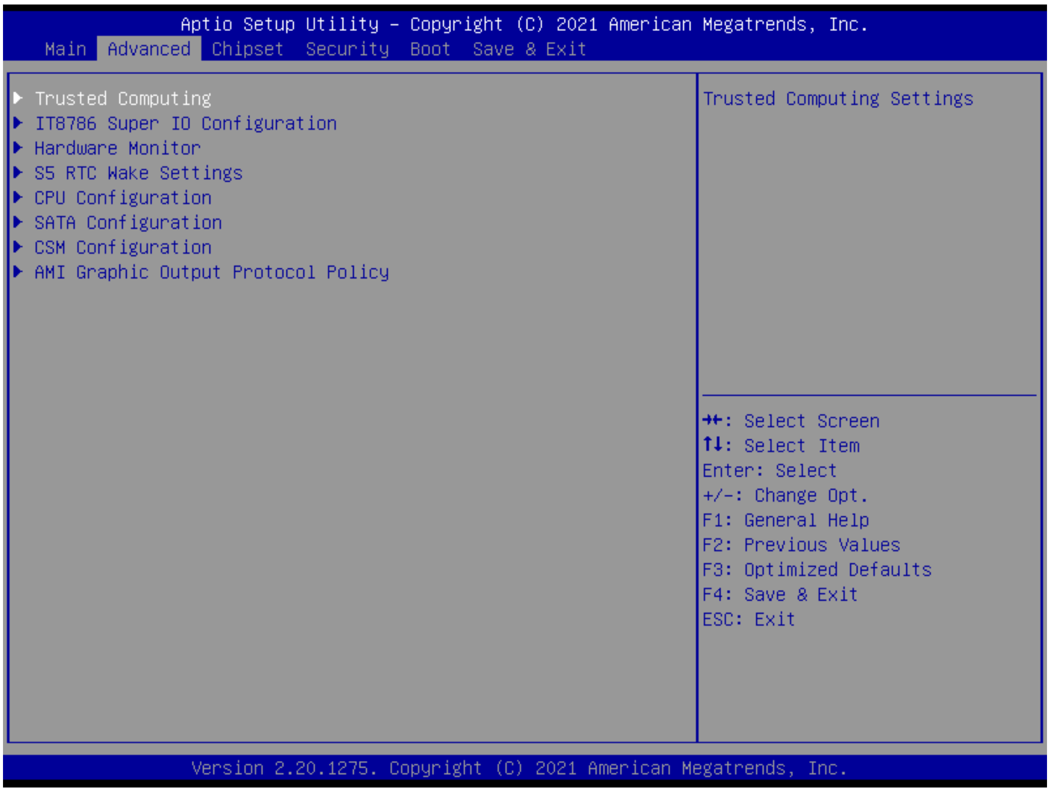

Items	Description
Project Name	**Shows Project name information**
BIOS Version	**Shows the BIOS version of the system**
Build Date and Time	**Shows the Build Date and Time when the BIOS was created.**
LAN1 MAC Address	**Shows LAN1 MAC Address information**
LAN2 MAC Address	**Shows LAN2 MAC Address information**
Total Memory	**Shows the total memory size of the installed memory**
ME FW version	**Shows ME firmware version**
System Date	**Set the Date for the system** **(Format : Week - Month - Day - Year)**
System Time	**Set the time for the system** **(Format : Hour - Minute - Second)**

2. Advanced

The Advanced menu is to configure the functions of hardware settings through submenu. Use arrow keys to move among the items, and press <Enter> to access into the related submenu.



```
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   Main  Advanced  Chipset  Security  Boot  Save & Exit

▶ Trusted Computing                          Trusted Computing Settings
▶ IT8786 Super IO Configuration
▶ Hardware Monitor
▶ S5 RTC Wake Settings
▶ CPU Configuration
▶ SATA Configuration
▶ CSM Configuration
▶ AMI Graphic Output Protocol Policy
                                             →←: Select Screen
                                             ↑↓: Select Item
                                             Enter: Select
                                             +/-: Change Opt.
                                             F1: General Help
                                             F2: Previous Values
                                             F3: Optimized Defaults
                                             F4: Save & Exit
                                             ESC: Exit

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```
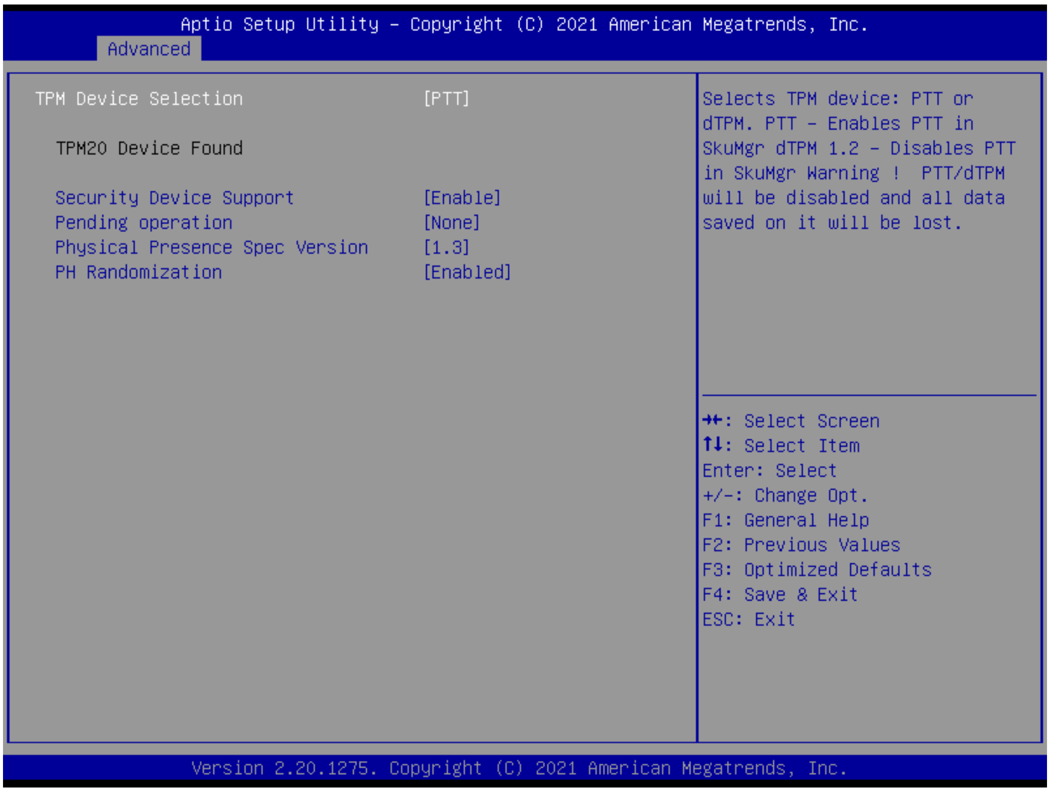

2.1 Trusted Computing

Use Trusted computing submenu to choose TPM interface.



