# *TECHNICAL MANUAL*

# *Of*

# *Of Intel H610/Q670E Express Chipset*

# *Based Micro-ATX M/B*

**No. G03-MM10-F**

**Rev: 2.0**

**Release date: March 26, 2024**

**Trademark:**

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## CAUTION Environmental Safety Instruction

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.
- 0 to 40 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)
- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.
- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.
- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

## Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.

## USER'S NOTICE

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## Manual Revision Information

| Reversion | Revision History | Date |
|---|---|---|
| 2.0 | Second Edition | March 26, 2024 |

## Item Checklist

- ☑ Motherboard
- ☑ Cable(s)
- ☑ I/O Back panel shield

# Chapter 1
# Introduction of the Motherboard

## 1-1 Specification

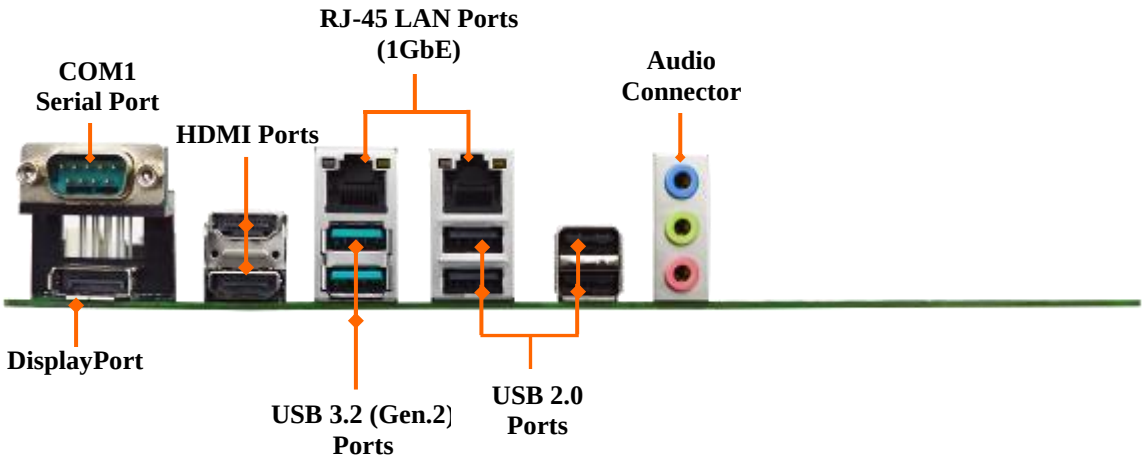
| Spec | Description |
|---|---|
| **Design** | ● Micro ATX form factor; PCB size: 24.4 x24.4 cm |
| **Chipset** | ● **MM10-H6100/6102 series**: Intel H610 Chipset<br>● **MM10-Q6700/6702 series**: Intel Q670E Chipset |
| **CPU Socket** | ● Intel LGA 1700 Socket supports 12th/13th/14th processors (Max. **65W** TDP)<br>**Note: for detailed CPU support information please visit our website* |
| **Memory Slots** | ● **MM10-H6100/6102 series**: 2* Long DIMM DDR5 slot for 2* DDR5 up to 4800MHz RAM Module<br>● **MM10-Q6700/6702 series**: 4* Long DIMM DDR5 slot for 4* DDR5 up to 4800MHz RAM Module<br>● Support dual channel function<br>*Maximum capacity: up to 128GB (**MM10-H6100/6102 series** support up to 64GB)*<br>*Maximum frequency: 4800 MHz (depends on CPU support)* |
| **Expansion Slots** | ● 1* PCI-Express 5.0 x16 slot *(**PCIE1**)*<br>● 1* PCI-Express 4.0 x4 slot *(**PCIE2 for MM10-Q6700/6702 Series only**)*<br>● 2* PCI-Express 3.0 x4 slot *(**PCIE3/4**).*<br>● 1* M.2 E-key 2230 USB2.0 interface support CNVi **(M2E1 for MM10-H6100/6102 series)**<br>● 1* M.2 E-key 2230 USB2.0/PCIe 3.0x1 interface support CNVi **(M2E1 for MM10-Q6700/6702 series)** |
| **Storage** | ● **MM10-H6100/6102 series**:<br>3* SATAIII 6Gb/s port s *(**SATA2 support powered SATA DOM**)*<br>1* M.2 M-key 2242/2260/2280/22110 SATA slot (**M2M1**)<br>● **MM10-Q6700/6702 series**:<br>3*SATAIII 6Gb/s port support RAID 0/1/5 *(**SATA2 support powered SATA DOM**)*<br>1* M.2 M-key 2242/2260/2280/22110 SATA/PCIe 4.0x4 interface supports NVMe (***M2M1***)<br>***Note:** Support RAID 0/1 by using SATA3 and SATA4; RAID 0/1/5 by using SATA3, SATA4, and SATA2; RAID 0/1/5/10 by using SATA3, SATA4, SATA2, M.2 M-key with SATA interface.* |
| **LAN Chips** | ● **MM10-H6100/6102 series**: 1* Intel i219V GbE & 1* Realtek RTL8153 GbE<br>● **MM10-Q6700/6702 series**: 1* Intel i219LM GbE, 1* Realtek RTL8153 GbE, 1* Intel i225V 2.5GbE<br>***Note: 2500Mbps** high-speed transmission rate is only supported over CAT 5e UTP cable.* |
| **BIOS** | ● AMI 256M Bit AMI Flash ROM |

| | |
|---|---|
| **Multi I/O** | ***Rear Panel I/O:***<br>● 2* HDMI<br>● 1* DP<br>● 2* 1GbE RJ-45 LAN port<br>● 1* 2.5GbE RJ-45 LAN port (**MM10-Q6700/6702 Series only**)<br>● 1* COM (RS232/422/485)<br>● 1* 3-jack audio connector (Line-in, Line-out, MIC)<br>● **MM10-H6100/6102 Series:** 2* USB 3.2 (Gen.2) + 4* USB 2.0<br>● **MM10-Q6700/6702 Series**: 6* USB 3.2 (Gen.2)<br><br>***Internal I/O Connectors & Headers:***<br>● 1* 24-pin main power connector<br>● 1* 8-pin 12V power connector<br>● 1* CPUFAN connector & 2* SYSFAN connectors<br>● 1* Front panel header<br>● 1* 10-Pin USB 3.2 (Gen.1) header<br>● 1* 4-Pin USB 2.0 header<br>● 2* Vertical USB 2.0 headers<br>● **MM10-H6100/6102 Series**: 2* 9-Pin USB 2.0 headers for 4* USB 2.0 ports<br>● **MM10-Q6700/6702 Series**: 4* 9-Pin USB 2.0 headers for 8* USB 2.0 ports<br>● 5* RS232 COM port headers<br>● 1* 15-Pin VGA port header<br>● 1* 8-bit GPIO header<br>● 1* PS/2 Keyboard & Mouse header<br>● 1* 5-Pin SMBUS header |
| **TPM 2.0 Function** | ● Optional for **MM10-H6102** & **MM10-Q6702 Series** |

