

MI24 Series
User's Manual

NO. G03-MI24-F

Revision: 2.0

Release date: February 20, 2024

Trademark:

* Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacturer.

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.



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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 temperature comes from the request of the chassis and thermal solution)
- 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.

USER'S NOTICE

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Manual Revision Information

Reversion	Revision History	Date
2.0	Second Edition	February 20, 2024

Item Checklist

- Motherboard
- I/O shield
- Cables

Chapter 1

Introduction of the Motherboard

1-1 Feature of Motherboard

- Intel® 13th Raptor Lake-P i5-1335UE/i5-1355U SoC Processor (**15W TDPs**)
- Support 2* DDR5 SO-DIMM up to 64GB
- Integrated with 2* Intel® 2.5GbE LAN chips
- 2* HDMI, 1* LVDS (or 1-Lane eDP)
- 2* USB3.2 (Gen.2), 2* USB3.2 (Gen.2) Type-C support DP ALT mode and PD 5V/3A, 7* USB2.0
- Support 4* RS232 & 2* RS232/422/485
- Onboard 1* M.2 E-key type-2230 slot for WiFi support CNVi, 1* M.2 B-key type-3042/3052 slot for 4G/5G module, 1* SIM card holder, 1 * M.2 M-Key type-2242/2280 slot (PCIe Gen.4 x4 Interface) support NVMe ;1* PCIe Gen.3 x1 slot
- Support 1* SATAIII (6Gb/s) & 1* M.2 M-key type-2242 slot (SATA interface)
- Support 12V~24V DC-in
- Onboard TPM2.0 (option)
- Support JetBIOS back up tool
- Support CPU Smart FAN function
- Supports ACPI S3 Function
- Support Watchdog Timer Technology

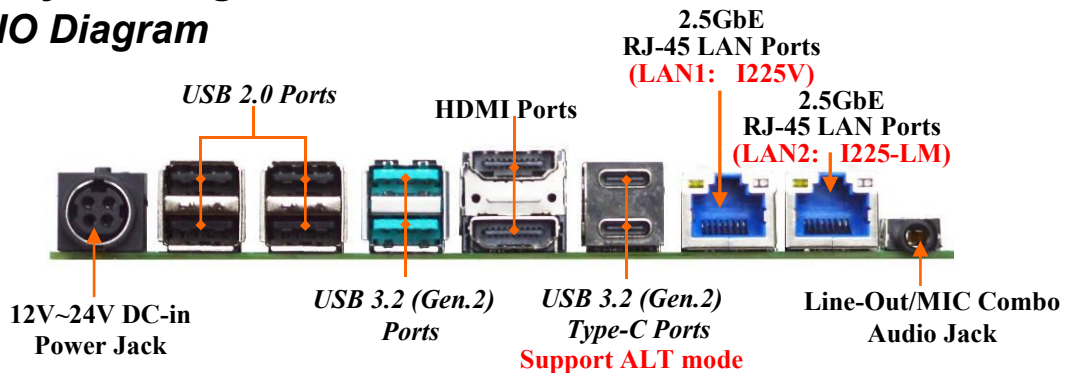
1-2 Specification

Spec	Description
Design	<ul style="list-style-type: none"> ● Slim ITX form factor; 10-layers; PCB size: 170x170mm
Embedded CPU	<ul style="list-style-type: none"> ● Intel® 13th Raptor Lake-P i5-1335UE /i5-1335USoC Processor <i>*For detailed CPU support information please visit our website</i>
Memory Slots	<ul style="list-style-type: none"> ● 2*DDR5 SO-DIMM slots support 2* DDR5 SO-DIMM up to 64GB (<i>Memory frequency range also depends on CPU support & memory capacity</i>) ● Support dual channel function <p>*Note:1.If using $\leq 16GB$ DDR5 Modules, SODIMM1/SODIMM2/SODIMM1+SODIMM2 can support up to 5200MHz. 2. If using $\geq 32GB$ DDR5 Memory Module, SODIMM2 can support up to 5200MHz, SODIMM1 or SODIMM1+ SODIMM2 can only support up to 4400MHz.</p>
Storage	<ul style="list-style-type: none"> ● SATA1: 1* SATAIII 6G/s connector ● M2M1: 1* M.2 M-key 2242 (SATA interface) slot ● M2M2: 1* M.2 M-key 2242/2280 (SATA/PCIe 4.0 x4 interface) slot supports NVMe
Expansion Slots	<ul style="list-style-type: none"> ● PCIE1: 1*PCIe 3.0 x1 slot ● M2E1:1* M.2 E-key 2230 (USB2.0/PCIe 3.0 x1 interface) slot supports CNVi for WiFi ● M2B1:1*M.2 B-key 3042/3052 (USB3.1/USB2.0/PCIe 3.0 x1 interface) slot for 4G/5G Module ● SIMCARDB1:1* Nano-SIM card slot; co-function with M2B1 slot
Graphics	<p>Intel® Iris®Xe Graphics, shared memory for:</p> <ul style="list-style-type: none"> ● 2* HDMI 2.0b ● 2* DP 1.4a from 2* USB3.2 (Gen.2) Type-C ● 1* LVDS/eDP <p>* Note: M124 series support Quad Displays</p>
LAN Chips	<ul style="list-style-type: none"> ● Integrated with 1* Intel i225-LM & 1* Intel i225-V dual 2.5GbE PCIe LAN chips ● Support 10/100/1000/2500Mbps Ethernet data transfer rate <p>*Note: 2500Mbps high-speed transmission rate is only supported over CAT 5e UTP cable.</p>
BIOS	<ul style="list-style-type: none"> ● AMI 256Mb Flash ROM
Rear I/O	<ul style="list-style-type: none"> ● 1* 4-Pin 12V~24V Mini-DIN DC-in power jack