```
                 Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
          Advanced

  TPM Device Selection                 [PTT]              Selects TPM device: PTT or
                                                          dTPM. PTT - Enables PTT in
    TPM20 Device Found                                    SkuMgr dTPM 1.2 - Disables PTT
                                                          in SkuMgr Warning !  PTT/dTPM
    Security Device Support            [Enable]           will be disabled and all data
    Pending operation                  [None]             saved on it will be lost.
    Physical Presence Spec Version     [1.3]
    PH Randomization                   [Enabled]



                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```
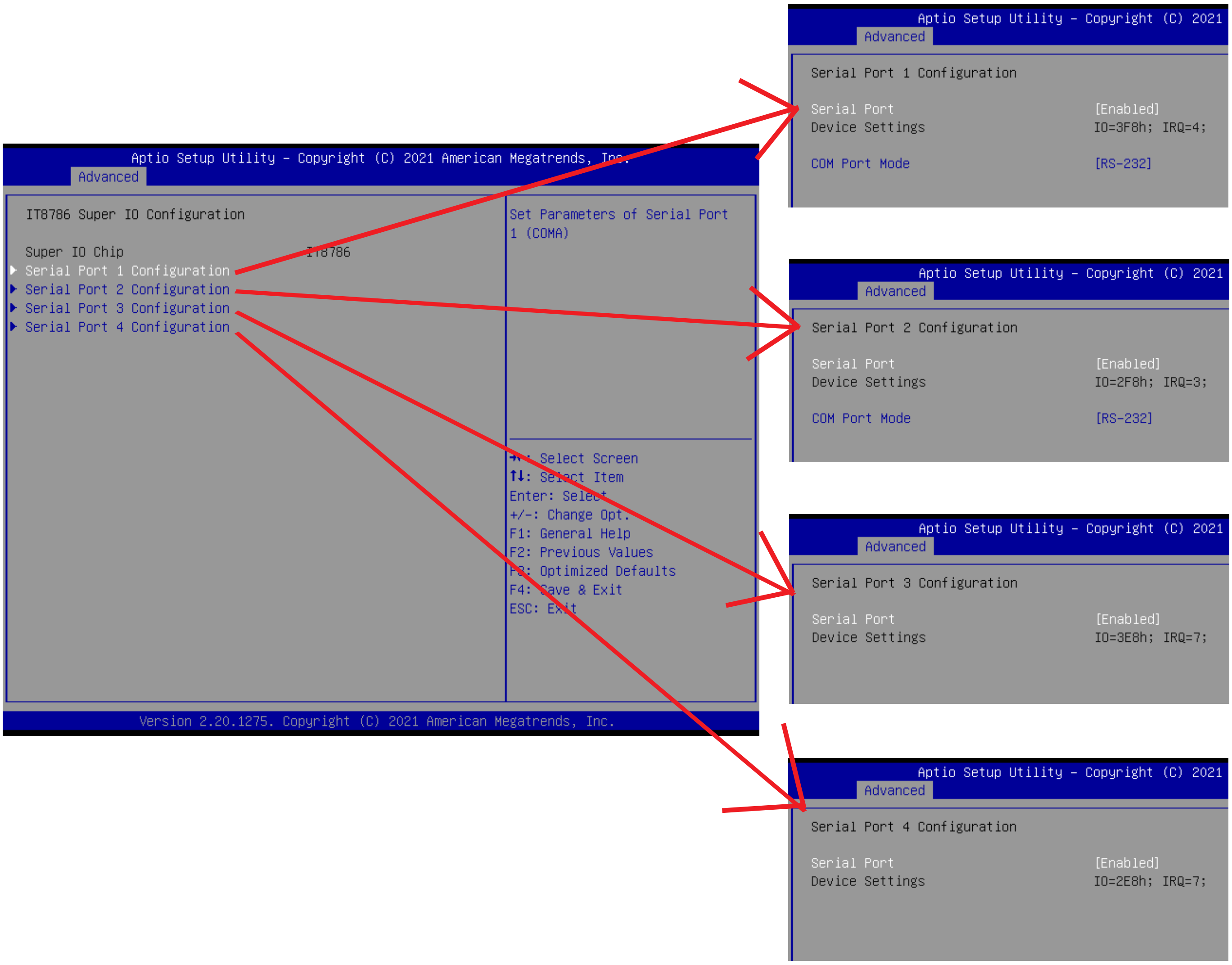

Item	Description
TPM Device Selection	**PTT : Internal TPM (Default setting)** **dTPM : External TPM (When using External TPM module or having TPM chip on MB)**
Security Device Support	**Enabled : Enables TPM feature (Default setting)** **Disabled : Disables TPM feature**
Pending operation	**None : No execution will be conducted (Default setting)** **TPM clear : Set to clear data on TPM**
Physical Presence Spec Version	Choose PPI spec version **Option items : 1.2 or 1.3 (Default setting)**
PH Randomization	**Enabled : Enables Platform Hiearchy (PH) Randomization. (Default setting)** **Disabled : Disables Platform Hiearchy (PH) Randomization.**

2.2 IT8786 Super IO Configuration



```
Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc.
Advanced

IT8786 Super IO Configuration                      Set Parameters of Serial Port
                                                   1 (COMA)
Super IO Chip                  IT8786
▶ Serial Port 1 Configuration
▶ Serial Port 2 Configuration
▶ Serial Port 3 Configuration
▶ Serial Port 4 Configuration

                                                   →←: Select Screen
                                                   ↑↓: Select Item
                                                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

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```

```
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Advanced

Serial Port 1 Configuration

Serial Port                          [Enabled]
Device Settings                      IO=3F8h; IRQ=4;

COM Port Mode                        [RS-232]
```

```
Aptio Setup Utility – Copyright (C) 2021
Advanced

Serial Port 2 Configuration

Serial Port                          [Enabled]
Device Settings                      IO=2F8h; IRQ=3;

COM Port Mode                        [RS-232]
```

```
Aptio Setup Utility – Copyright (C) 2021
Advanced

Serial Port 3 Configuration

Serial Port                          [Enabled]
Device Settings                      IO=3E8h; IRQ=7;
```

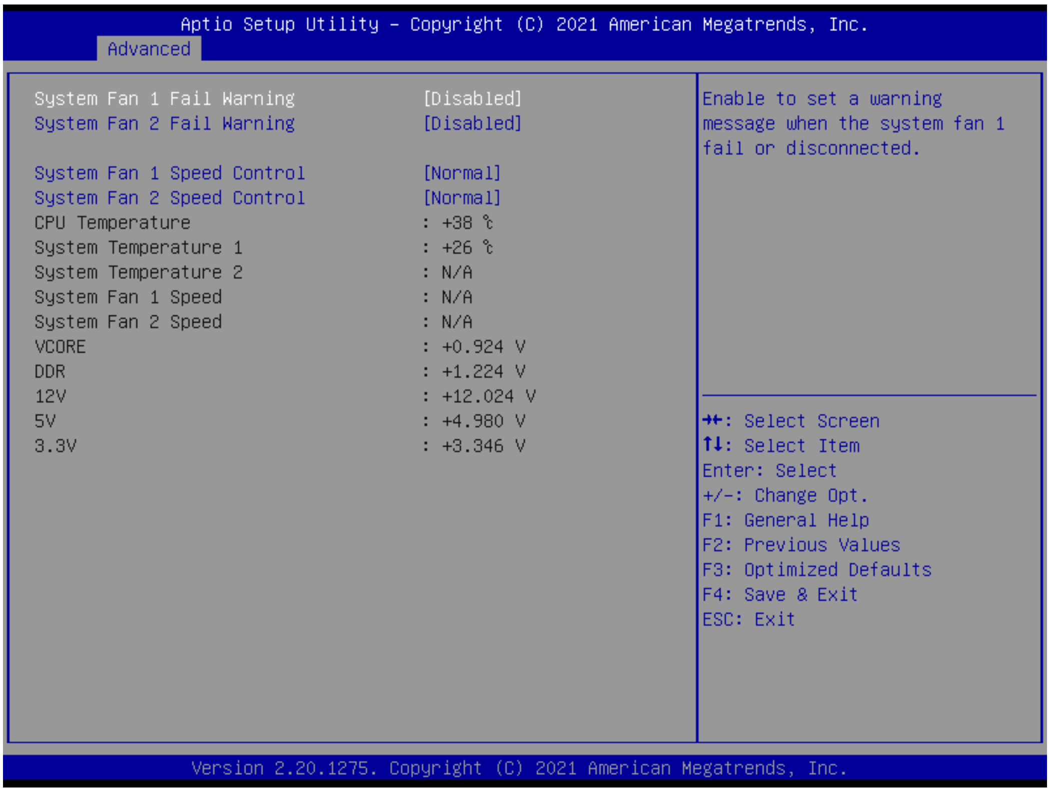
```
Aptio Setup Utility – Copyright (C) 2021
Advanced