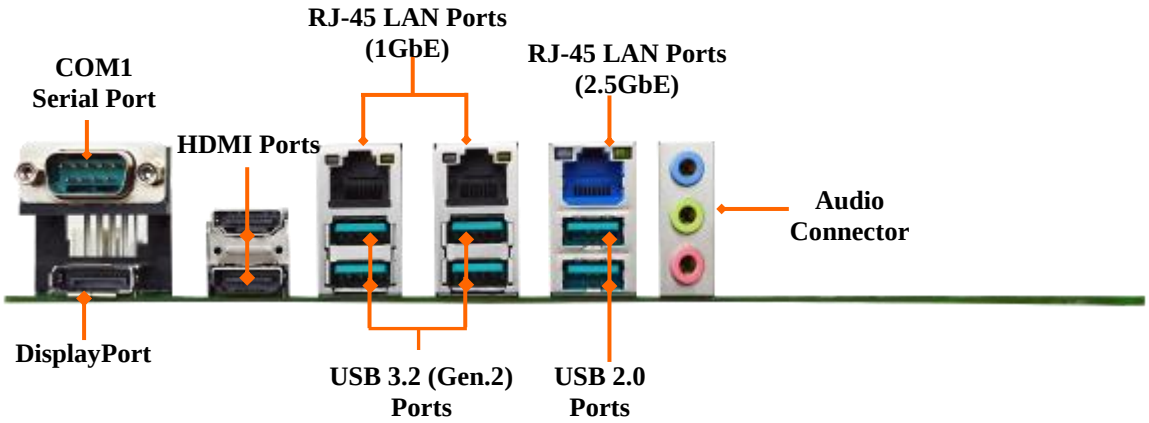
## 1-2 Layout Diagram

### *Rear IO Diagram*

### *MM10-H6100/6102 Series:*



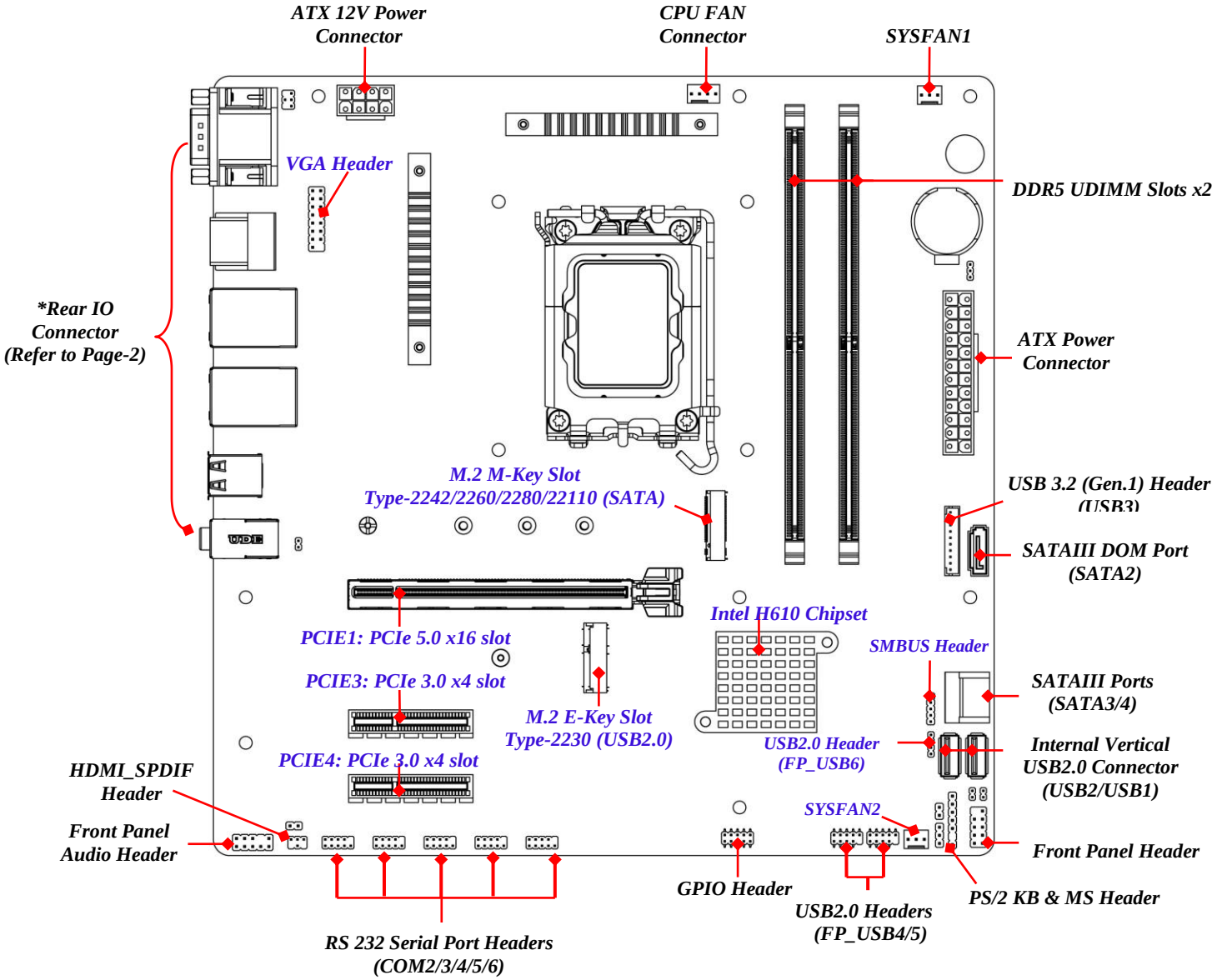

### *MM10-Q6700/6702 Series:*



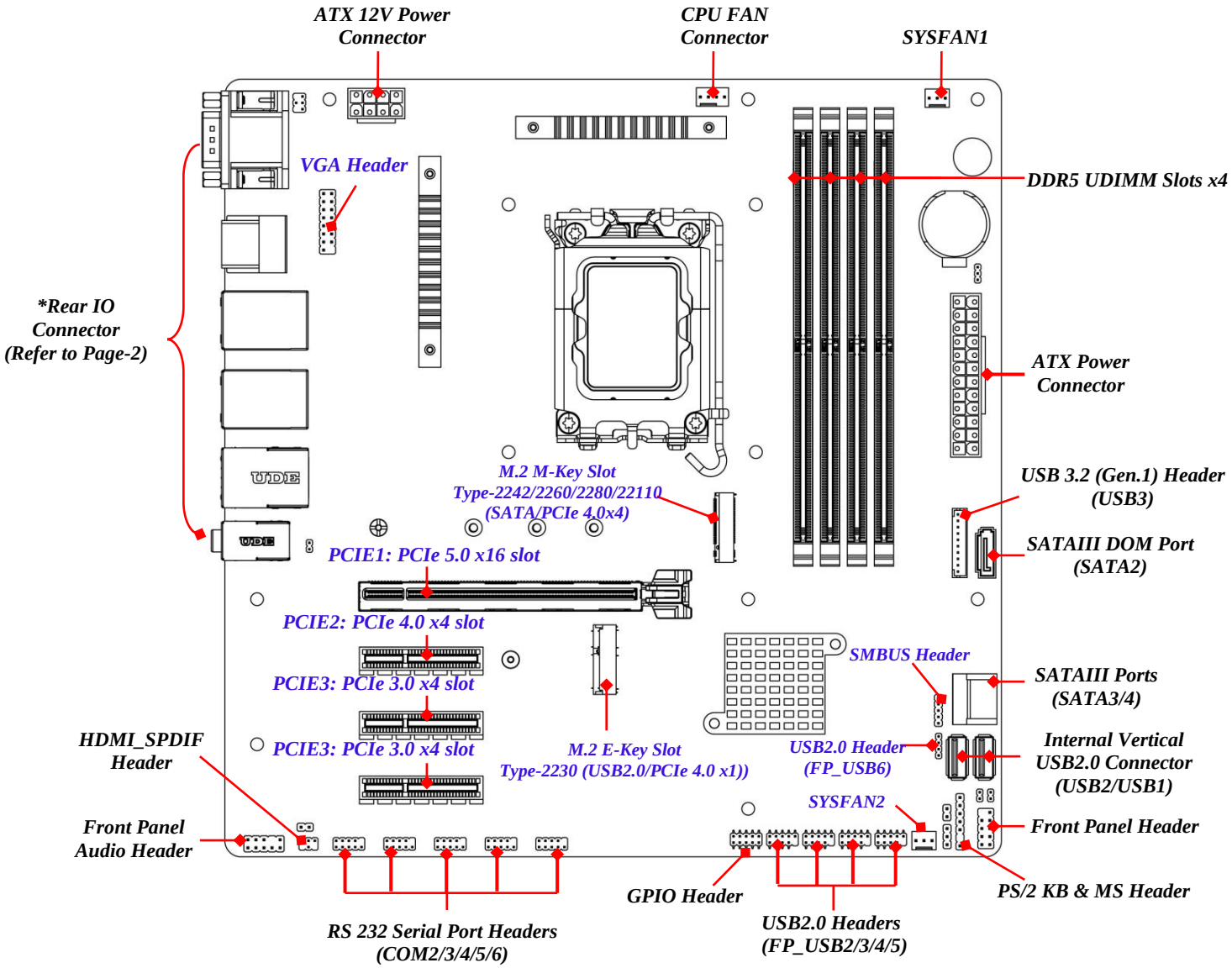

***Note:** **COM1** support RS232/422/485 function for both **MM10-H6100/6102 Series** and **MM10-Q6700/6702 Series**.*

## *Motherboard Internal Diagram*

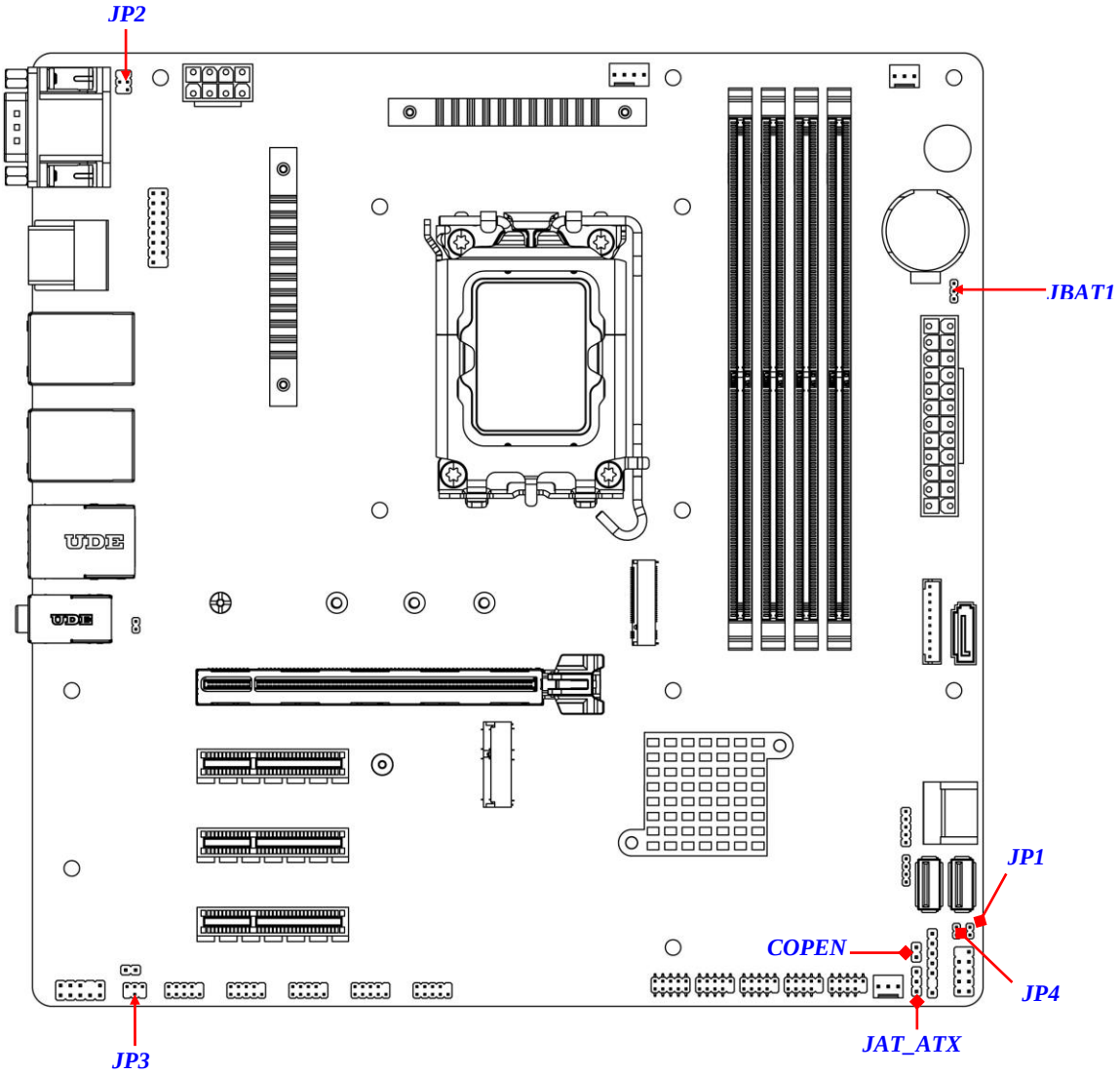
## *MM10-H6100/6102 Series:*



## MM10-Q6700/6702 Series:



## *Motherboard Jumper Position:*




***Note**: The diagrams in the manual are mostly taken from **MM10-Q6700/6702** series unless otherwise stated.*

## *Jumper*

| Jumper | Name | Description | Pitch |
|---|---|---|---|
| JBAT1 | Clear CMOS RAM Settings | 3-pin Block | 2.0mm |
| JAT_ATX | ATX/AT Mode Select | 3-pin Block | 2.54mm |
| COPEN | Case Open Message Display Detect | 2-pin Block | 2.54mm |
| JP1 | ME Features Select | 2-pin Block | 2.0mm |
| JP2 | COM1 Port Pin9 Function Select | 4-pin Block | 2.0mm |
| JP3 | COM2 Port Pin9 Function Select | 4-pin Block | 2.0mm |
| JP4 | GPIO/80 Port Select | 2-pin Block | 2.0mm |

## *Connectors*

| Connector | Name |
|---|---|
| COM1 | Serial Port X1 |
| DP | Display 1.4a Port X1<br>*(Max Resolution: 4096x2304@60Hz)* |
| HDMI1-2 | HDMI 2.0b Port X2<br>*(Max Resolution: 4096x2160@60Hz)* |
| UL1 | **Top:** 1GbE RJ-45 Port X1<br>**Middle & Bottom:** USB 3.2 (Gen.2) Port X2 |
| UL2 | **Top:** 1GbE RJ-45 LAN Port X1<br>**Middle & Bottom**: USB 2.0 Port X2 (**MM10-H6100/6102**)<br>USB 3.2 (Gen.2) Port X2<br>(**MM10-Q6700/6702**) |
| UL3 | **MM10-H6100/6102:** USB 2.0 Port X2<br><br>**MM10-Q6700/6702:**<br>**Top:** 2.5GbE RJ-45 Port X1<br>**Middle & Bottom:** USB 3.2 (Gen.2) X2 |
| ATXPWR1 | ATX Type Main Power Connector |
| ATX12V1 | ATX 12V Power Connector |
| CPUFAN1 | CPU FAN Connector |
| SYSFAN1/2 | System FAN Connector X6 |
| SATA2 | SATAIII Connector X1 |
| SATA_RA3 | SATAIII Connector X2 |

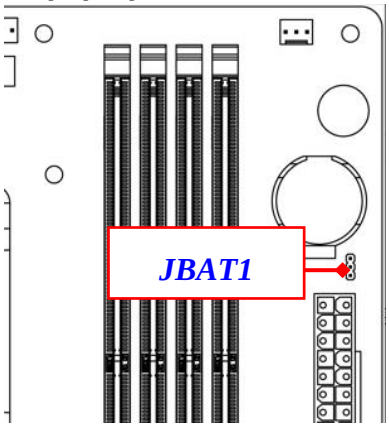
## *Headers*

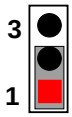
| Header | Name | Description | Pitch |
|---|---|---|---|
| FP<br>(Front Panel Header) | PWR LED/ HD LED/ Power Button /Reset | 10-pin Block | 2.54mm |
| **MM10-Q6700/6702 Series only :**<br>FP_USB2/FP_USB3 | USB 2.0 Port Header X2 | 9-pin Block | 2.0mm |
| FP_USB4/FP_USB5 | USB 2.0 Port Header X2 | 9-pin Block | 2.0mm |
| FP_USB6 | USB 2.0 Port Header X1 | 4-pin Block | 2.0mm |
| USB3 | USB 3.2 (Gen.1) Port Header | 10-pin Block | 2.0mm |
| COM2/3/4/5/6 | RS232 Serial Port Header X5 | 9-pin Block | 2.54mm |
| GPIO | GPIO Header | 10-pin Block | 2.0mm |
| PS2KBMS | PS/2 Keyboards & Mouse Header | 6-pin Block | 2.54mm |
| SMBUS1 | SMBUS Header | 5-pin Block | 2.0mm |

# Chapter 2
# Hardware Installation

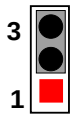
## 2-1 Jumper Setting

**JBAT1 (3-pin): Clear CMOS  Pitch=2.0mm**



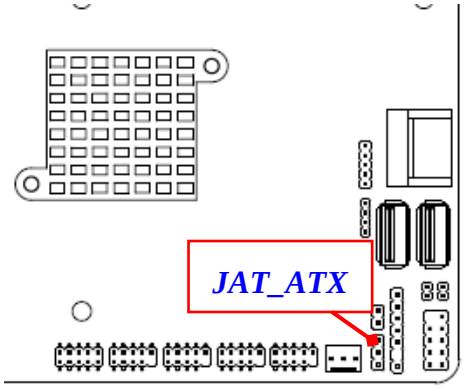



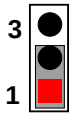

**1-2 Closed: Normal (Default);**



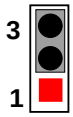

**2-3 Closed: Clear CMOS Settings.**

**JAT_ATX (3-pin): ATX Mode/AT Mode Select  Pitch=2.54mm**



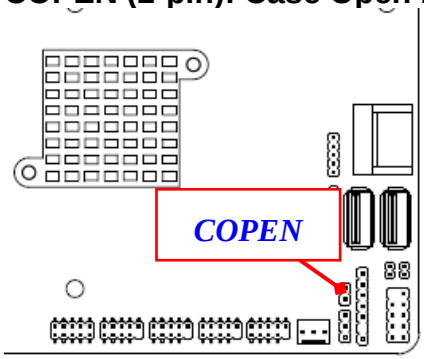

**1-2 Closed: ATX Mode Selected;**

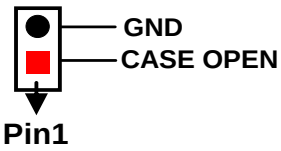



**2-3 Closed: AT Mode Selected.**

***ATX Mode Selected:** Press power button to power on after power input ready;*
***AT Mode Selected:** Directly power on as power input ready.*