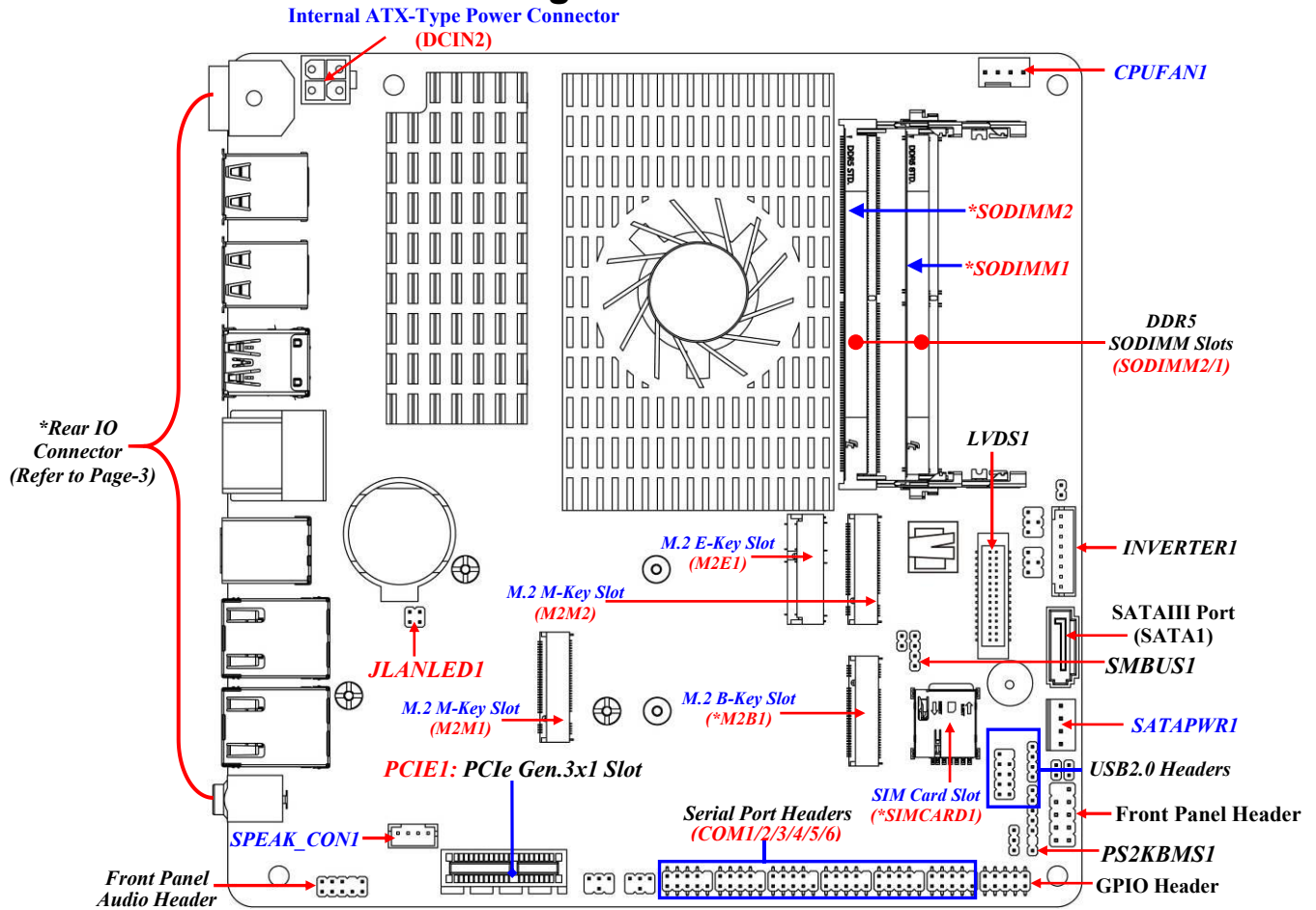
	<ul style="list-style-type: none"> ● 4* USB 2.0 ports ● 2* USB 3.2 (Gen.2) ports ● 2* HDMI ports ● 2* USB 3.2 (Gen.2) Type-C support DP ALT mode and PD 5V/3A ● 2* 2.5GbE RJ-45 LAN ports ● 1* Audio jack (Line-out/MIC combo)
Internal I/O	<ul style="list-style-type: none"> ● 1* 12V~24V internal ATX-type power connector (DCIN2) ● 1* SATA HDD power-out connector ● 1* CPUFAN1 connector ● 1* Front panel header ● 1* Front panel audio header ● 1* 3W 8 Ω Speaker wafer ● 1* LAN Activity LED header (JLANLED1) ● 1* 9-Pin USB 2.0 header for 2* USB 2.0 expansion ports ● 1* 4-Pin USB 2.0 header for 1* USB 2.0 expansion port ● 1* PS/2 Keyboard & Mouse header ● 1* SMBUS header ● 1* 8-bit GPIO header ● 2* Serial headers support RS232/422/485 (COM1/2) ● 4* Serial headers support RS232(COM3/4/5/6) ● 1* LVDS header (or 1-Lane eDP) ● 1* Inverter wafer
TPM 2.0	<ul style="list-style-type: none"> ● Optional for MI24-133E2 & MI24-13352 Series