Serial Port 4 Configuration

Serial Port                          [Enabled]
Device Settings                      IO=2E8h; IRQ=7;
```

Item	Description
Super IO Chip	Shows Super I/O chip model
Serial Port 1 Configuration **Serial Port 2 Configuration**	Press [Enter] to configure advanced items : Serial Port : **Enabled : Enables allows you to configure the serial port settings (Default setting)** **Disabled : if Disabled, displays no configuration for the serial port** Device settings : Display the specified Serial Port base I/O address and IRQ COM Port Mode : Choose RS-232, RS-422, or RS-485 feature
Serial Port 3 Configuration **Serial Port 4 Configuration**	Press [Enter] to configure advanced items : Serial Port : **Enabled : Enables allows you to configure the serial port settings (Default setting)** **Disabled : if Disabled, displays no configuration for the serial port** Device settings : Display the specified Serial Port base I/O address and IRQ

2.3 Hardware Monitor



```
        Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
          Advanced

  System Fan 1 Fail Warning              [Disabled]     Enable to set a warning
  System Fan 2 Fail Warning              [Disabled]     message when the system fan 1
                                                        fail or disconnected.
  System Fan 1 Speed Control             [Normal]
  System Fan 2 Speed Control             [Normal]
  CPU Temperature                        : +38 ℃
  System Temperature 1                   : +26 ℃
  System Temperature 2                   : N/A
  System Fan 1 Speed                     : N/A
  System Fan 2 Speed                     : N/A
  VCORE                                  : +0.924 V
  DDR                                    : +1.224 V
  12V                                    : +12.024 V
  5V                                     : +4.980 V     →←: Select Screen
  3.3V                                   : +3.346 V     ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```
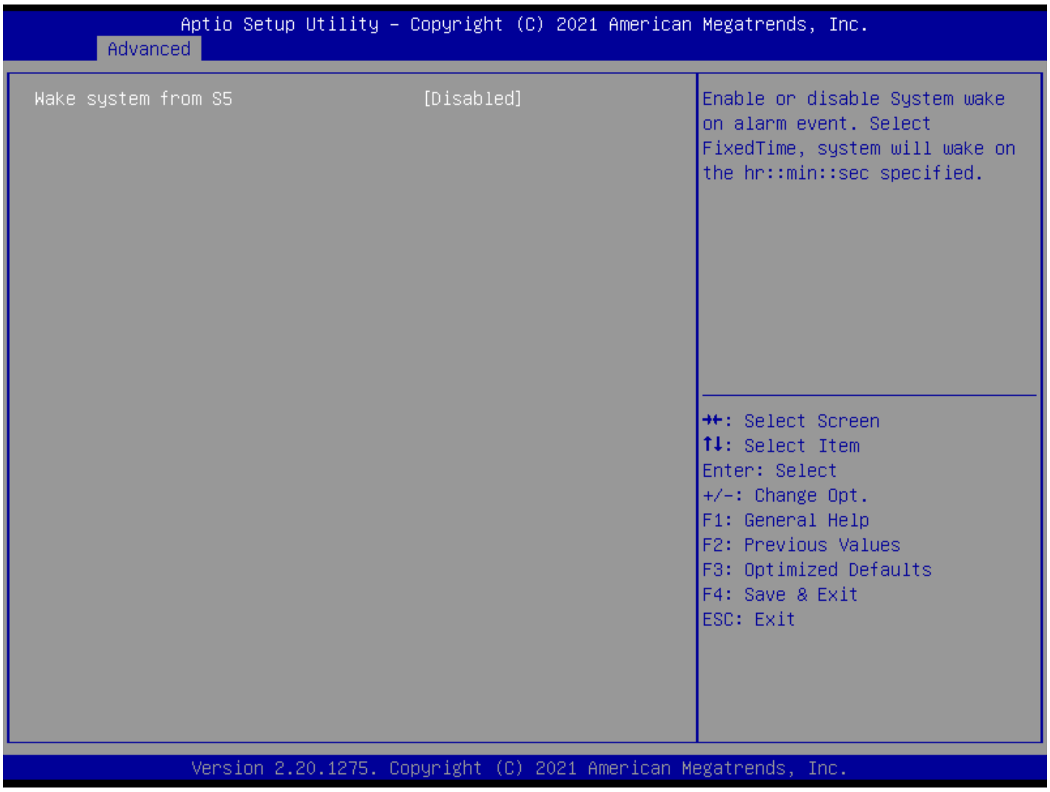

Item	Description
System Fan 1 Fail Warning	**Enabled : Enables System FAN 1 Fail warning alert function** **Disabled : Disables System FAN 1 Fail warning alert function (Default setting)** (This setting will effect only if you add the extend kit on the system)
System Fan 2 Fail Warning	**Enabled : Enables System FAN 2 Fail warning alert function** **Disabled : Disables System FAN 2 Fail warning alert function (Default setting)** (This setting will effect only if you add the extend kit on the system)
System Fan 1 Speed Control	**Normal : Fan speed set by BIOS default (Default setting)** **Full Speed : Set Fan operates at full speed** (This setting will effect only if you add the extend kit on the system)
System Fan 2 Speed Control	**Normal : Fan speed set by BIOS default (Default setting)** **Full Speed : Set Fan operates at full speed** (This setting will effect only if you add the extend kit on the system)
CPU Temperature	Shows current CPU temperature
System Temperature 1	Shows current System temperature
System Temperature 2	Shows current System temperature for the extend kit of the system (This numerical value will shows only if you add the extend kit on the system)
System Fan 1 Speed	Shows current System fan 1 Speed for the extend kit of the system (This numerical value will shows only if you add the extend kit on the system)
System Fan 2 Speed	Shows current System fan 2 Speed for the extend kit of the system (This numerical value will shows only if you add the extend kit on the system)

2.4 S5 RTC Wake Settings



```
        Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc.
   Advanced

 Wake system from S5                  [Disabled]     Enable or disable System wake
                                                     on alarm event. Select
                                                     FixedTime, system will wake on
                                                     the hr::min::sec specified.

                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```
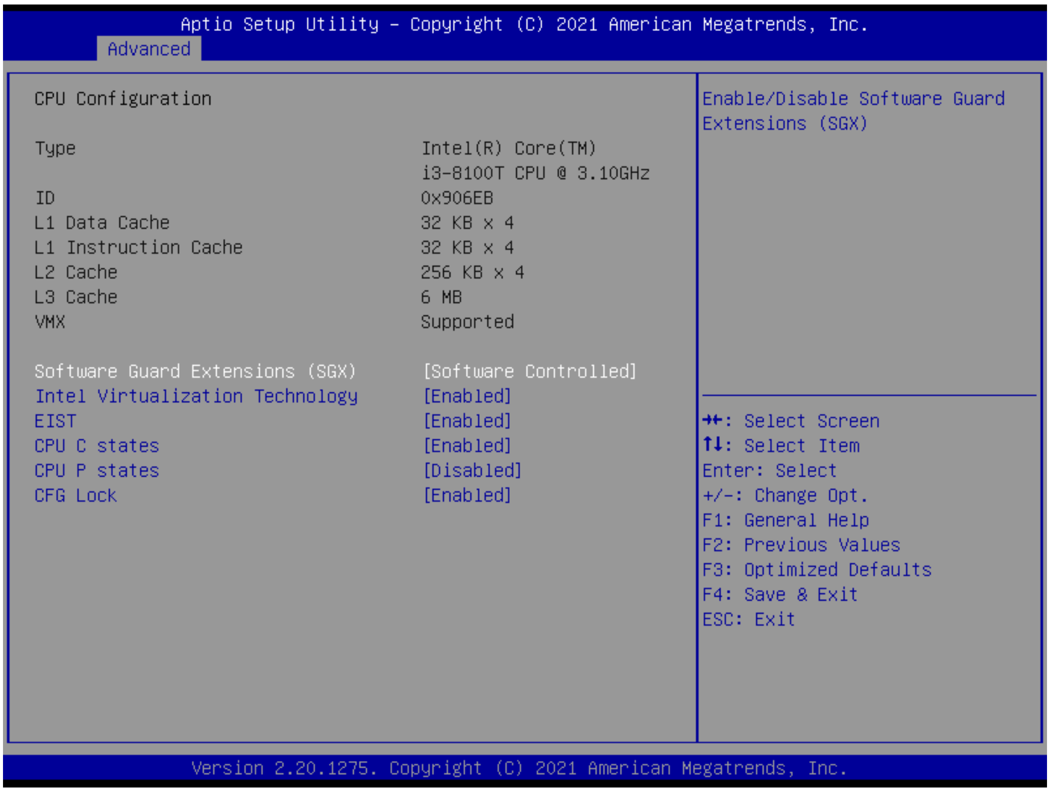

Item	Description
Wake system from S5	Enable or Disable System to wake on a specific time. **Disabled : Disables system to wake on a specific time (Default setting)** **Fixed Time : Enables system to wake on a specific time** **(Format : hr : min : sec)**

2.5 CPU Configuration