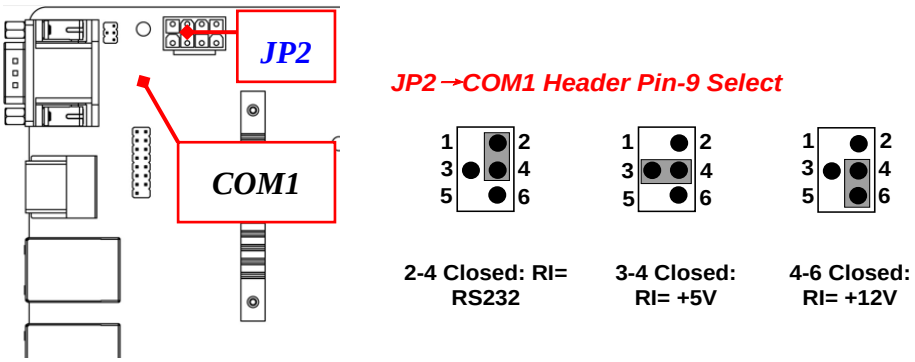
**COPEN (2-pin): Case Open Message Display Function  Pitch=2.54mm**



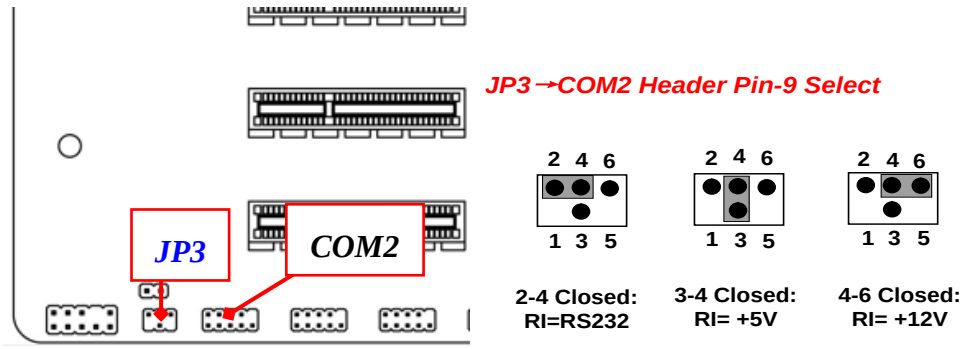
**Pin 1-2 Short**: *When Case open function pin short to GND, the Case open function was detected. When Used, needs to enter BIOS and enable 'Case Open Detect' function. In this case if your case is removed, next time when you restart your computer, a message will be displayed on screen to inform you of this.*

## JP2 (4-piin): COM1 Header Pin9 Select  Pitch=2.0mm



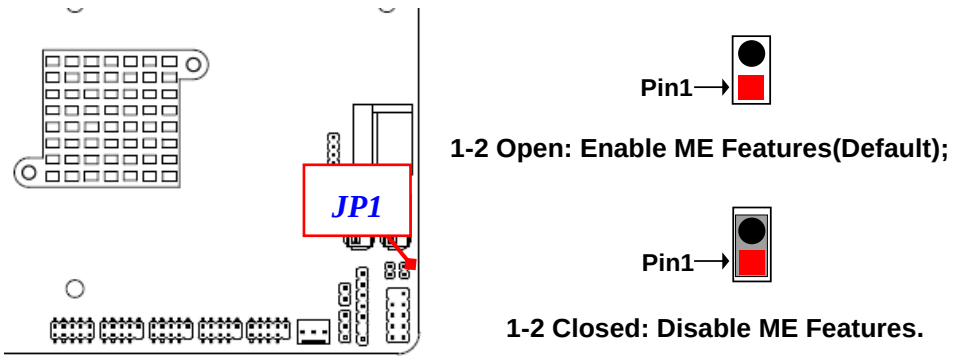

***Note:** Maximum current limit is 500mA while using 5V or 12V.*

## JP3 (4-pin): COM2 Header Pin9 Select  Pitch=2.0mm

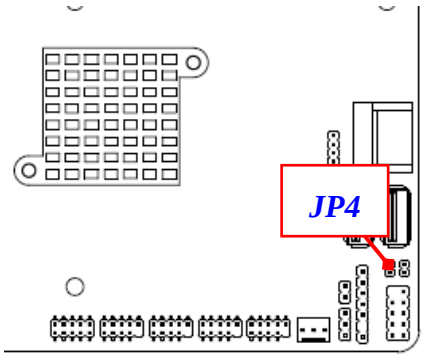


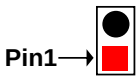

***Note:** Maximum current limit is 500mA while using 5V or 12V.*

## JP1 (2-pin): ME Features Select  Pitch=2.0mm

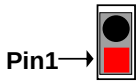


**JP4 (2-pin): GPIO/80 PORT MODE Select  Pitch2.0mm**




**1-2 Open: GPIO= 80 Port;**




**1-2 Closed: GPIO= GPIO Port (Default).**

## 2-2 Connector and Headers

### *2-2-1* Rear I/O Back Panel Connectors

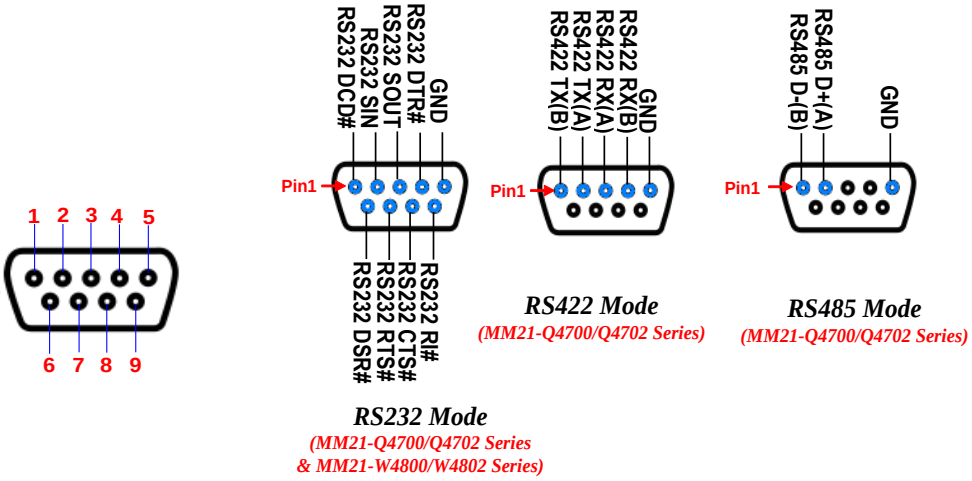
***Refer to Page-2 Rear IO Diagram***

| *Icon* | *Name* | *Function* |
|---|---|---|
| | **Serial Port** | Mainly for user to connect external MODEM or other devices that supports Serial Communications Interface. |
| | **HDMI 2.0 Port** | To connect display device that support HDMI specification. |
| | **Display 1.4 Port** | To the system to corresponding display device with compatible display port cable. |
| | **RJ-45 LAN Port** | This connector is standard RJ-45 LAN jack for Network connection. These two RJ-45 LAN port from **UL1** and **UL2** support 1.0GbE transfer rate. |
| | **RJ-45 LAN Port** | This connector is standard RJ-45 LAN jack for Network connection. These two RJ-45 LAN port from **UL3** support 2.5GbE transfer rate. (**MM10-Q6700/6702** only) (***Note: 2.5Gbps is only supported with CAT5e UTP cable***). |
| | **USB 3.2 (Gen.2) Port** | To connect USB keyboard, mouse or other devices compatible with USB 3.2(Gen.2) specification. Ports support up to 10Gbps data transfer rate. |
| | **USB 2.0 Port** | To connect USB keyboard, mouse or other devices compatible with USB 2.0 specification. Ports support up to 480Mbps data transfer rate. |

| | | |
|---|---|---|
| | **Audio Connectors** | **BLUE**: Line-in Connector<br>**GREEN**: Line-out Connector<br>**PINK**: MIC Connector |

**COM1 (9-pin Block): Serial Port**

The pin assignment for RS232/422/485 is listed as follows:




***Note:** **COM1** support **RS232/422/485** function.*

## 2-2-2 Motherboard Internal Connectors

### (1) ATXPWR1 (24-pin block): Main Power Connector

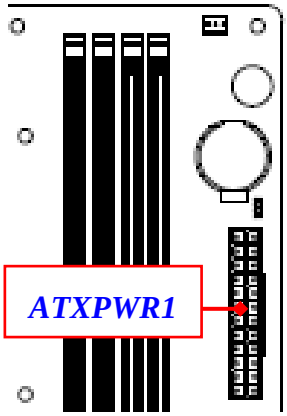
ATX Power Supply connector: This is a new defined 24-pins connector that usually comes with ATX case. The ATX Power Supply allows using soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

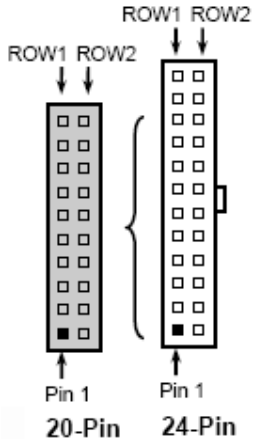
** We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 350W power rating. This type has 24-pin and 4-pin power plugs.

** If you intend to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and the power supply unit has a minimum power rating of 350W. The system may become unstable or may not boot up if the power is inadequate.

** If you are using a 20-pin power plug, please refer to Figure1 for power supply connection. Power plug form power supply and power connectors from motherboard both adopt key design to avoid mistake installation. You can insert the power plug

into the connector with ease only in the right direction. If the direction is wrong it is hard to fit in and if you make the connection by force if is possible.




| PIN | ROW1 | ROW2 |
|---|---|---|
| 1 | 3.3V | 3.3V |
| 2 | 3.3V | -12V |
| 3 | GND | GND |
| 4 | 5V | Soft Power On |
| 5 | GND | GND |
| 6 | 5V | GND |
| 7 | GND | GND |
| 8 | Power OK | -5V |
| 9 | +5V (for Soft Logic) | +5V |
| 10 | +12V | +5V |
| 11 | +12V | +5V |
| 12 | +3V | GND |

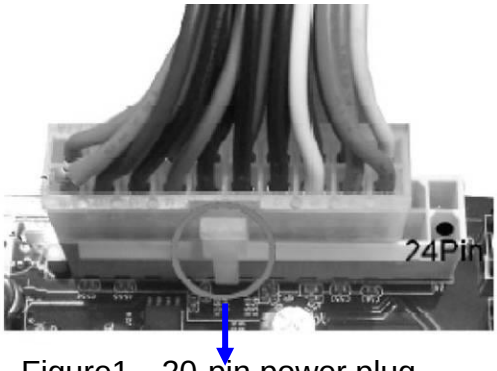



Figure1：20-pin power plug

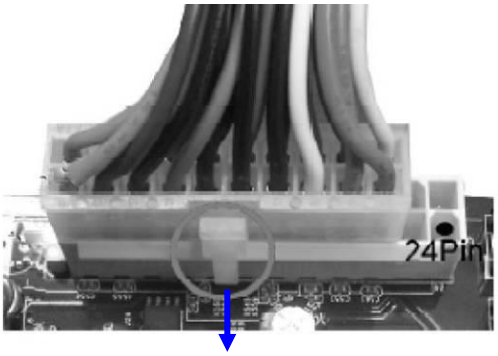
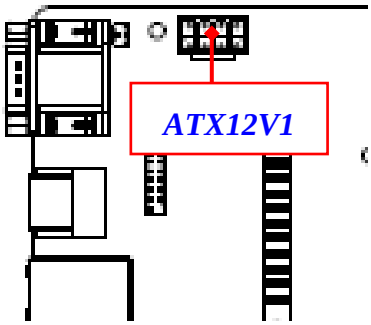
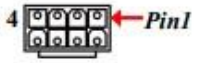


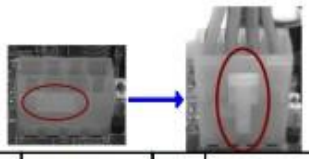

Figure 2：24-pin power plug

**(2) ATX12V1(8-pin): 12V Power Connector**

This is a new defined 8-pin connector that usually comes with ATX Power Supply. The ATX Power Supply which fully supports AMD AM3 processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.