1-3 Layout Diagram

Rear IO Diagram



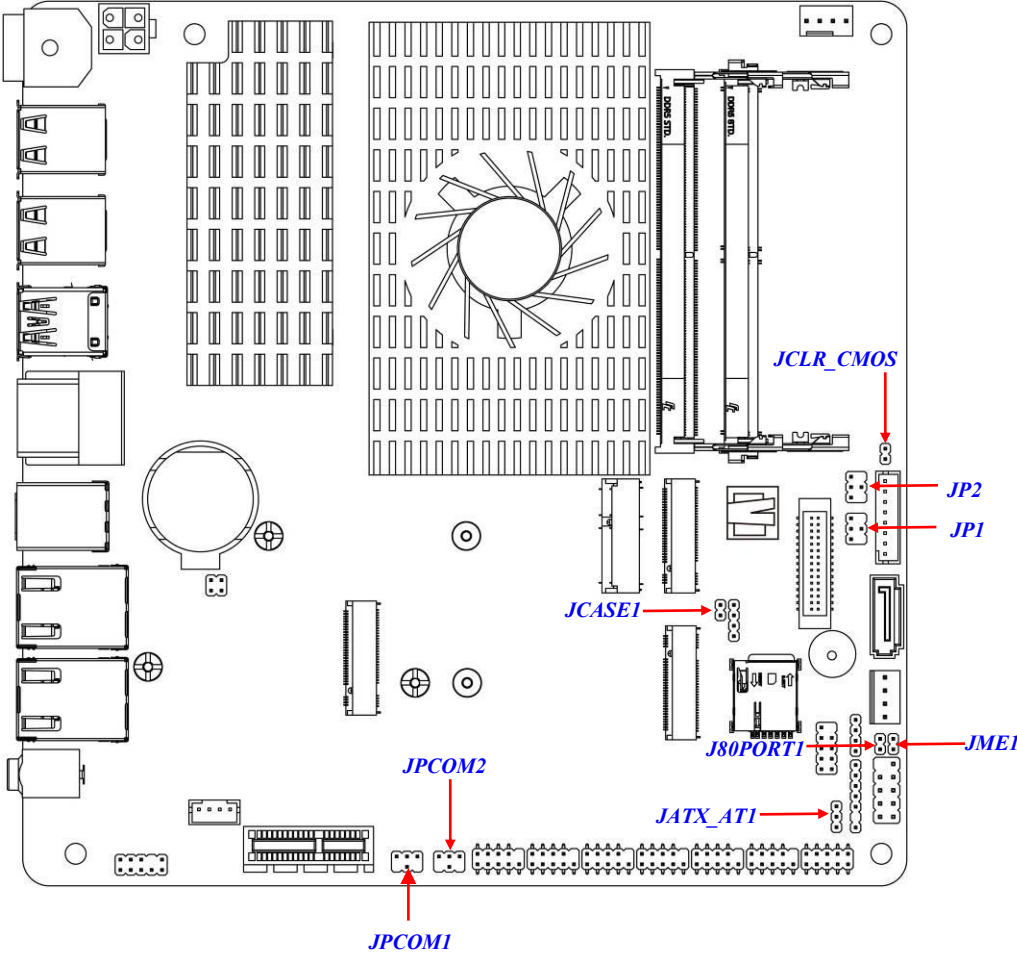
Motherboard Internal Diagram



***Note:** 1. SIMCARD B1 slot only work when compatible SIM card installed & 4G/5G LAN card installed in M2B1 M.2 B-key slot.
 2. Memory slots support different frequency range. Please refer to actual condition for higher performance. The supported memory frequency under different installation conditions is shown in the following list:

DDR5 SODIMM Slot	DDR5 8GB	DDR5 16GB	DDR5 32GB
SODIMM1	Up to 5200MHz	Up to 5200MHz	Up to 4400MHz
SODIMM2	Up to 5200MHz	Up to 5200MHz	Up to 5200MHz
SODIMM1+SODIMM2	Up to 5200MHz	Up to 5200MHz	Up to 4400MHz

Motherboard Jumper Position



Jumpers:

Jumper	Function	Description	Pitch
JCLR_CMOS	Clear CMOS RAM Settings	2-pin Block	2.0mm
JPCOM1	COM1 Header Pin9 Function Select	4-pin Block	2.0mm
JPCOM2	COM2 Header Pin9 Function Select	4-pin Block	2.0mm
JATX_AT1	ATX Mode / AT Mode Select	3-pin Block	2.0mm
JCASE1	Case Open Display Select	2-pin Block	2.0mm
J80PORT1	GPIO/80 Port Function Select	2-pin Block	2.0mm
JME1	ME_Features Select	2-pin Block	2.0mm
JP1	LVDS INVERTER Backlight Power Select	4-pin Block	2.0mm
JP2	LVDS1 LCD Panel Power Select	4-pin Block	2.0mm

Connectors:

Connector	Name
DC_IN3	12V~24V Mini-DIN DC-In Power Jack
USB1/USB2	USB 2.0 Port Connector X4
USB3	USB 3.2 (Gen.2) Port Connector X2
HDMI1	HDMI Port Connector X2
TCP1	USB 3.2 (Gen.2) Type-C Port Connector X2 <i>*Support DP ALT Mode</i>
LAN2/LAN1	2.5GbE RJ-45 LAN Connector X2
AUDIO1	Line-out/MIC Combo Audio Jack
DCIN2	Internal 12V~24V ATX-type Power Connector
CPUFAN1	CPUFAN Connector
SATA1	SATAIII Port Connector
SATAPW1	SATA HDD Power-Out Connector

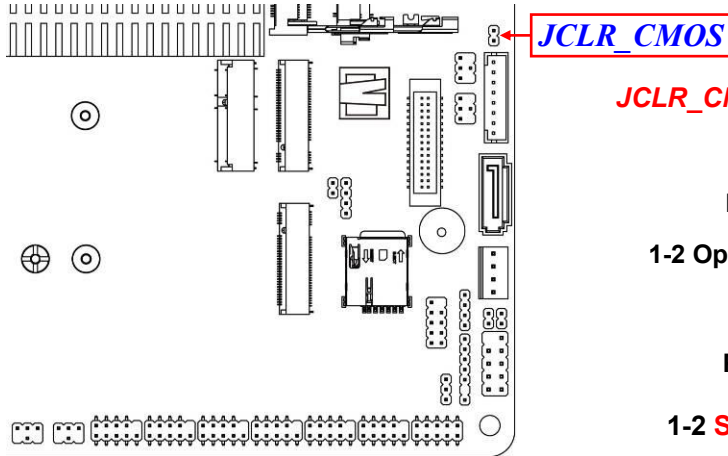
Headers & Wafers:

Header	Name	Description	Pitch
JW_FP1	Front Panel Header (PWR LED/ HD LED/Power Button /Reset)	9-pin Block	2.54mm
FP_AUDIO1	Front Panel Audio Header	9-pin Block	2.0mm
SPEAK_CON1	3W 8ΩAmplifier Wafer	4-pin Block	2.0mm
JLANLED1	LAN Activity LED Header	4-pin Block	2.0mm
FP_USB1	USB 2.0 Port Header	9-pin Block	2.0mm
FP_USB2	USB 2.0 Port Header	4-pin Block	2.0mm
PS2KBMS1	PS/2 Keyboard & Mouse Header	6-pin Block	2.0mm
SMBUS1	SMBUS Header	4-pin Block	2.0mm
COM1/COM2	RS232/422/485 Serial Port Header	9-pin Block	2.0mm
COM3/COM4 /COM5/COM6	RS232 Serial Port Header	9-pin Block	2.0mm
LVDS1	LVDS Port Header	30-pin Block	1.25mm
INVERTER1	Inverter Wafer	8-pin Block	2.0mm
GPIO_CON1	GPIO/80 Port Header	10-pin Block	2.0mm

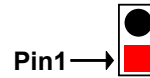
Chapter 2 Hardware Installation

2-1 Jumper Settings

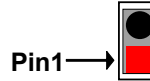
JCLR_CMOS (2-pin): Clear CMOS RAM Setting



JCLR_CMOS → Clear CMOS

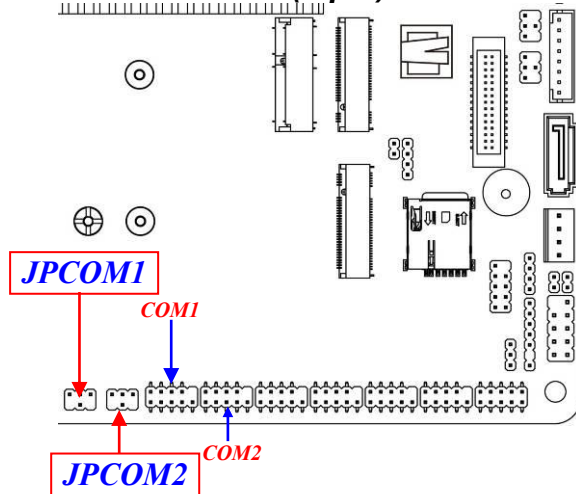


1-2 Open: Normal (default);



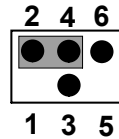
1-2 Short: Clear CMOS.

JPCOM1/ JPCOM2(4-pin): COM1 /COM2 Port Pin9 Function Select

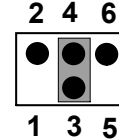


JPCOM1 → COM1 Header Pin-9 VCC

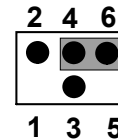
JPCOM2 → COM2 Header Pin-9 VCC



2-4 Closed:
RI=RS232;

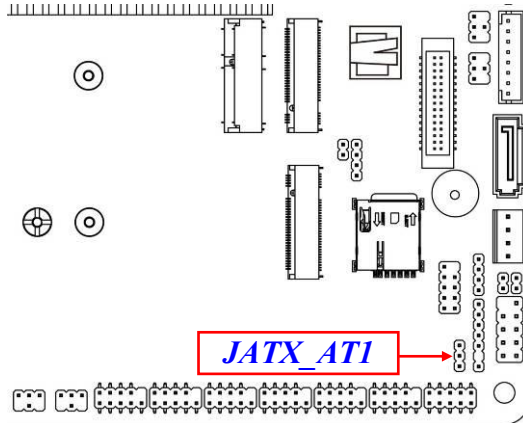


3-4 Closed:
RI= 5V;



4-6 Closed:
RI= 12V.