```
            Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
         Advanced
  CPU Configuration                                       Enable/Disable Software Guard
                                                          Extensions (SGX)
  Type                                Intel(R) Core(TM)
                                      i3-8100T CPU @ 3.10GHz
  ID                                  0x906EB
  L1 Data Cache                       32 KB x 4
  L1 Instruction Cache                32 KB x 4
  L2 Cache                            256 KB x 4
  L3 Cache                            6 MB
  VMX                                 Supported

  Software Guard Extensions (SGX)     [Software Controlled]
  Intel Virtualization Technology     [Enabled]
  EIST                                [Enabled]           →←: Select Screen
  CPU C states                        [Enabled]           ↑↓: Select Item
  CPU P states                        [Disabled]          Enter: Select
  CFG Lock                            [Enabled]           +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit

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```
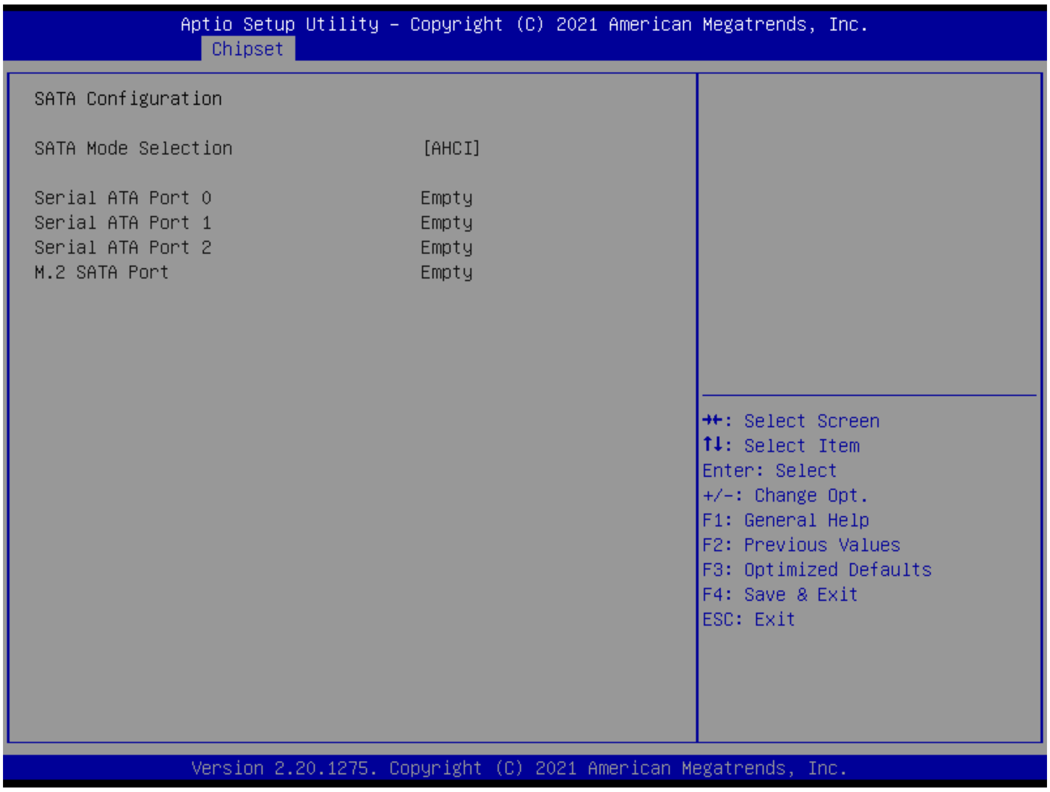

Item	Description
Software Guard Extensions (SGX)	**Disabled : Disables Software Guard Extensions (SGX) (Default seeting)** **Enabled : Enables Software Guard Extensions (SGX)** **Software Controlled : If this item is selected, SGX will be controlled by SGX application for UEFI boot OS**
Intel Virtualization Technology	Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. **Enabled : Enables Intel Virtualization Technology (Default setting)** **Disabled : Disables Intel Virtualization Technology**
EIST	According to System loading, Enhanced Intel SpeedStep Technology (EIST) will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. **Enabled : Enables EIST Technology (Default setting)** **Disabled : Disables EIST Technology**
CPU C states	Command CPU to enter into low power consumption mode when CPU is under idle mode. **Enabled : Enables CPU C states function (Default setting)** **Disabled : Disables CPU C states function**
CPU P states	CPU will adjust frequency depends on it's loading. **Enabled : Enables CPU P states function** **Disabled : Disables CPU P states function (Default setting)**
CFG Lock	**Enabled : Configure MSR 0xE2[15] , CFG Lock bit (Default setting)** **Disabled : Disables CFG Lock**