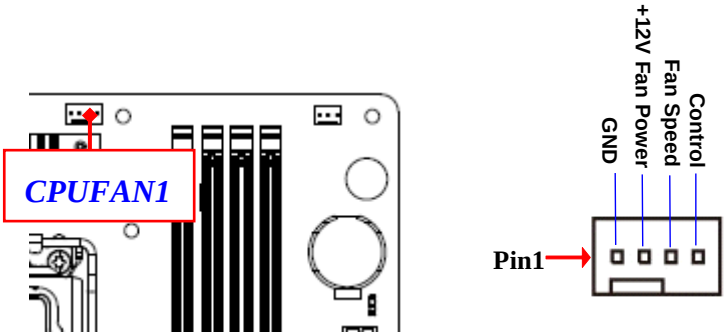


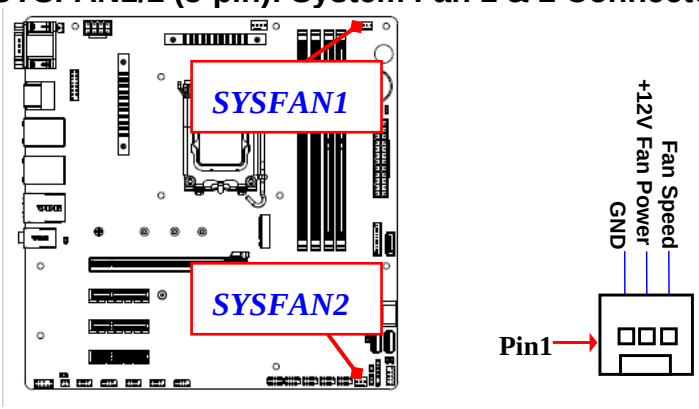
| Pin | Definition | No. | Definition |
|---|---|---|---|
| 1 | GND | 5 | +12V |
| 2 | GND | 6 | +12V |
| 3 | GND | 7 | +12V |
| 4 | GND | 8 | +12V |

## (3) CPUFAN1 (4-pin): CPU Fan Connector




***Note**: Maximum current limit is **0.5A** while using 5V working voltage*

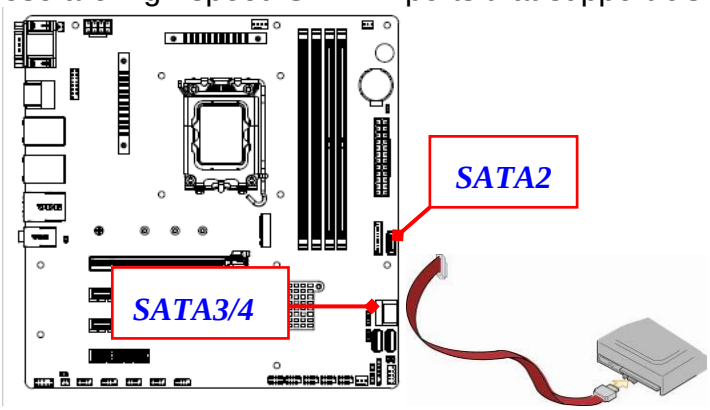
## (4) SYSFAN1/2 (3-pin): System Fan 1 & 2 Connectors




***Note**: Maximum current limit is **0.5A** while using 5V working voltage*

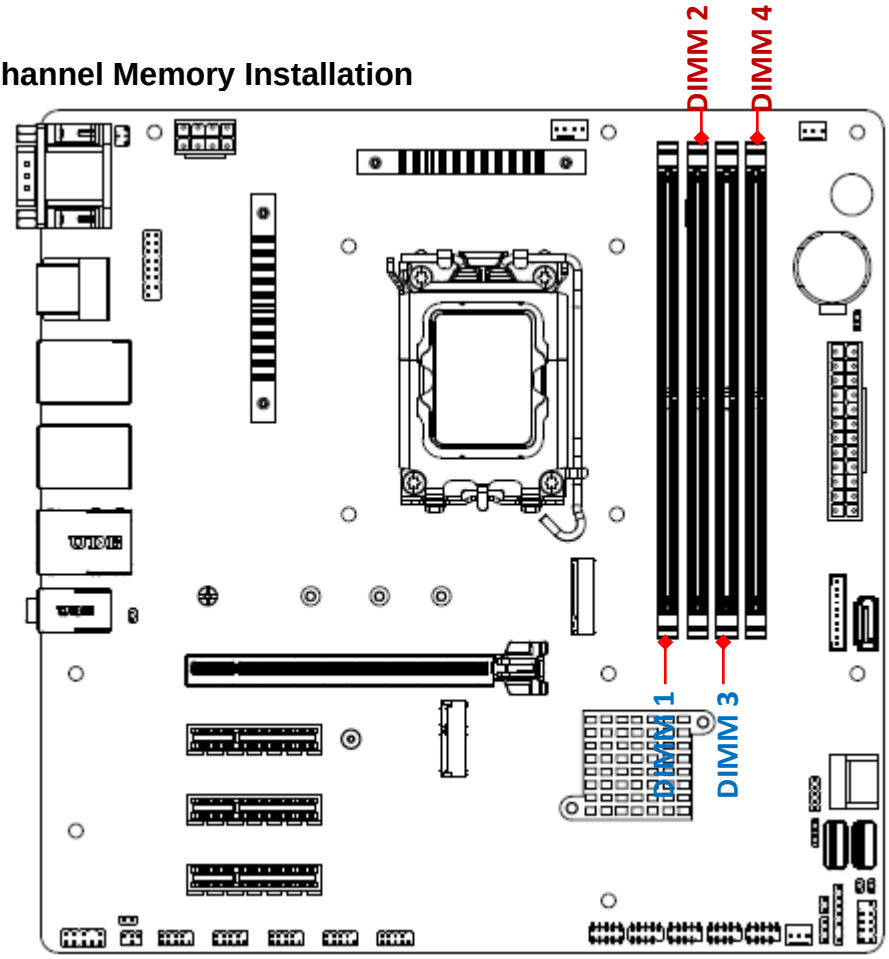
## (5) SATA2/3/4 (7-pin): SATAIII Port Connectors

These are high-speed SATAIII ports that support 6GB/s transfer rate.




| Pin No. | Definition |
|---|---|
| 1 | GND |
| 2 | TXP |
| 3 | TXN |
| 4 | GND |
| 5 | RXN |
| 6 | RXP |
| 7 | GND |

### (6) Dual Channel Memory Installation



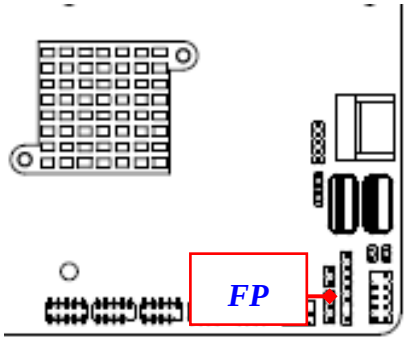

| *Configuration* | *DIMM1* | *DIMM2* | *DIMM3* | *DIMM4* |
|---|---|---|---|---|
| ***1*** | -- | install | -- | -- |
| ***2*** | -- | install | -- | install |
| ***3*** | install | install | install | install |

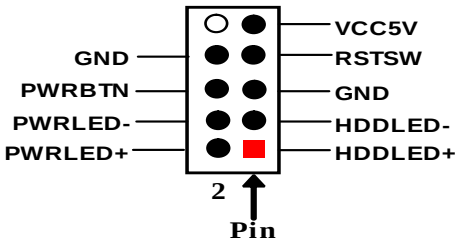
**Notice!**

- For dual channel installation, you need to install the same brand, speed, size and type memory module. ***Please follow the instruction above to prioritize DIMM2 slot when installing one or two memory modules.***
- It is unable to activate dual channel feature if you install one or three memory modules, or you install DIMM1 & DIMM4 / DIMM2 & DIMM3. Slot order can be from left-to-right or right-to-left, and it must be installed in pairs.
- If you install memory modules in wrong direction, it will damage the motherboard and memory module.

## 2-2-3 Header Pin Definition

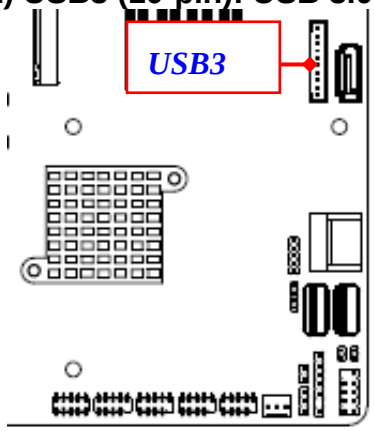
### (1) FP (10-pin): Front Panel Header  Pitch=2.54mm

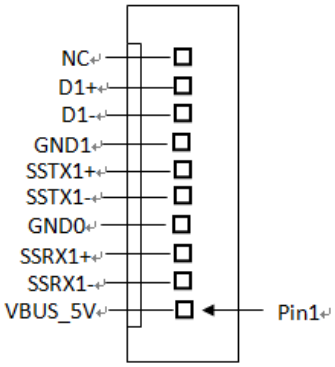



***Note**: Maximum current limit is **1A** while using 5V working voltage*

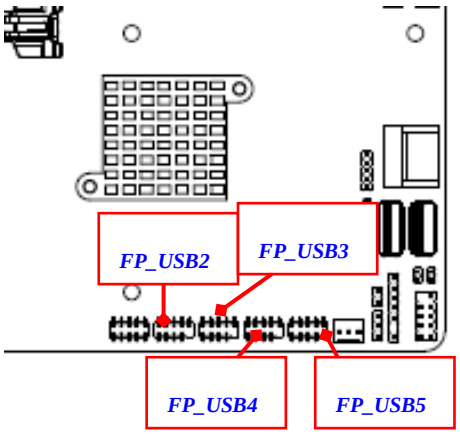
### (2) USB3 (10-pin): USB 3.0 Port Header  Pitch=2.0mm

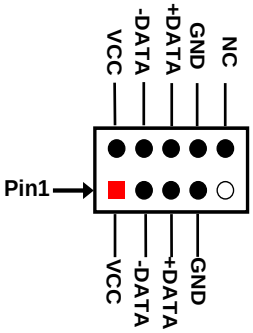



***Note**: Maximum current limit is **1.5A** while using 5V working voltage*

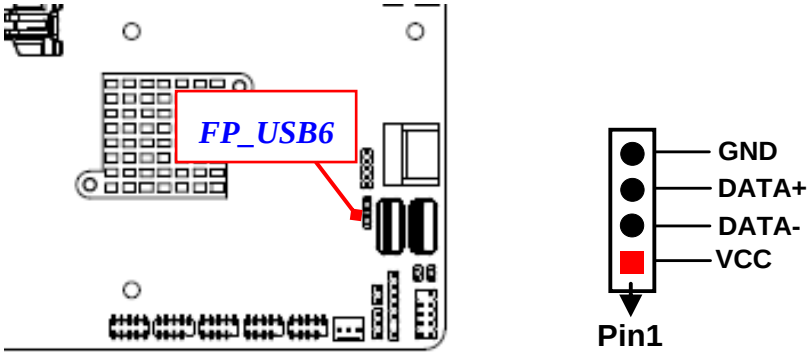
### (3) FP_USB2~FP_USB5 (9-pin): USB 2.0 Port Header  Pitch=2.0mm



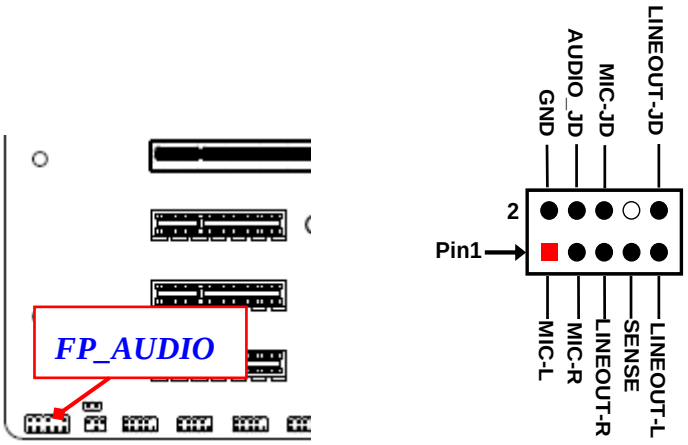

***Note**: Maximum current limit is **1.5A** while using 5V working voltage. **MM10-H6100/6102** only has FP_USB4/5.*

### (4) FP_USB6 (4-pin): USB 2.0 Port Header  Pitch=2.0mm



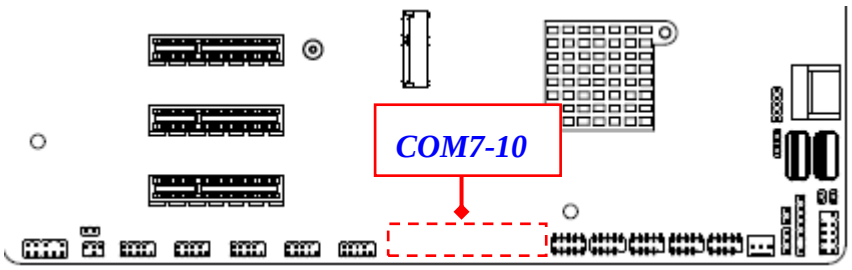

**Note: Maximum current limit is **1.5A** while using 5V working voltage*

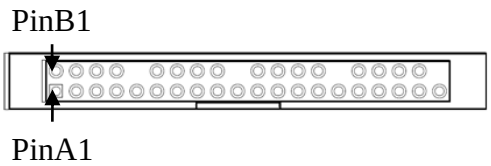
### (5) FP_Audio (10-pin): Front Panel Audio Header  Pitch=2.0mm