JATX_AT1 (3-pin): AT Mode /ATX Mode Select



JAT_ATX1 → ATX/AT Mode Select



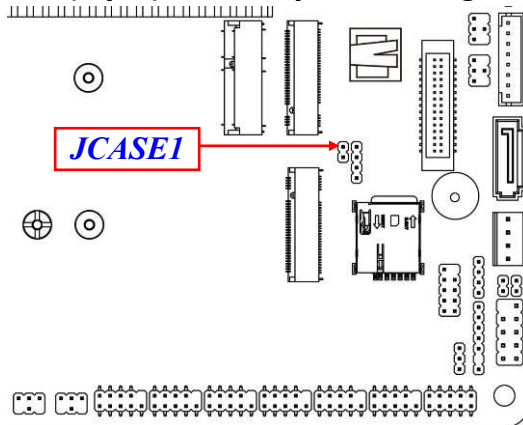
1-2 Closed: ATX Mode Selected (default);



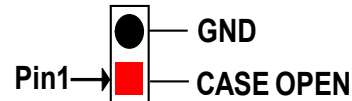
2-3 Closed: AT Mode Selected.

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

JCASE1 (2-pin): Case Open Message Display Function

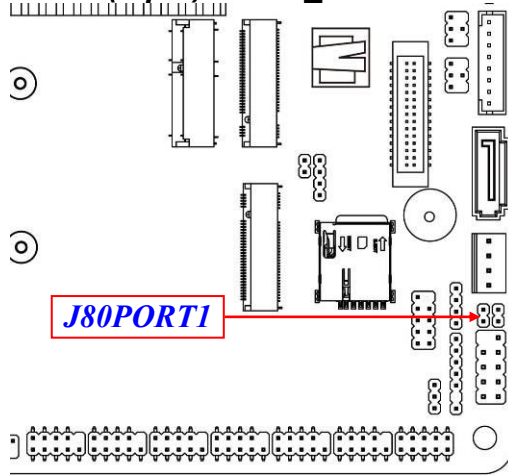


JCASE1 → Case Open Detection

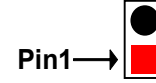


Pin (1&2) Short: When Case open function pin short to GND, the Case open function was detected. When used, needs to enter BIOS and enable 'Case Open Detect' function. In this case if your case is removed, next time when you restart your computer, a message will be displayed on screen to inform you of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

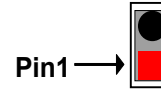
J80PORT1 (2-pin): GPIO_CON 80 Port/GPIO Function Select



J80PORT1 → GPIO/80 Function Select

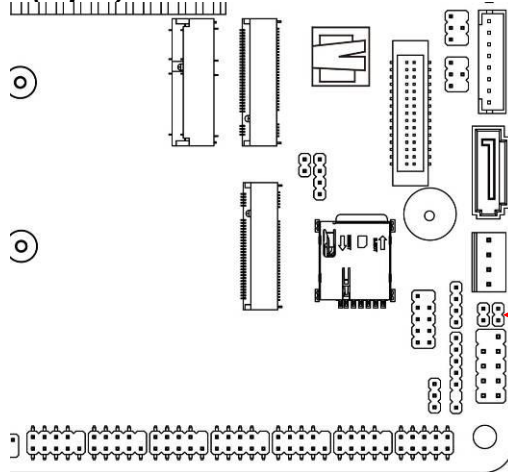


1-2 Open: GPIO_CON1= 80 Port;

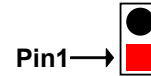


1-2 Closed: GPIO_CON1= GPIO Port(Defaut).

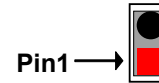
JME1 (2-pin): ME Features Select



JME1 → ME Features Select

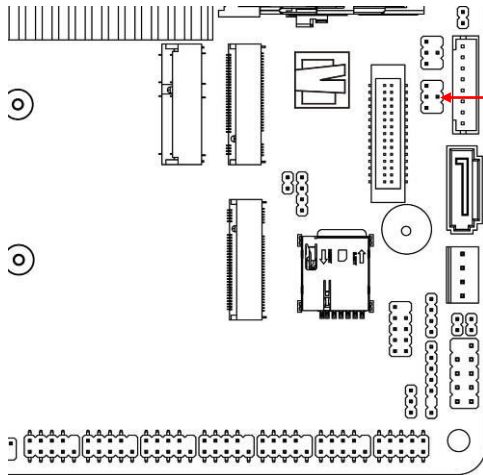


1-2 Open: Enable ME Features;



1-2 Closed: Disable ME Features.