2.6 SATA And RST Configuration



```
Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
Chipset

SATA Configuration

SATA Mode Selection                  [AHCI]

Serial ATA Port 0                    Empty
Serial ATA Port 1                    Empty
Serial ATA Port 2                    Empty
M.2 SATA Port                        Empty

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```
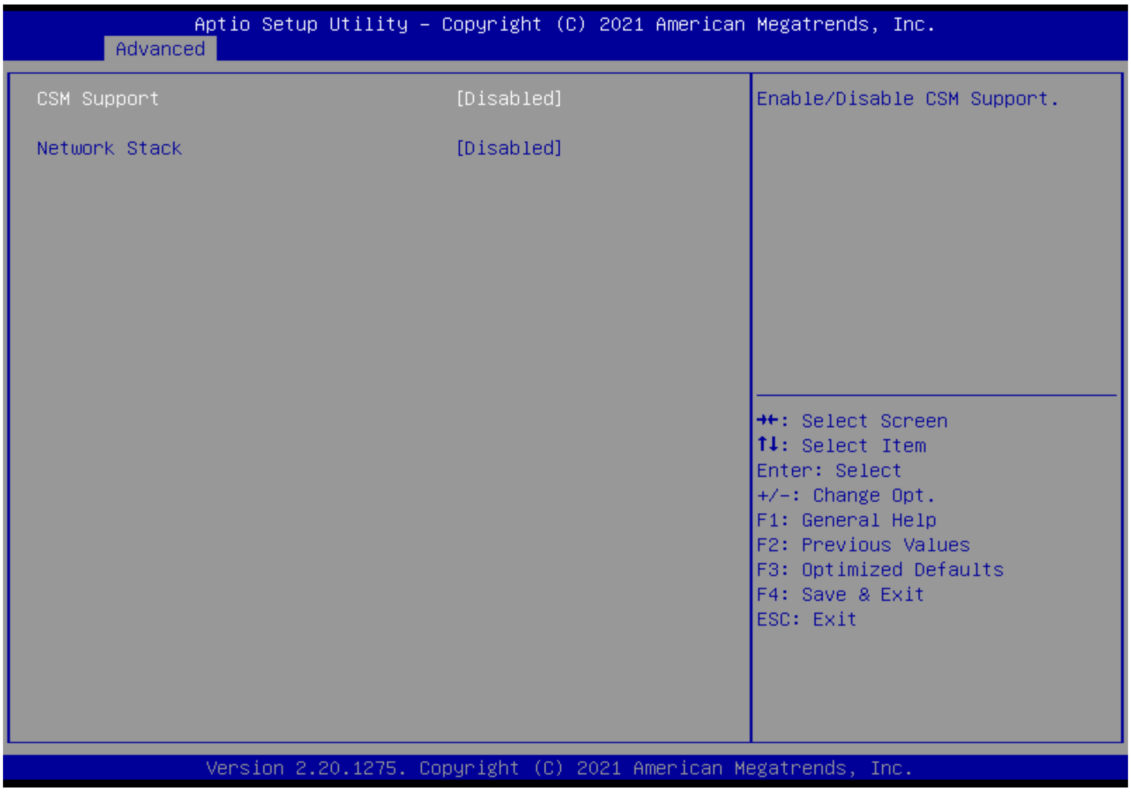

Item	Description
SATA Mode Selection	Set SATA controller to AHCI mode
Serial ATA Port 0	shows 2.5" SATA HDD/SSD information
Serial ATA Port 1	
Serial ATA Port 2	
M.2 SATA Port	shows M.2 SSD information

2.7 CSM Configuration



```
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Advanced

CSM Support                                   [Disabled]

Network Stack                                 [Disabled]
```

Enable/Disable CSM Support.

```
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```
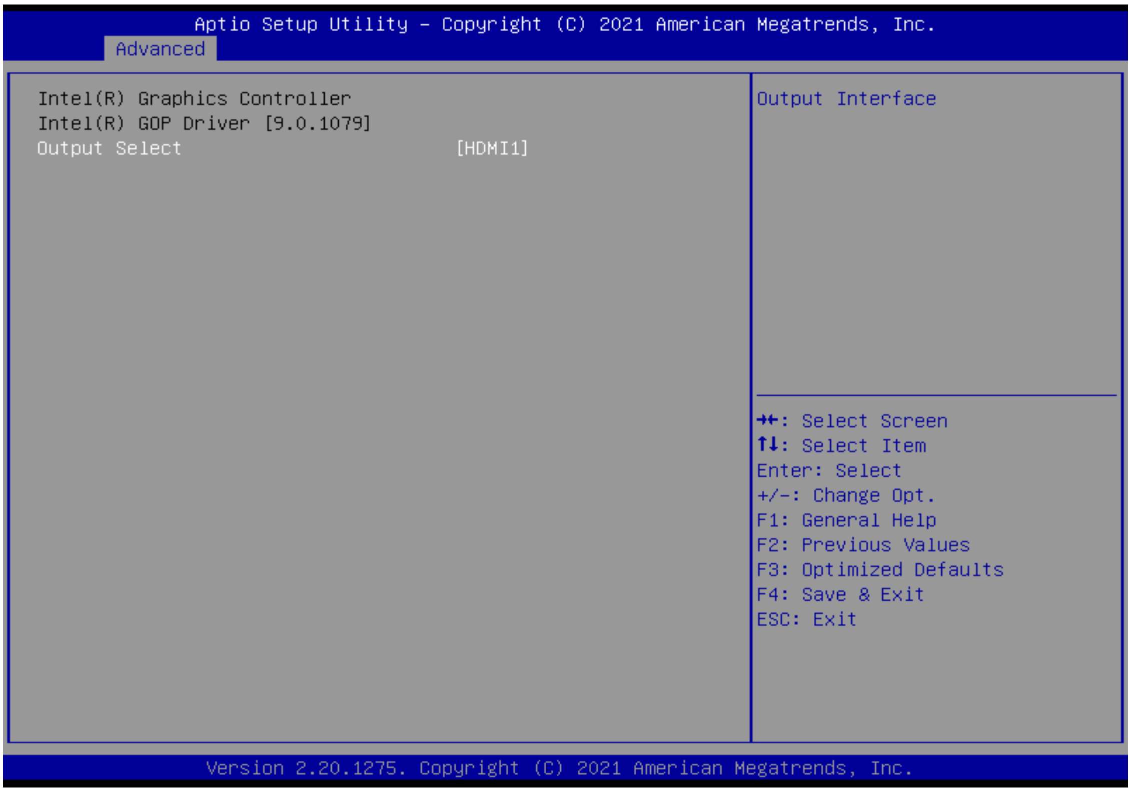

Item	Description
CSM Support	Choose UEFI or Legacy Mode **Disabled : UEFI Mode only (Default setting)** **Enabled : Enables Legacy Mode feature**
Network Stack	When system is power on, install LAN driver under UEFI mode **Disabled : Disables UEFI Network Stack (Default setting)** **Enabled : Enables UEFI Network Stack**

2.8 AMI Graphic Output Protocol Policy



```
Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc.
      Advanced

  Intel(R) Graphics Controller                          Output Interface
  Intel(R) GOP Driver [9.0.1079]
  Output Select                     [HDMI1]

                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```
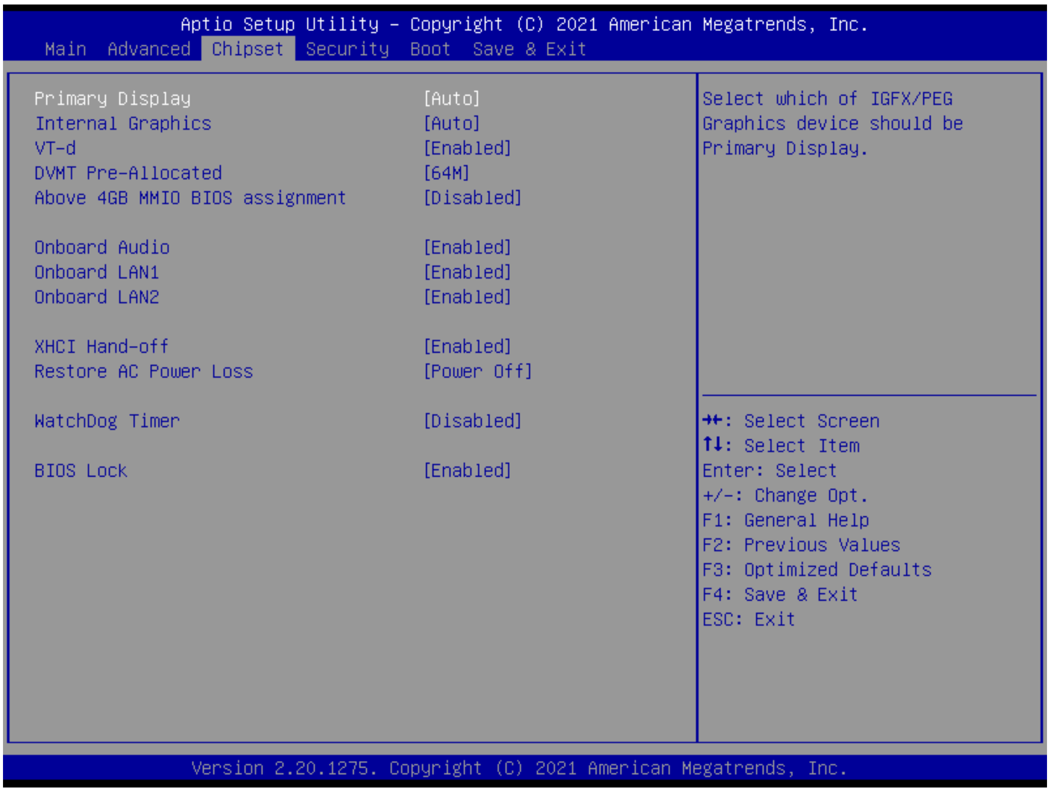

Item	Description
Output Select	Choose default monitor output when there are more than one monitor plugged on the motherboard.

3 Chipset