### (6) COM7-10 (35-pin): Reserved Serial Port (support RS232)  Pitch=2.0mm

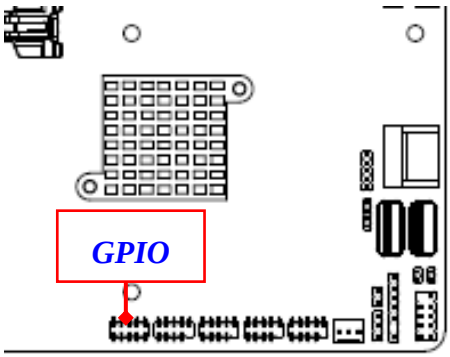
**Note: COM7-10 ports are optional and by request only*

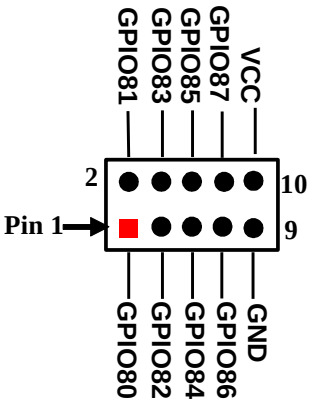


| COM7-10 | Pin NO | RS232 | Pin NO. | RS232 |
|---|---|---|---|---|
| COM7 | Pin A1 | DCD7 | Pin B1 | DSR7 |
| | Pin A2 | SIN7 | Pin B2 | RTS7 |
| | Pin A3 | SOUT7 | Pin B3 | CTS7 |
| | Pin A4 | DTR7 | Pin B4 | RI7 |
| | Pin A5 | GND | Pin B5 | N/A |
| COM8 | Pin A6 | DCD8 | Pin B6 | DSR8 |
| | Pin A7 | SIN8 | Pin B7 | RTS8 |
| | Pin A8 | SOUT8 | Pin B8 | CTS8 |
| | Pin A9 | DTR8 | Pin B9 | RI8 |
| | Pin A10 | GND | Pin B10 | N/A |
| COM9 | Pin A11 | DCD9 | Pin B11 | DSR9 |
| | Pin A12 | SIN9 | Pin B12 | RTS9 |
| | Pin A13 | SOUT9 | Pin B13 | CTS9 |
| | Pin A14 | DTR9 | Pin B14 | RI9 |
| | Pin A15 | GND | Pin B15 | N/A |
| COM10 | Pin A16 | DCD10 | Pin B16 | DSR10 |
| | Pin A17 | SIN10 | Pin B17 | RTS10 |
| | Pin A18 | SOUT10 | Pin B18 | CTS10 |
| | Pin A19 | DTR10 | Pin B19 | RI10 |
| | Pin A20 | GND | Pin B20 | N/A |

## (7) GPIO (10-pin): GPIO & 80 Port Header  Pitch=2.0mm



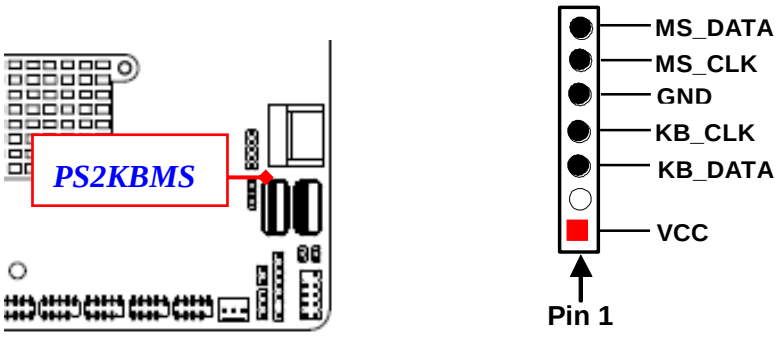




***Note:** Maximum current limit is **1.5A** while using 5V working voltage.*

*Note: Please refer to Page-10 JP4 jumper setting for GPIO header GPIO Port or 80 Port function select:*

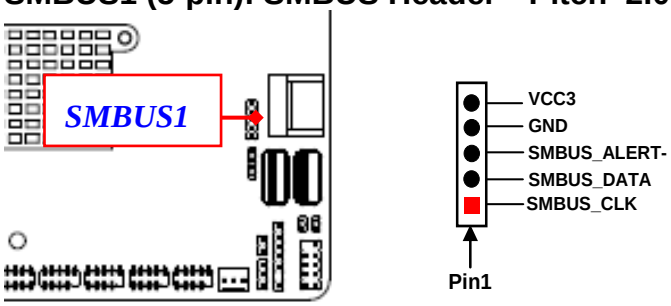
***Pin 1&2 of JP4 Open:*** *or 80Port Function;* ***Pin 1&2 of JP4 Closed:*** *For Normal 8-bit GPIO Function*

## (8) PS2KBMS (6-pin): PS/2 Keyboard & Mouse Header Pitch=2.54mm



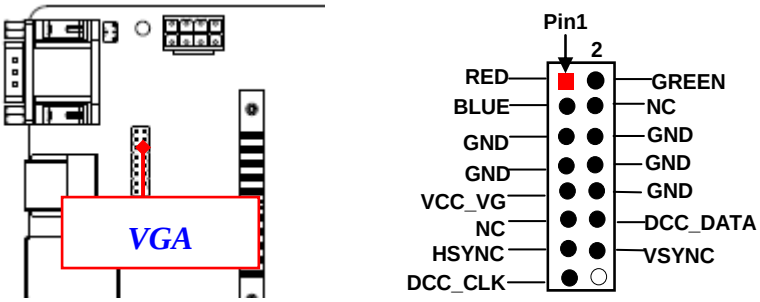

***Note:*** *Maximum current limit is* ***500mA*** *while using 5V working voltage*

## (9) SMBUS1 (5-pin): SMBUS Header Pitch=2.0mm

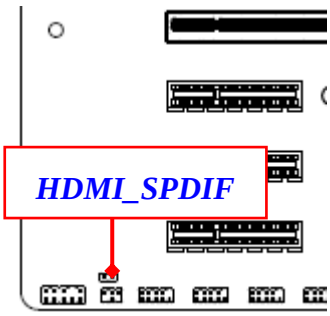


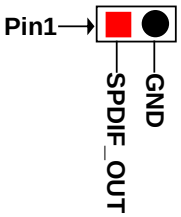

***Note:*** *Maximum current limit is* ***0.3A*** *while using 5V working voltage*

## (10) VGA (15-pin): Video Graphic Attach Port Header Pitch=2.54mm



### (11) HDMI_SPDIF (2-pin): HDMI SPDIF Out Header Pitch=2.54mm




## 2-2-4 Maximum Voltage & Current Limit

Below is a list of maximum voltage & Current Limit specification for motherboard interface (including but not limited to slots, connectors, wafers and headers) for setup reference:

| Location | Function | Working Voltage | Current Support |
|---|---|---|---|
| JP2 | COM1 Port Pin9 Function | 5V/12V | 500mA |
| JP3 | COM2 Port Pin9 Function | 5V/12V | 500mA |
| CPUFAN1 | CPU FAN | 12V | 0.5A |
| SYSFAN1/2 | System Fan Connectors | 5V | 0.5A |
| FP | Front Panel Header | 5V | 1A |
| FP_USB2~FP_USB6 | USB 2.0 Port | 5V | 1.5A |
| USB1/2 | USB 2.0 | 5V | 500mA |
| USB3 | USB 3.0 Port | 5V | 1.5A |
| GPIO | GPIO Port Header | 5V | 1.5A |
| PS2KBMS | PS/2 Keyboard & Mouse | 5V | 500mA |
| SMBUS1 | SMBUS Header | 5V | 0.3A |

# Chapter 3
# Introducing BIOS

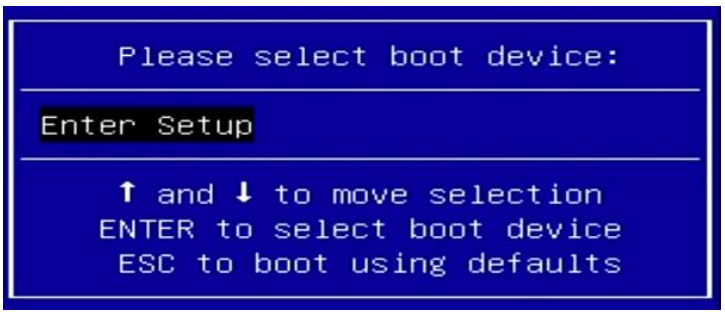
| | |
|---|---|
| **Notice!** | The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version form our official website. |

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

## 3-1 Entering Setup

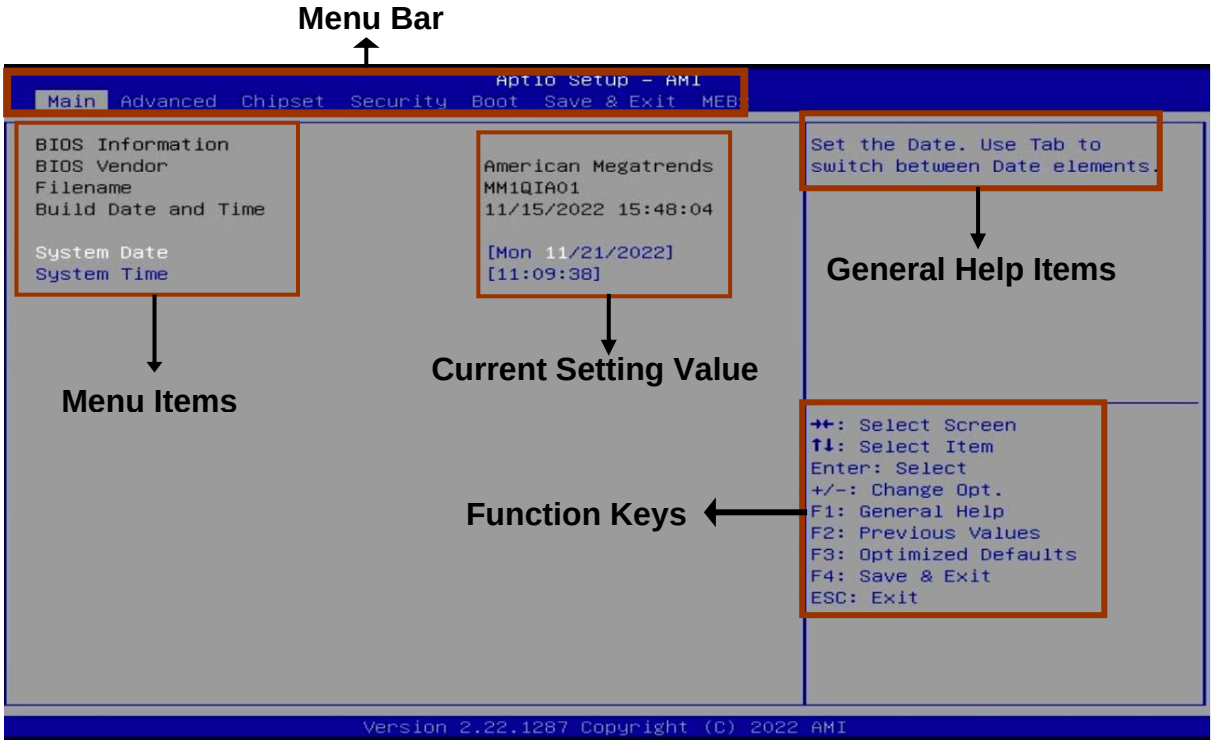
Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press **<Del>** to enter Setup; press < **F7**> to enter pop-up Boot menu.



## 3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:




## 3-3 Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press→← (right, left) to select screen.
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous values.
- [F3]: Optimized defaults.
- [F4]: Save & Exit.
- Press <Esc> to exit from BIOS Setup.

## 3-4 Getting Help

### Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

### Status Page Setup Menu/Option Page Setup Menu

Press【F1】to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <**Esc**>.