JP1 (4-pin): LVDS Inverter BACKLIGHT VCC Select



JP1

JP1 → LVDS Inverter Backlight VCC



**2-4 Closed:
VCC=+5V**

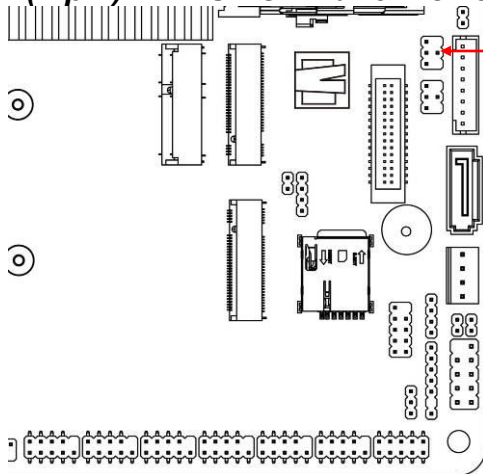


**3-4 Closed:
VCC=12V**



**4-6 Closed:
VCC=ADP12V**

JP2 (4-pin): LVDS LCD Panel Power VCC Select



JP2

JP2 → LVDS LCD Power VCC



**2-4 Closed:
VCC=+3.3V**



**3-4 Closed:
VCC=5V**



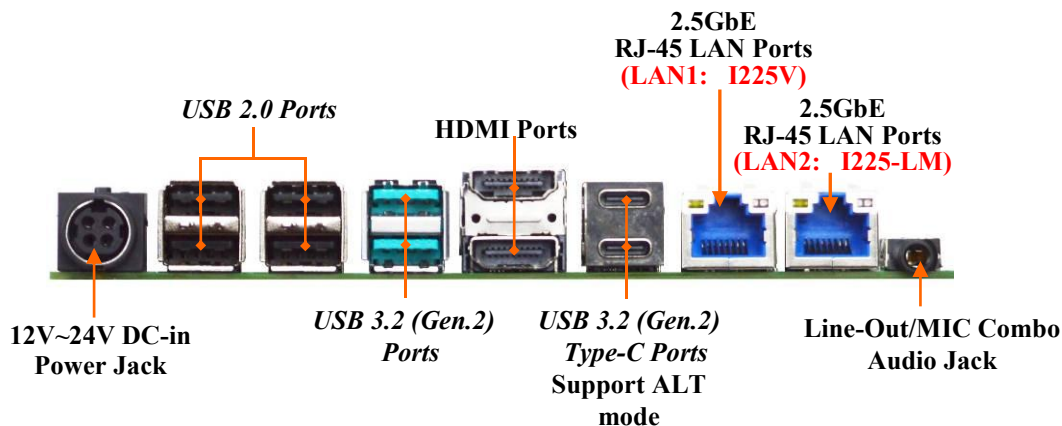
**4-6 Closed:
VCC=12V**





***Note:** Maximum current limit is **2A** while using **3.3V/5V/12V** working voltage
***Warning!** Wrong voltage setting will result in screen burn out.




2-2 Connectors, Headers and Wafers

2-2-1 Rear I/O Panel Connectors

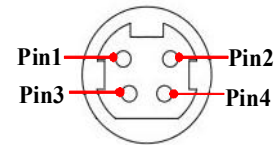
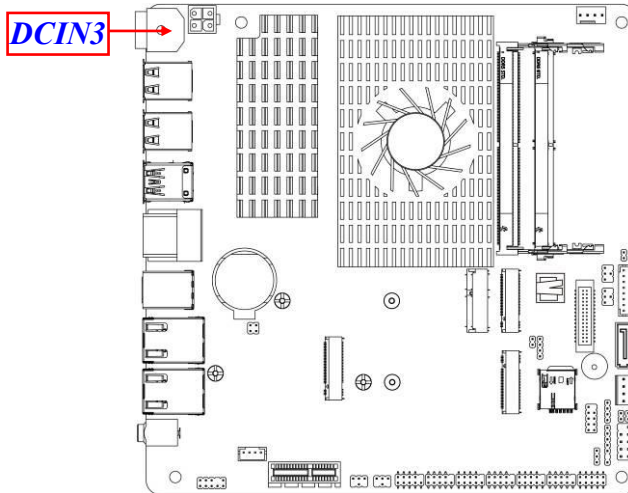
Rear Panel Connectors



Icon	Name	Function
	Mini-DIN Power Jack	For user to connect compatible power adapter to provide power supply for the system.
	Type-A USB 2.0 Port	To connect USB keyboard, mouse or other devices compatible with USB 2.0 specification.
	Type-A 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.
	HDMI2.0b Port	To connect display device that support HDMI2.0b specification.

	Type-C USB 3.2 (Gen.2) & DP 1.4a Port	Type-C USB3.2(Gen.2) port also supports DP ALT mode & PD 5V/3A
	2.5Gbps RJ-45 LAN Port	This connector is standard RJ-45 LAN jack for Network connection which supports 10/100/1000/2500 Mbps Ethernet data transfer rate (*Note: 2.5Gbps is only supported with CAT 5e UTP cable).
	Line_Out/MIC Combo Audio Jack	This connector can functions as audio Line-Out jack and MIC jack with compatible cables & devices.

(1) DCIN3 (4-pin): Mini-DIN 12V~24V Wide-Voltage DC-In Power Connector



Pin No.	Definition
1	+12V~24V DC_IN
2	+12V~24V DC_IN
3	GND
4	GND

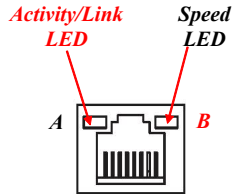
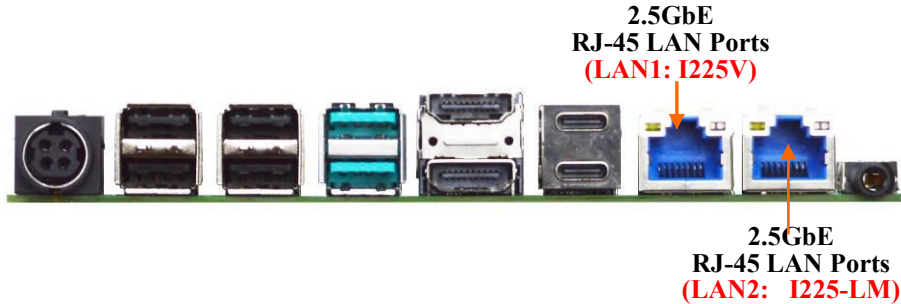
Warning!!