```
Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.
  Main  Advanced  Chipset  Security  Boot  Save & Exit

Primary Display                       [Auto]          Select which of IGFX/PEG
Internal Graphics                     [Auto]          Graphics device should be
VT-d                                  [Enabled]       Primary Display.
DVMT Pre-Allocated                    [64M]
Above 4GB MMIO BIOS assignment        [Disabled]

Onboard Audio                         [Enabled]
Onboard LAN1                          [Enabled]
Onboard LAN2                          [Enabled]

XHCI Hand-off                         [Enabled]
Restore AC Power Loss                 [Power Off]

WatchDog Timer                        [Disabled]      →←: Select Screen
                                                      ↑↓: Select Item
BIOS Lock                             [Enabled]       Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit

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```
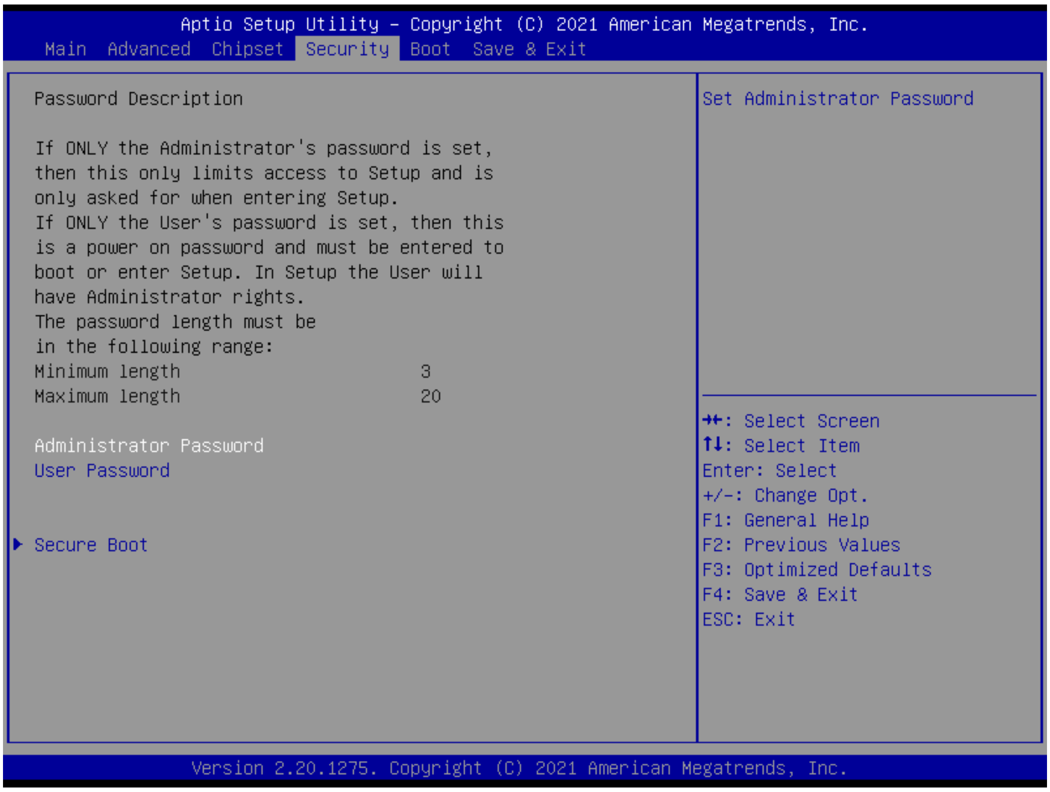

Item	Description
Primary Display	**Auto : When detects PCIe Graphic card, primary display will set to PCIe (Default setting)** **IGFX : Force IGFX Graphic card as the primary display device** **PEG : Force PEG Graphic card as the primary display device**
Internal Graphics	Enables or disables the onboard graphics function **Auto : Detects display device automatically (Default setting)** **Enabled : Enables onboard graphics** **Disabled : Disables onboard graphics**
VT-d	**Enabled : Enables VT-d function (Default setting)** **Disabled : Disables VT-d function**
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor **Option items : 32M , 64M(Default setting), 128M, 256M**
Above 4GB MMIO BIOS assignment	Enable or disable to re-allocate memory space for device cards when more than one external graphic cards installed. (This function could be only used under 64 bit operating system with above 4 GB address space) **Enabled : Enables Above 4GB MMIO BIOS assignment function** **Disabled : Disables Above 4GB MMIO BIOS assignment function (Default setting)**
Onboard Audio	Enable/Disable onboard audio controller **Enabled : Enables onboard audio controller (Default setting)** **Disabled : Disables onboard audio controller**
Onboard LAN1 Onboard LAN2	Enable/Disable onboard LAN controller **Enabled : Enables onboard LAN controller (Default setting)** **Disabled : Disables onboard LAN controller**
XHCI Hand-off	Enable/Disable XHCI Hand-off function **Enabled : Enables XHCI Hand-off function (Default setting)** **Disabled : Disables XHCI Hand-off function**
Restore AC Power Loss	To set which option the system should returns if a sudden power loss occured **Power off : Do not power on when the power is back (Default setting)** **Power on : System power on when the power is back** **Last state : Restore the system to the state before power loss occures**
Watchdog Timer	Enable/Disable Watchdog Timer function **Disabled : Disabled Watchdog Timer function (Default setting)** **15s : delay watchdog for 15 seconds.** **30s : delay watchdog for 30 seconds.** **60s : delay watchdog for 60 seconds.**
BIOS Lock	Enable/Disable BIOS Lock function **Enabled : Enables BIOS Lock function (Default setting)** **Disabled : Disabled BIOS Lock funtion**