## 3-5 Menu Bars

### There are six menu bars on top of BIOS screen:

| | |
|---|---|
| **Main** | To change system basic configuration |
| **Advanced** | To change system advanced configuration |
| **Chipset** | To change chipset configuration |
| **Security** | Password settings |
| **Boot** | To change boot settings |
| **Save & Exit** | Save setting, loading and exit options. |

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

## 3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.

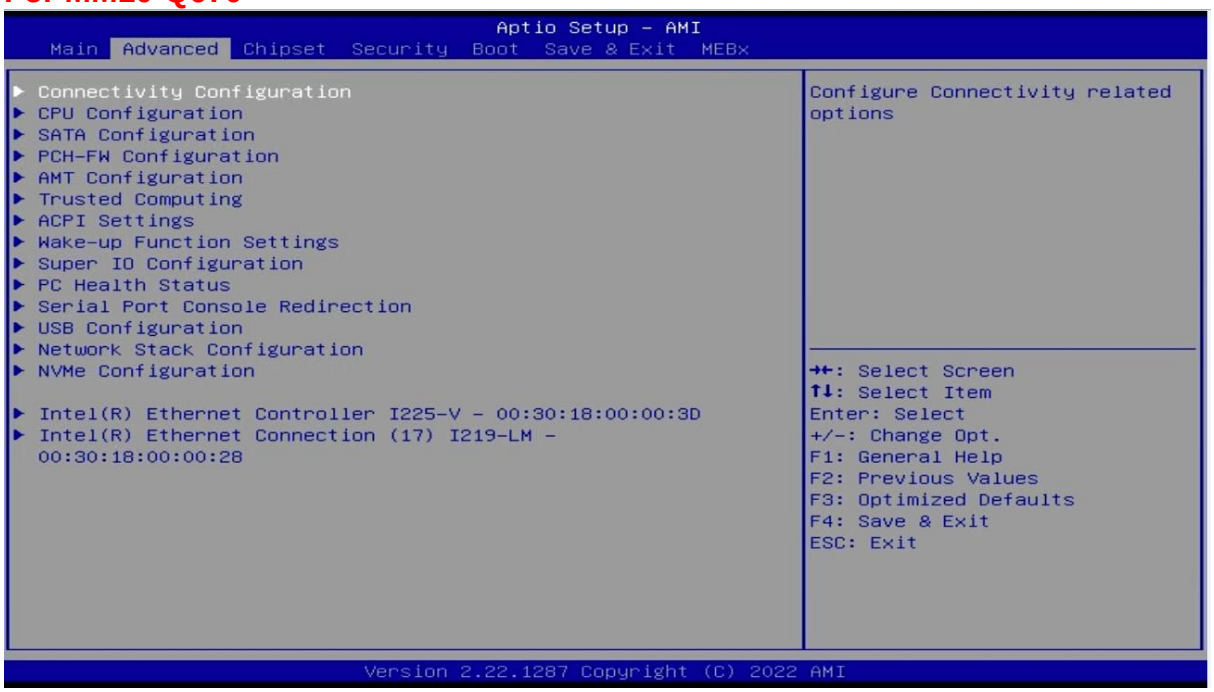
### System Date

Set the date. Please use [Tab] to switch between date elements.

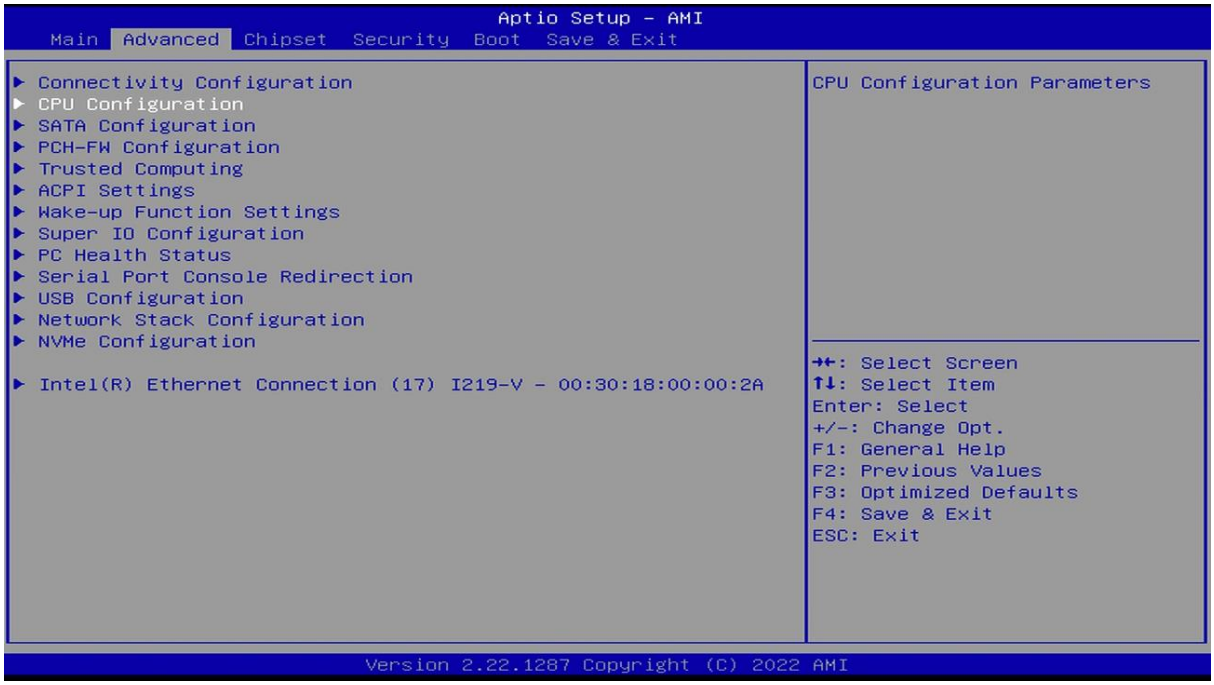
**System Time**
Set the time. Please use [Tab] to switch between time elements.

## 3-7 Advanced Menu

**For MM10-Q670**




**For MM10-H610**



- ***Connectivity Configuration***

  Use this item to configure connectivity related options

  Press [Enter] to make settings for the following sub-items:

  **CNVi Mode**

  This item configures connectivity.

  The optional settings: [Disable Integrated]; [Auto Detection].

  [Disable Integrated]: it disables Integrated Solution.

  [Auto Detection]: if discrete solution is discovered it will be enabled by default. Otherwise integrated solution (CNVi) will be enabled.

- **CPU Configuration**

  Press [Enter] to view current CPU configuration and make settings for the following sub-items:

  **Hyper-Threading**

  Use this item to enable or disable Hyper-Threading Technology.

  The optional settings: [Disabled]; [Enabled].

  **Intel (VMX) Virtualization Technology**

  Use this item to When [Enabled], a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

  The optional settings: [Disabled]; [Enabled].

  **Intel® SpeedStep(tm)**

  This item allows more than two frequency ranges to be supported.

  The optional settings: [Disabled]; [Enabled].

  **C states**

  Use this item to enable or disable CPU Power Management.

  When set as [Enabled], it allows CPU to go to C states when it’s not 100% utilized.

  The optional settings: [Disabled]; [Enabled].

  **Turbo Mode**

  Use this item to enable or disable Turbo Mode (requites Intel speed step or Intel speed shift to be available and enabled).

  The optional settings: [Disabled]; [Enabled].

- **SATA Configuration**

  Press [Enter] to make settings for the following sub-items:

  ***SATA Configuration***

  **SATA Controller(s)**

  Use this item to enable of disable SATA device.

  The optional settings: [Enabled]; [Disabled].

  *When set as [Enabled], the following items shall appear:*

  ***M.2***

  **Port**

  Use this item to enable or disable M.2 SATA port.

  The optional settings: [Disabled]; [Enabled].

  ***SATA2***

  **Port**

  Use this item to enable or disable SATA port.

The optional settings: [Disabled]; [Enabled].

**Hot Plug**

Use this item to designate this port as Hot Pluggable.

The optional settings: [Disabled]; [Enabled].

***SATA3***

**Port**

Use this item to enable or disable SATA port.

The optional settings: [Disabled]; [Enabled].

**Hot Plug**

Use this item to designate this port as Hot Pluggable.

The optional settings: [Disabled]; [Enabled].

***SATA4***

**Port**

Use this item to enable or disable SATA port.

The optional settings: [Disabled]; [Enabled].

**Hot Plug**

Use this item to designate this port as Hot Pluggable.

The optional settings: [Disabled]; [Enabled].

- **PCH-FW Configuration**

Press [Enter] to view Management Engine technology parameters and make settings in the following sub-item:

**TPM Device Selection**

Use this item to select TPM device. When set as [PTT], it will enable PTT in SkuMgr. When set as [dTPM], it will disable PTT in SkuMgr.

The optional settings: [dTPM]: [PTT].

***Warning!*** *PTT/dTPM will be disabled and all data saved on it will be lost.*

**I219 Lan MAC address Override**

Use this item to enable for override MAC Address

The optional settings: [Disabled]; [Enabled].

- **Firmware Update Configuration**

Use this item to configure management engine Technology Parameter, press [Enter] to make settings for '**ME FW Image Re-Flash**'.

**ME FW Image Re-Flash**

Use this item to enable or disable ME FW Image Re-Flash function.

The optional settings: [Disabled]; [Enabled].

- ***AMT Configuration***

***Note: AMT configuration used by MM10-Q670***

Use this item to configure Active Management Technology parameters.

Press [Enter] to make settings for the following sub-items:

**USB Provisioning of AMT**

Use this item to enable or disable AMT USB provisioning.

The optional settings are: [Disabled]; [Enabled].

**MAC Pass Through**
Use item to enable/disable MAC Pass Through. Function
The optional settings are: [Disabled]; [Enabled].
**Activate Remote Assistance Process**
Use this item to trigger CIRA boot.
***Note**: Network Access must be activated first from MEBx Setup.*
The optional settings are: [Disabled]; [Enabled].
**Unconfigure ME**
Unconfigure ME with tesetting MEBx password to defsult on next boot.
The optional settings are: [Disabled]; [Enabled].

- **ASF Configuration**

This item is for user to configure Alert Standard Format parameters.
Press [Enter] to make settings for in the following sub-items:
**PET Progress**
Use this item to enable or disable PET Events Progress to receive PET Events.
The optional settings are: [Disabled]; [Enabled].
**WatchDog**
Use this item to enable or disable WatchDog Timer. When set as [Enabled], the following sub-items shall appear:
**OS Timer**
Use this item to set OS watch dog timer.
**BIOS Timer**
Use this item to set BIOS watch dog timer.
**ASF Sensors Table**
Use this item to add ASF Sensor Table into ASF ! ACPI Table.
The optional settings are: [Disabled]; [Enabled].

- **Secure Erase Configuration**

Press [Enter] to make settings for in the following sub-items:
**Secure Erase Mode**
Use this item to change Secure Erase module behavior:
The optional settings are: [Simulated]; [Real].
[Simulated]: Performs SE flow without erasing SSD;
[Real]: Erase SSD.
*** If SATA device is used, OEM Could use
SECURE_ERASE_HOOK_PROTOCOL to remove SATA power to skip G3 cycle.
***
**Force Secure Erase**
Use this item to Force Secure Erase on next boot
The optional settings are: [Disabled]; [Enabled]

- **Trusted Computing**

Press [Enter] to view current status information, or make further settings in the following sub-items:
**Security Device Support**
Use this item to enable or disable BIOS support for security device. O.S. will not show security device. TGG EFI protocol and INT1A interface will not be available.
The optional settings are: [Disabled]; [Enabled].
**When set as **[Enabled]**, user can make further settings in the following items:*

***Active PCR banks***
***Available PCR banks***
**SHA256 PCR Bank**
Use this item to enable or disable SHA256 PCR Bank
The optional settings are: [Disabled]; [Enabled].
**SHA384 PCR Bank**
Use this item to enable or disable SHA384 PCR Bank
The optional settings are: [Disabled]; [Enabled].
**SM3_256 PCR Bank**
Use this item to enable or disable SM3_256 PCR Bank
The optional settings are: [Disabled]; [Enabled].
**Pending operation**
Use this item to schedule an operation for the security device
Note: Your computer will reboot during restart in order to change state of security device.
The optional settings are: [None]; [TPM Clear].

- **ACPI Settings**

Press [Enter] to make settings for the following sub-items:
***ACPI Settings***

**ACPI Sleep State**
Use this item to select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
The optional settings are: [Suspend Disabled]; [S3 (Suspend to RAM)].

- **Wake-up Function Settings**

Press [Enter] to make settings for the following sub-items:
**Wake-up System With Fixed Time**
Use this item to enable or disable system wake on alarm event.
The optional settings are: [Disabled]; [Enabled].
When set as [Enabled], the following items shall appear:
**Wake-up Hour**
Use this item to select in the range of 0 to 23. For example enter 3 for 3am and 15 for 3pm.
**Wake-up Minute**
Use this item to select in the range of 0 to 59.
**Wake-up Second**
Use this item to select in the range of 0 to 59.
When set as [Disabled], the Wake-up System With Fixed Time following items shall appear:
**Wake-up System With Dynamic Time**
Use this item to enable or disable system wake on alarm event.
System will wake on the current time + Increased minutes.
The optional settings are: [Disabled]; [Enabled].
When set as [Enabled], system will wake on the current time + increased minute(s)
**Wake-up Minute Increase**
Use this item to 1-60
**PS2 KB/MS Wake-up**
Use this item to enable or disable PS2 KB/MS Wake-up from (S3/S4/S5) Support

Only Disable ERP Function
The optional settings are: [Disabled]; [Enabled].
**PCIE Wake-up from S3-S5**
The optional settings are: [Disabled]; [Enabled].
**USB S3/S4 Wake-up**
Use this item to enable or disable USB wake-up from S3/S4 state.
**This function is supported when '**ERP Support'** is set as [Disabled].*
The optional settings are: [Enabled]; [Disabled].
**USB S5 Power**
Use this item to enable or disable USB power after power shutdown.
**This function is supported when '**ERP Support**' is set as [Disabled].*
The optional settings are: [Enabled]; [Disabled].

- **Super IO Configuration**

Press [Enter] to make settings for the following sub-items:
***Super IO Configuration***

**ERP Support**

Use this item to Energy-Related Products function. Disable ERP to active all wake-up functions
The optional settings are: [Disabled]; [Auto].