The board has a 12V~24V DC-in power connector (**DCIN3**) on I/O back panel and an internal 12V~24V power connector (**DCIN2**). User can only connect one type of compatible power supply to one of them to power the system.

(2) 2.5GbE RJ-45 Ethernet Connectors

** There are two LED next to the RJ-45 LAN port. Please refer to the table below for LAN port LED indications.

For 2.5Gbps RJ-45 LAN port LED Signals:



A: Activity/Link LED

Status	Description
Off	No Link
Blinking	Data Activity
On	Link

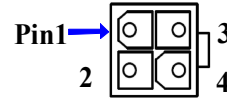
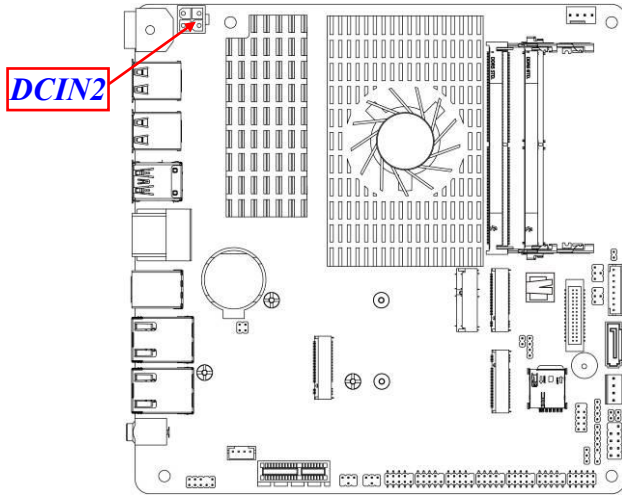
B: Speed LED

Status	Description
Off	10/100Mbps connection
Orange	1Gbps connection
Green	2.5Gbps connection

* **Note:** 2.5Gbps high-speed transmission rate is **only** supported over **CAT 5e UTP cable**.

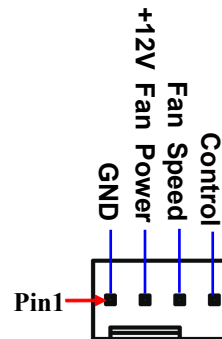
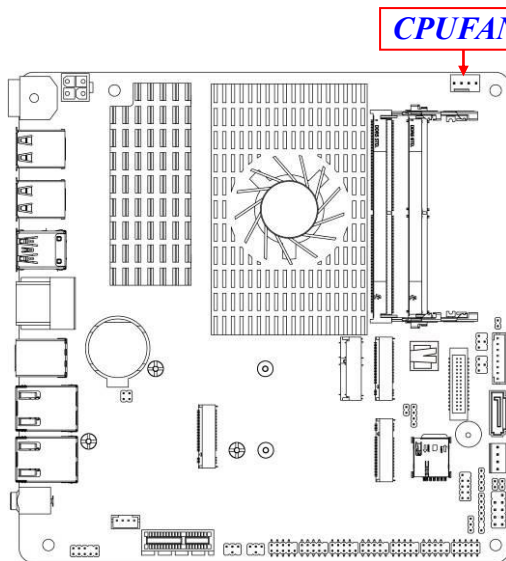
2-2-2 Motherboard Internal Connectors

(1) DCIN2 (4-pin block): Internal 12V~24V Wide-Voltage Power Connector



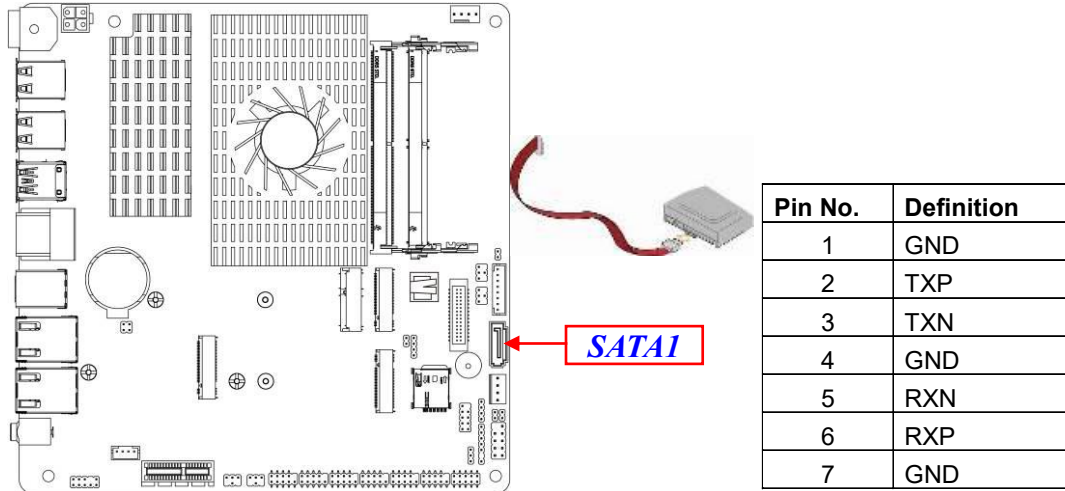
Pin No.	Definition
1	GND
2	GND
3	+12V~24V
4	+12V~24V