4 Security



```
Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc.
  Main  Advanced  Chipset  Security  Boot  Save & Exit

Password Description                               Set Administrator Password

If ONLY the Administrator's password is set,
then this only limits access to Setup and is
only asked for when entering Setup.
If ONLY the User's password is set, then this
is a power on password and must be entered to
boot or enter Setup. In Setup the User will
have Administrator rights.
The password length must be
in the following range:
Minimum length                    3
Maximum length                    20
                                                   →←: Select Screen
Administrator Password                             ↑↓: Select Item
User Password                                      Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
▶ Secure Boot                                      F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

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```
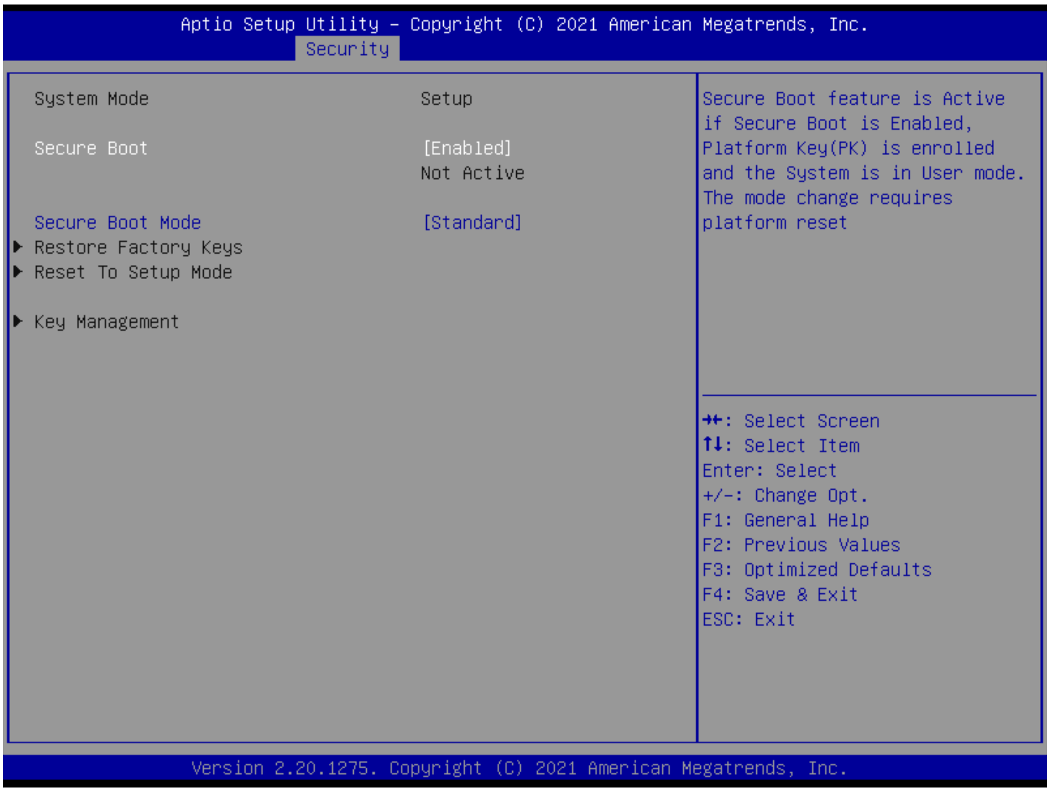

Item	Description
Administrator Password	To set up Administrator's password **Minimum length : 3** **Maximum length : 20**
User Password	To set up User's password **Minimum length : 3** **Maximum length : 20**
Secure Boot	Press <Enter> to configure the advanced items



```
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                      Security

  System Mode                          Setup            Secure Boot feature is Active
                                                        if Secure Boot is Enabled,
  Secure Boot                          [Enabled]        Platform Key(PK) is enrolled
                                       Not Active       and the System is in User mode.
                                                        The mode change requires
  Secure Boot Mode                     [Standard]       platform reset
▶ Restore Factory Keys
▶ Reset To Setup Mode

▶ Key Management
                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```
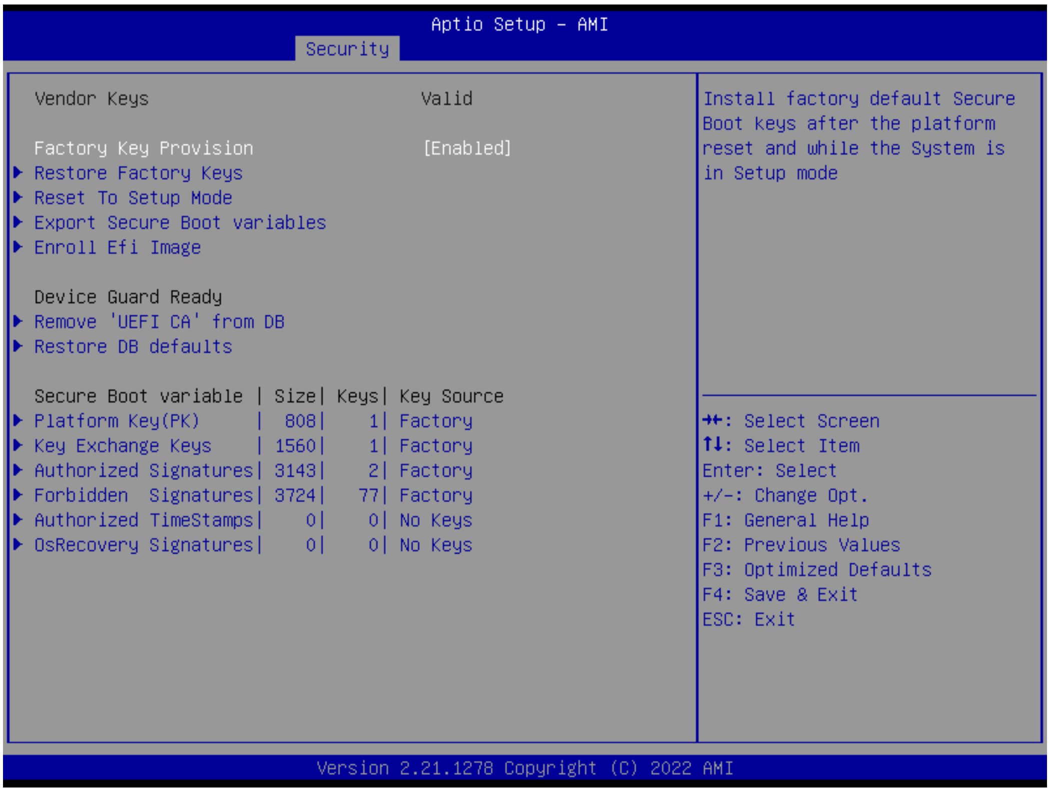

Item	Description
Secure Boot	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates **Enabled : Enables Secure Boot function (Default setting)** **Disabled : Disables Secure Boot function**
Secure Boot Mode	**Standard : Standard mode (Default setting)** **Custom : Custom mode**
Restore Factory Keys	To restore factory settings **Yes : Agree to restore factory settings** **No : Cancel to restore factory settings**
Reset To Setup Mode	**Yes : Agree to setup mode** **No : Cancel to setup mode**
Key Management	Enables expert users to modify Secure boot policy variables without full authentication Press <Enter> to configure the advanced items