- **Serial Port 1 Configuration**

Press [Enter] to make settings for the following items:
**Serial Port**
Use this item to enable or disable serial port (COM).
The optional settings are: [Disabled]; [Enabled].
**When set as **[Enabled]**, user can make further settings in the following items:*
**Change Settings**
Use this item to select an optimal setting for super IO device.
The optional settings: [IO=3F8h; IRQ=4]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11].
**Transmission Mode Select**
The optional settings are: [RS422]; [RS232]; [RS485].
**Mode Speed Select**
The optional settings are: [RS232/RS422/RS485=250kbps]; [RS232=1Mbps, RS422/RS485=10Mbps].

- **Serial Port 2 Configuration**

Press [Enter] to make settings for the following items:
**Serial Port**
Use this item to enable or disable serial port (COM).
The optional settings are: [Disabled]; [Enabled].
**When set as **[Enabled]**, user can make further settings in the following items:*
**Change Settings**
Use this item to select an optimal setting for super IO device.
The optional settings: [IO=2F8h; IRQ=3]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11].

► **Serial Port 3 Configuration**

Press [Enter] to make settings for the following items:

**Serial Port**

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

**When set as **[Enabled]**, user can make further settings in the following items:*

**Change Settings**

Use this item to select an optimal setting for super IO device.

The optional settings: [IO=3E8h; IRQ=10]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E0h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E0h; IRQ=3, 4, 5, 7, 10, 11].

► **Serial Port 4 Configuration**

Press [Enter] to make settings for the following items:

**Serial Port**

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

**When set as **[Enabled]**, user can make further settings in the following items:*

**Change Settings**

Use this item to select an optimal setting for super IO device.

The optional settings: [IO=2E8h; IRQ=10]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E0h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E0h; IRQ=3, 4, 5, 7, 10, 11].

► **Serial Port 5 Configuration**

Press [Enter] to make settings for the following items:

**Serial Port**

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

**When set as **[Enabled]**, user can make further settings in the following items:*

**Change Settings**

Use this item to select an optimal setting for super IO device.

The optional settings: [IO=3E0h; IRQ=11]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E0h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E0h; IRQ=3, 4, 5, 7, 10, 11].

► **Serial Port 6 Configuration**

Press [Enter] to make settings for the following items:

**Serial Port**

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

**When set as **[Enabled]**, user can make further settings in the following items:*

**Change Settings**

Use this item to select an optimal setting for super IO device.

The optional settings: [IO=2E0h; IRQ=11]; [IO=3F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2F8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E8h; IRQ=3, 4, 5, 7, 10, 11]; [IO=3E0h; IRQ=3, 4, 5, 7, 10, 11]; [IO=2E0h; IRQ=3, 4, 5, 7, 10, 11].

**WatchDog Reset Timer**
Use this item to enable or disable WDT reset function.
**When set as [**Enabled**], the following sub-items shall appear:*

**WatchDog Reset Timer Value**
User can set a value in the range of [4] to [255].
**WatchDog Reset Timer Unit**
The optional settings are: [Sec.]; [Min.].

**ATX Power Emulate AT Power**
This item support Emulate AT power function, MB power On/Off control by power supply. Use needs to select 'AT or ATX Mode' on MB jumper at first *(refer to JAT_ATX jumper setting for* Pin1&2 of *ATX Mode &* Pin 2&3 of A*T Mode Select)*

**Case Open Detect**

Use this item to detect Case has already open or not. Show message in POST.

The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, system will detect if COPEN has been short or not (*refer to **COPEN** jumper setting for Case Open Detection*); if Pin 1&2 of ***CASE OPEN*** are short, system will show Case Open Message during POST.

- **PC Health Status**

Press [Enter] to view current hardware health status, make further settings in '**SmartFAN Configuration**' and set value in '**Shutdown Temperature**'.

- **SmartFAN Configuration**

Press [Enter] to make settings for '**SmartFan Configuration**':

***SmartFAN Configuration***

**CPUFAN1 / SYSFAN1 / SYSFAN2 Smart Mode**
The optional settings are: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear:
**CPUFAN1 / SYSFAN1 / SYSFAN2 Full-Speed Temperature**
Use this item to set CPUFAN/SYSFAN1 full speed temperature. Fan will run at full speed when above this pre-set temperature.
**CPUFAN1 / SYSFAN1 / SYSFAN2 Full-Speed Duty**
Use this item to set CPUFAN/SYSFAN1 full-speed duty. Fan will run at full speed when above this pre-set duty.
**CPUFAN1 / SYSFAN1 / SYSFAN2 Idle-Speed Temperature**
Use this item to set CPUFAN/SYSFAN1 idle speed temperature. Fan will run at idle speed when below this pre-set temperature.
**CPUFAN1 / SYSFAN1 / SYSFAN2 Idle-Speed Duty**
Use this item to set CPUFAN/SYSFAN1 idle speed duty. Fan will run at idle speed when below this pre-set duty.

- **Serial Port Console Redirection**

***COM1***
**Console Redirection**
The optional settings are: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear:

- **Console Redirection Settings**

The settings specify how the host computer and the remote computer (which the

user is using) will exchange data. Both computers should have the same or compatible settings.
Press [Enter] to make settings for the following items:

***COM1***

***Console Redirection Settings***

**Terminal Type**

The optional settings are: [VT100]; [VT100 Plus]; [VT-UTF8]; [ANSI].

**Emulation:** [ANSI]: Extended ASCII char set; [VT100]: ASCII char set; [VT100 Plus]: Extends VT100 to support color, function keys, etc.; [VT-UTF8]: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

**Bits per second**

Use this item to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
The optional settings are: [9600]; [19200]; [38400]; [57600]; [115200].

**Data Bits**

The optional settings are: [7]; [8].

**Parity**

A parity bit can be sent with the data bits to detect some transmission errors.
The optional settings are: [None]; [Even]; [Odd]; [Mark]; [Space].
[Even]: parity bit is 0 if the num of 1's in the data bits is even; [Odd]: parity bit is 0 if num of 1's in the data bits is odd; [Mark]: parity bit is always 1; [Space]: Parity bit is always 0; [Mark] and [Space] Parity do not allow for error detection. They can be used as an additional data bit.

**Stop Bits**

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.
The optional settings are: [1]; [2].

**Flow Control**

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.
The optional settings are: [None]; [Hardware RTS/CTS].

**VT-UTF8 Combo Key Support**

Use this item to enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.
The optional settings are: [Disabled]; [Enabled].

**Recorder Mode**

With this mode enable only text will be sent. This is to capture Terminal data.
The optional settings are: [Disabled]; [Enabled].

**Resolution 100x31**

Use this item to enable or disable extended terminal resolution.
The optional settings: [Disabled]; [Enabled].

**Putty KeyPad**

Use this item to select FunctionKey and KeyPad on Putty.
The optional settings are: [VT100]; [Linux]; [XTERMR6]; [SCO]; [ESCN]; [VT400].

- **Legacy Console Redirection Settings**

Press [Enter] to make settings for the following items:

**Redirection COM Port**

Use this item to select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

The optional settings are: [COM1]

**Resolution**

Use this item to on Legacy OS, the Number of Rows and Columns supported redirection

The optional settings: [80*24]; [80*25].

**Redirect After POST**

Use this item to when Bootloader is selected, then legacy console redirection is disabled before booting to legacy OS. When always enable is selected, then legacy console redirection is enabled for legacy OS. Default setting for this option is set to always.

The optional settings: [Always Enable]; [BootLoader].

***Serial Port for Out-of-Band Management/***
***Windows Emergency Management Services (EMS)***

**Console Redirection EMS**

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], the following sub-items shall appear:

- **Console Redirection Settings**

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

Press [Enter] to make settings for the following items:

**Terminal Type**

[VT-UTF8] is the preferred terminal type for out-of-band management. The next best choice is [VT100+] and them [VT100]. See above, in Console Redirection Settings page, for more help with Terminal Type/Emulation.

The optional settings: [VT100]; [VT100Plus]; [VT-UTF8]; [ANSI].

**Bits per second**

Use this item to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

The optional settings: [9600]; [19200]; [57600]; [115200].

**Flow Control**

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a “stop” signal can be sent to stop the data flow. Once the buffers are empty, a “start” signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

The optional settings: [None]; [Hardware RTS/CTS]; [Software Xon/Xoff].

**Data Bits**

The default setting is: [8].

**This item may or may not show up, depending on different configuration.*

**Parity**

The default setting is: [None].

**This item may or may not show up, depending on different configuration.*

**Stop Bits**
The default setting is: [1].
**This item may or may not show up, depending on different configuration.*

- **USB Configuration**

Press [Enter] to make settings for the following sub-items:
***USB Configuration***
**XHCI Hand-off**
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
The optional settings are: [Enabled]; [Disabled].
**USB Mass Storage Driver Support**
Use this item to enable or disable USB mass storage driver support.
The optional settings are: [Disabled]; [Enabled].
***USB hardware delays and time-outs***
**USB Transfer time-out**
Use this item to set the time-out value for control, bulk, and interrupt transfers.
The optional settings are: [1 sec]; [5 sec]; [10 sec]; [20 sec].
**Device reset time-out**
Use this item to set USB mass storage device start unit command time-out.
The optional settings are: [10 sec]; [20 sec]; [30 sec]; [40 sec].
**Device power-up delay**
Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.
The optional settings: [Auto]; [Manual].
Select [Manual] you can set value for the following sub-item:
**Device Power-up delay in seconds**
The delay range in from 1 to 40 seconds, in one second increments.
Use either [+] / [-] or numeric keys to set the value.

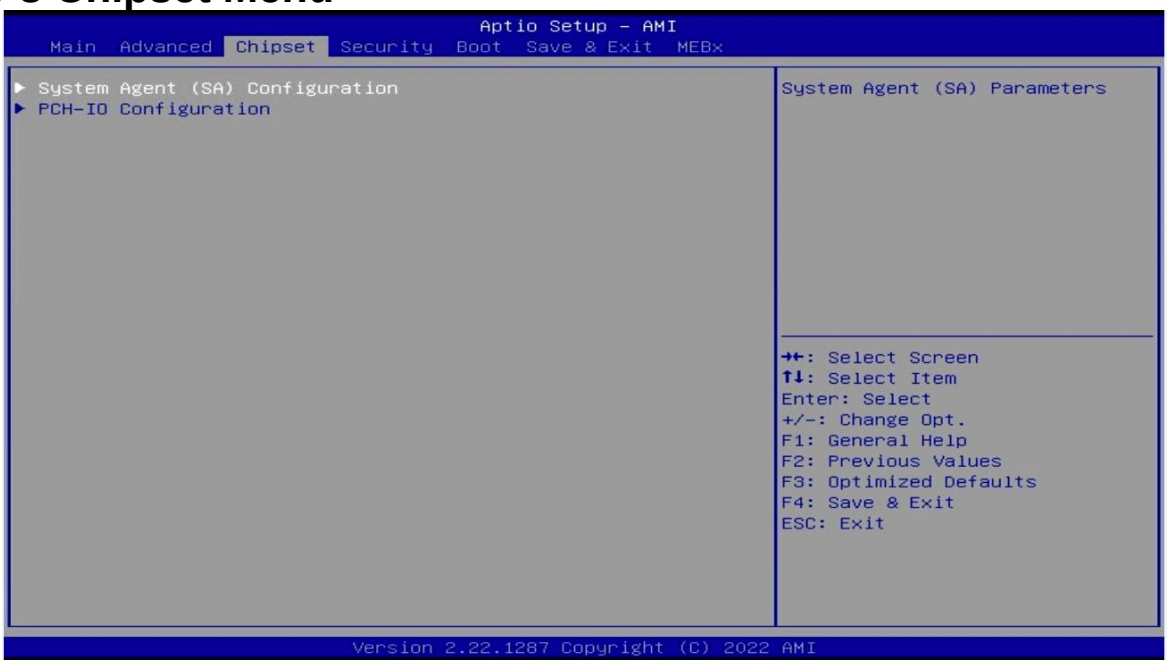
- **Network Stack Configuration**

Press [Enter] to go to '**Network Stack**' screen to make further settings.
**Network Stack**
Use this item to enable or disable UEFI Network Stack.
The optional settings are: [Disabled]; [Enabled].
**When set as [Enabled], the following sub-items shall appear:*
**Ipv4 PXE Support**
Use this item to enable IPv4 PXE boot support.
When set as [Disabled], IPv4 boot support will not be available.
The optional settings are: [Disabled]; [Enabled].
**Ipv6 PXE Support**
Use this item to enable IPv6 PXE boot support.
When set as [Disabled], IPv6 boot support will not be available.
The optional settings are: [Disabled]; [Enabled].
**PXE boot wait time**
Use this item to set wait time to press [ESC] key to abort the PXE boot.
Use either [+] / [-] or numeric keys to set the value.
**Media Detect Count**
Use this item to set number of times presence of media will be checked.

Use either [+] / [-] or numeric keys to set the value.