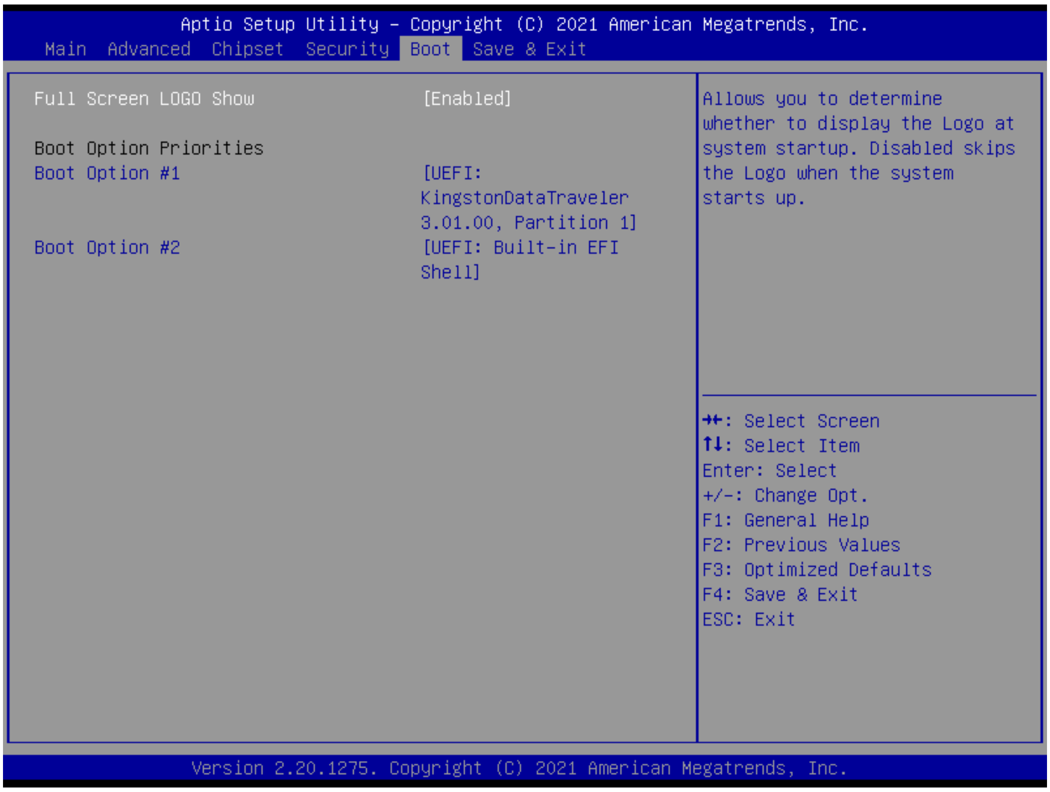


```
                              Aptio Setup - AMI
                          Security
  Vendor Keys                               Valid          | Install factory default Secure
                                                           | Boot keys after the platform
  Factory Key Provision                     [Enabled]      | reset and while the System is
▶ Restore Factory Keys                                     | in Setup mode
▶ Reset To Setup Mode                                      |
▶ Export Secure Boot variables                             |
▶ Enroll Efi Image                                         |
                                                           |
  Device Guard Ready                                       |
▶ Remove 'UEFI CA' from DB                                 |
▶ Restore DB defaults                                      |
                                                           |
  Secure Boot variable | Size| Keys| Key Source            |----------------------------
▶ Platform Key(PK)     |  808|    1| Factory               | →←: Select Screen
▶ Key Exchange Keys    | 1560|    1| Factory               | ↑↓: Select Item
▶ Authorized Signatures| 3143|    2| Factory               | Enter: Select
▶ Forbidden  Signatures| 3724|   77| Factory               | +/-: Change Opt.
▶ Authorized TimeStamps|    0|    0| No Keys               | F1: General Help
▶ OsRecovery Signatures|    0|    0| No Keys               | F2: Previous Values
                                                           | F3: Optimized Defaults
                                                           | F4: Save & Exit
                                                           | ESC: Exit
                    Version 2.21.1278 Copyright (C) 2022 AMI
```

Item	Description
Factory Key Provision	Install factory default Secure Boot keys after the platform reset and while the system is in Setup mode **Enabled : Enables Factory Key Provision** **Disabled : Disables Factory Key Provision (Default setting)**
Restore Factory Keys	To restore factory settings **Yes : Agree to restore factory settings** **No : Cancel to restore factory settings**
Enroll Efi Image	Allow the image to run in Secure Boot mode
Restore DB defaults	Restore DB variables to factory defaults **Yes : Agree to restore DB defaults** **No : Cancel to restore DB defaults**

Item	Description
Platform Key (PK)	These items allows you to enroll factory defaults or load Certificates from a file.
Key Exchange Keys	
Authorized Signatures	
Forbidden Signatures	
Authorized TimeStamps	
OsRecovery Signatures	

5 Boot



```
                 Aptio Setup Utility – Copyright (C) 2021 American Megatrends, Inc.
   Main  Advanced  Chipset  Security  Boot  Save & Exit

  Full Screen LOGO Show                 [Enabled]             Allows you to determine
                                                              whether to display the Logo at
  Boot Option Priorities                                      system startup. Disabled skips
  Boot Option #1                        [UEFI:                the Logo when the system
                                        KingstonDataTraveler  starts up.
                                        3.01.00, Partition 1]
  Boot Option #2                        [UEFI: Built-in EFI
                                        Shell]

                                                              →←: Select Screen
                                                              ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit

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```
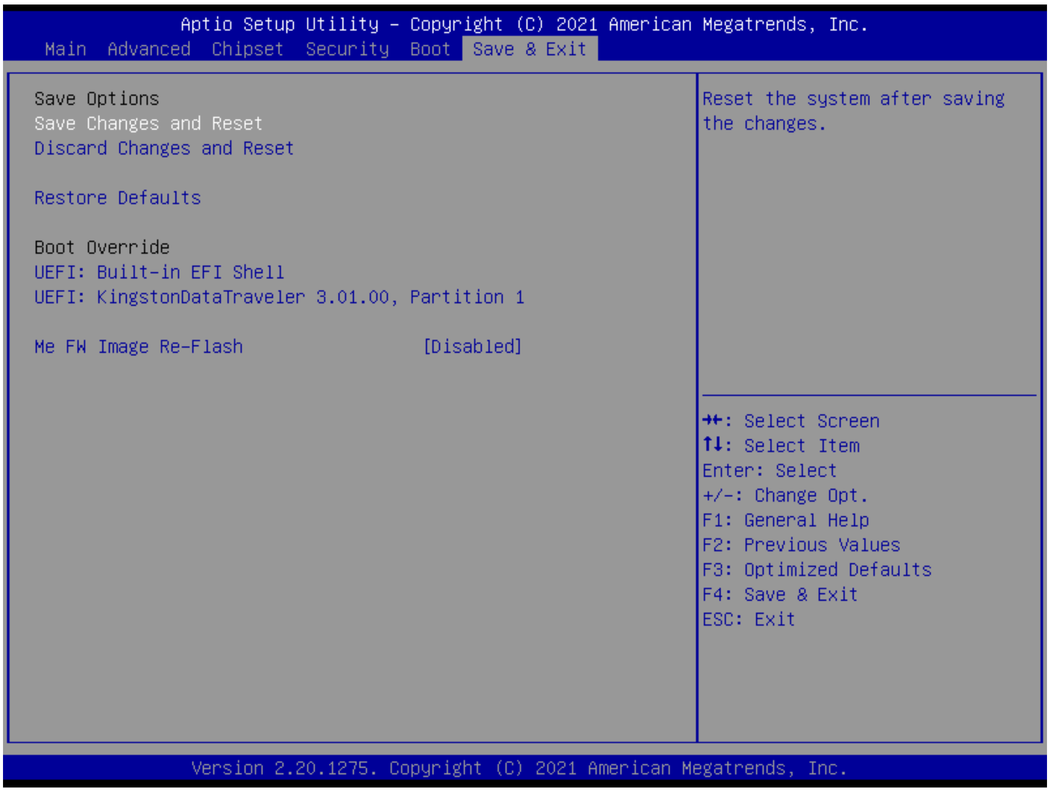

Item	Description
Full Screen LOGO Show	Enable/Disable full screen LOGO show on POST screen **Enabled : Enables Full screen LOGO Show on POST screen (Default setting)** **Disabled : Disables Full screen LOGO Show on POST screen**
Boot Option #1 **Boot Option #2**	Shows the information of the storage that be installed in the system **Choose/set the boot priority**

6 Save & Exit



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Main Advanced Chipset Security Boot Save & Exit

```
Save Options                                          Reset the system after saving
Save Changes and Reset                                the changes.
Discard Changes and Reset

Restore Defaults

Boot Override
UEFI: Built-in EFI Shell
UEFI: KingstonDataTraveler 3.01.00, Partition 1

Me FW Image Re-Flash               [Disabled]
```

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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Item	Description
Save Changes and Reset	After configuring all the options that you wish to change, choose this option to save all the changes and reboot the system **Yes : Agree to save and reset** **No : Cancel to save and reset**
Discard Changes and Reset	Choose this option to reboot the system without saving any changes **Yes : Agree to discard changes and reset** **No : Cancel to discard changes and reset**
Restore Defaults	Restore/Load default values for all the setup options **Yes : Agree to load optimized defaults** **No : Cancel to load optimized defaults**
Me FW Image Re-Flash	Enable/Disable Me FW image re-flash function **Enabled : Enables Me FW image re-flash function** **Disabled : Disables Me FW image re-flash function (Default setting)**