- **NVMe Configuration**
  Press [Enter] to view current NVMe Configuration.
  **Note: options only when NVME device is available.*
- **Intel® Ethernet Controller I225-V- XX:XX:XX:XX:XX:XX**
  Use this item to for MM10-Q670
- **Intel® Ethernet Connection (17)I219-LM- XX:XX:XX:XX:XX:XX**
  Use this item to for MM10-Q670
- **Intel® Ethernet Connection (17)I219-V- XX:XX:XX:XX:XX:XX**
  Use this item to for MM10-H610

## 3-8 Chipset Menu




- **System Agent (SA) Configuration**
  Press [Enter] to make settings for the following sub-items:
  - **Memory Configuration**
  Press [Enter] to view brief information for the working memory module.
  **Maximum Memory Frequency**
  Use this item to Maximum Memory frequency selections in Mhz.
  The optional settings are: [Auto]; [4000]; [4400]; [4800]; [5000]; [5200]; [5400];
  - **Graphics Configuration**
  Press [Enter] to make further settings for Graphics Configuration.
  ***Graphics Configuration***

  **PCIE1 Slot**
  Use this item to control the PCI Express Root Port
  The optional settings are: [Disabled]; [Enabled]
  **PCIE1 Slot Lane Select**
  Use this item to select X16 or X8/X8
  The optional settings are: [X16]; [X8/X8]
  ***Note:** Use this item to for MM10-Q670*

**Primary Display**
Use this item to select which of graphics device should be Primary Display.
The optional settings are: [Auto]; [IGFX]; [PEG Slot]; [PCH PCIE]

**Internal Graphics**
Use this item to keep IGFX enabled based on the setup options.
The optional settings are: [Auto]; [Disable]; [Enable].

**Aperture Size**
Use this item to select the Aperture Size. Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.
The optional settings are: [128MB]; [256MB]; [512MB]; [1024MB].

**DVMT Pre-allocated**
Use this item to select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
The optional settings are: [32M]; [64M]; [128M]

**DVMT Total Gfx Mem**
Use this item to select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.
The optional settings are: [128M]; [256M]; [MAX].

► **VMD setup menu**

**Enable VMD controller**
Use this item to enable/disable to VMD controller
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear:

**Enable VMD Global Mapping**
Use this item to enable/disable to VMD controller
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear

**Map this Root Port under VMD**
Use this item toMap/UnMapthis Root Port to VMD
The optional settings: [Disabled]; [Enabled].

► **PCH-IO Configuration**

**HD Audio**
This item controls detection of the HD-Audio device.
The optional settings are: [Disabled]; [Enabled].
[**Disabled**]: HDA will be unconditionally disabled.
[**Enabled**]: HAD will be unconditionally enabled.

**Onboard Lan1 Controller**
Use this item to enable or disable onboard NIC.
The optional settings are: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear:

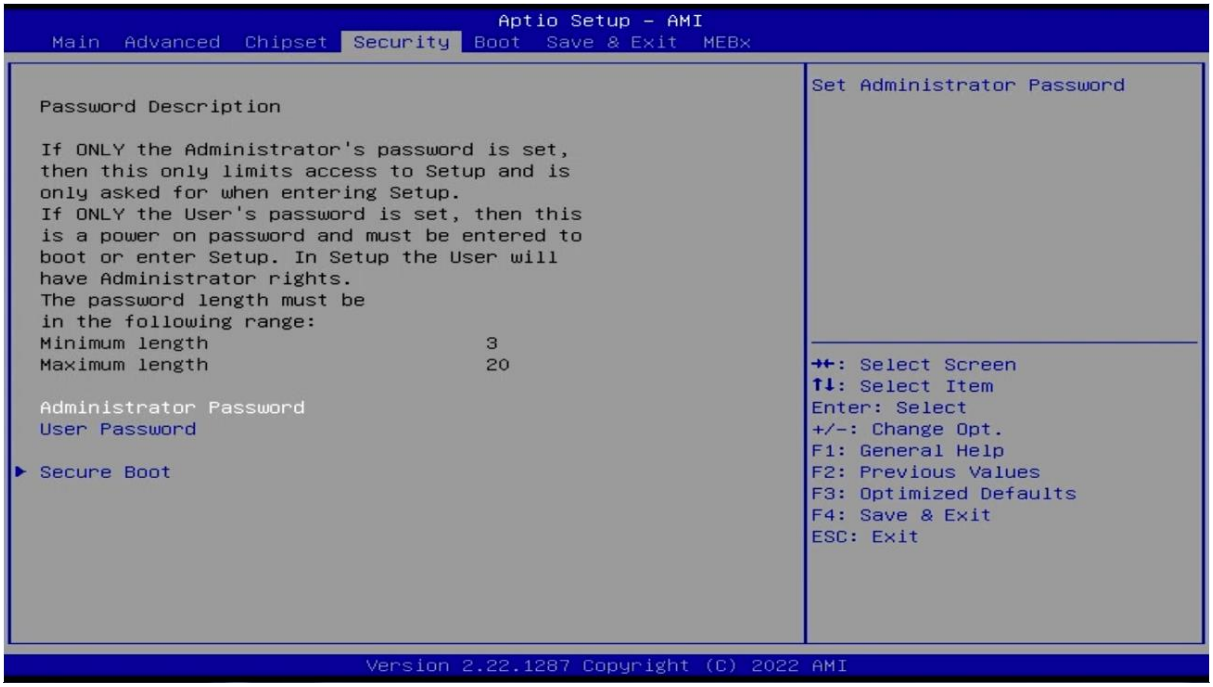
**Wake on LAN Enable**
Use this item to enable/disable integrated LAN to wake the system
The optional settings are: [Disabled]; [Enabled].

**Onboard Lan3 Controller**
Use this item to control the PCI Express Root Port.
The optional settings are: [Disabled]; [Enabled].

***Note:*** *Use this item to for MM10-Q670*

**System State After Power Failure**
Use this item to select what state to go to when power is re-applied after a power failure (G3 state).
The optional settings are: [Always On]; [Always Off]; [Former State].

## 3-9 Security Menu




Security menu allow users to change administrator password and user password settings.

**Administrator Password**
If there is no password present on system, please press [Enter] to create new administrator password. If password is present on system, please press [Enter] to verify old password then to clear/change password. Press again to confirm the new administrator password.

**User Password**
If there is no password present on system, please press [Enter] to create new user password. If password is present on system, please press [Enter] to verify old password then to clear/change password. Press again to confirm the new administrator password.

- **Secure Boot**
  Press [Enter] to make customized secure settings:
  **Secure Boot**
  Secure Boot feature is active if Secure Boot is enabled, Platform Key (PK) is enrolled and the system is in User mode. The mode change requires platform reset.
  The optional settings are: [Disabled]; [Enabled].
  **Secure Boot Mode**

Set UEFI Secure Boot Mode to Standard mode or Custom mode.
In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.
The optional settings are: [Standard]; [Custom].
**When set as [**Custom**], user can make further settings in the following items that show up:*

- **Restore Factory Keys**

Use this item to force system to User Mode, to install factory default Secure Boot key databases.

- **Reset To Setup Mode**

Use this item to delete all Secure Boot Key databases from NVRAM.

- **Key Management**

This item enables experienced users to modify Secure Boot variables, which includes the following items:

**Factory Key Provision**

This item is for user to install factory default secure boot keys after the platform reset and while the system is in Setup mode.
The optional settings are: [Disabled]; [Enabled].

- **Restore Factory Keys**

Use this item to force system into User Mode. Install factory default Secure Boot Key databases.

- **Reset to Setup Mode**

Use this item to delete all Secure Boot key databases from NVRAM.

- **Enroll Efi Image**

This item allows the image to run in Secure Boot Mode.
Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).

- **Export Secure Boot variables**

Use this item to copy NVRAM content of Secure Boot variables to files in a root folder on a file system device.

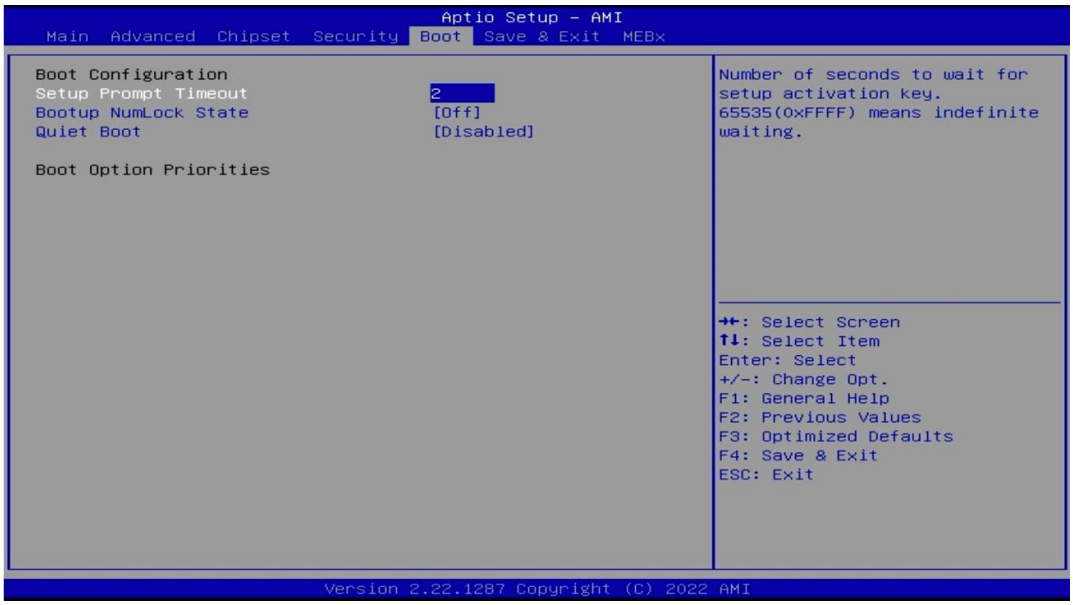
***Secure Boot Variable/Size/Keys/Key Source***

- **Platform Key (PK)/Key Exchange Keys/Authorized Signature/Forbidden Signature/ Authorized TimeStamps/OsRecovery Signatures**

Use this item to enroll Factory Defaults or load the keys from a file with:
1. Public Key Certificate in:
   a) EFI_SIGNATURE_LIST
   b) EFI_ CERT_X509 (DER encoded)
   c) EFI_ CERT_RSA2048 (bin)
   d) EFI_ CERT_SHAXXX (bin)
2. Authenticated UEFI Variable
3. EFI PE/COFF Image (SHA256)

Key Source: Factory, External, Mixed.

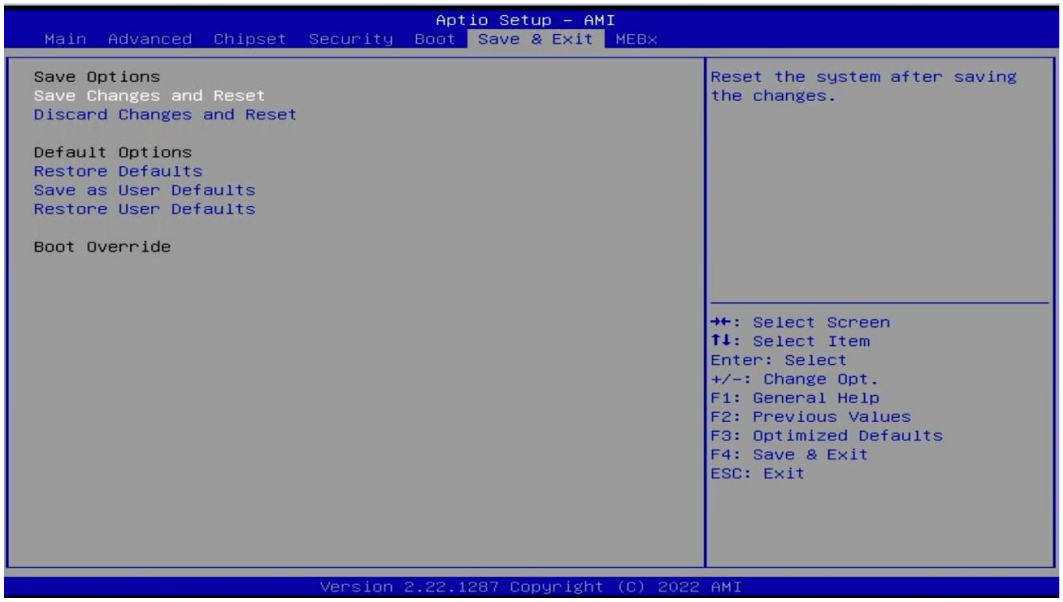
## 3-10 Boot Menu




***Boot Configuration***

**Setup Prompt Timeout**
Use this item to set number of seconds to wait for setup activation key.
**Bootup Numlock State**
Use this item to select keyboard numlock state.
The optional settings are: [On]; [Off].
**Quiet Boot**
Use this item to enable or disable quiet boot option.
The optional settings are: [Disabled]; [Enabled].
***Boot Option Priorities***

## 3-11 Save & Exit Menu




***Save Options***

**Save Changes and Reset**
This item allows user to reset the system after saving the changes.
**Discard Changes and Reset**
This item allows user to reset the system without saving any changes.
***Default Options***
**Restore Defaults**
Use this item to restore /load default values for all the setup options.
**Save as User Defaults**
Use this item to save the changes done so far as user defaults.
**Restore User Defaults**
Use this item to restore the user defaults to all the setup options.
***Boot Override***

## 3-12 MEBx

**For MM10-Q670**

**Intel(R) ME Password**
Use this item to MEBx Login