(2) CPUFAN1 (4-pin): CPU Fan Connector

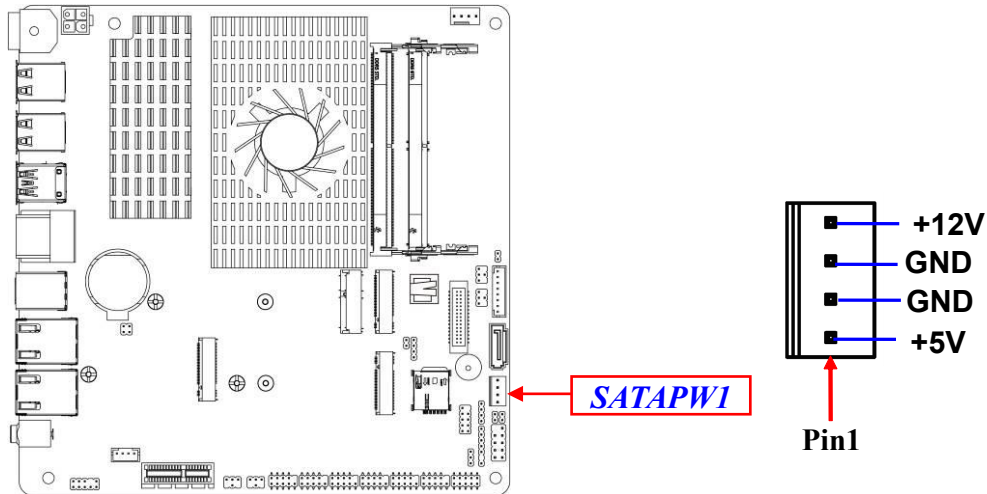


(3) SATA1 (7-pin block):SATAIII Port connector

The board comes with a SATAIII port supporting 6GB/s transfer rate.

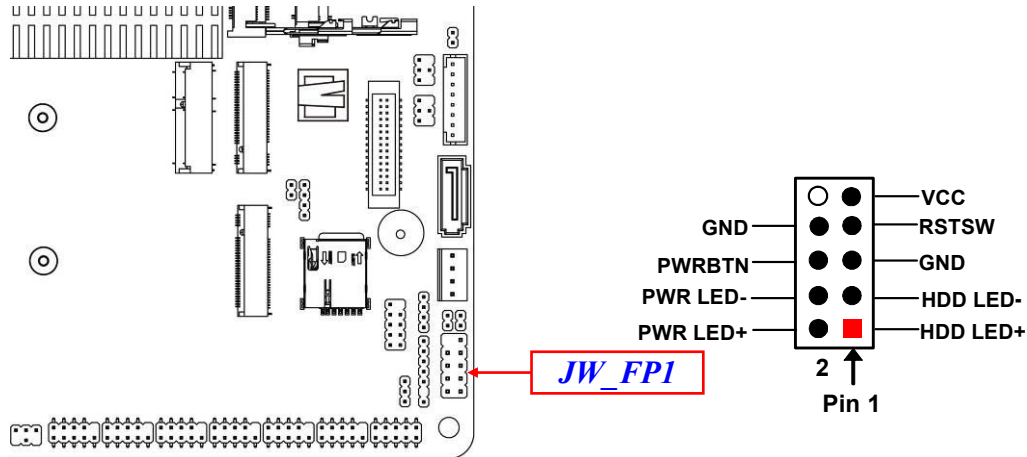


(4) SATAPW1 (4-pin): SATA HDD Power-out Connector



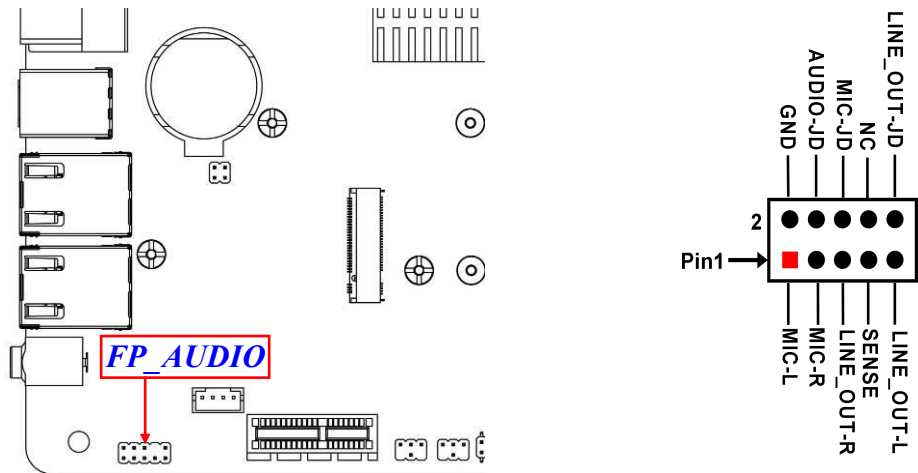
2-2-3 Pin Definition for Headers & Wafers

(1) JW_FP1 (9-pin): Front Panel Header

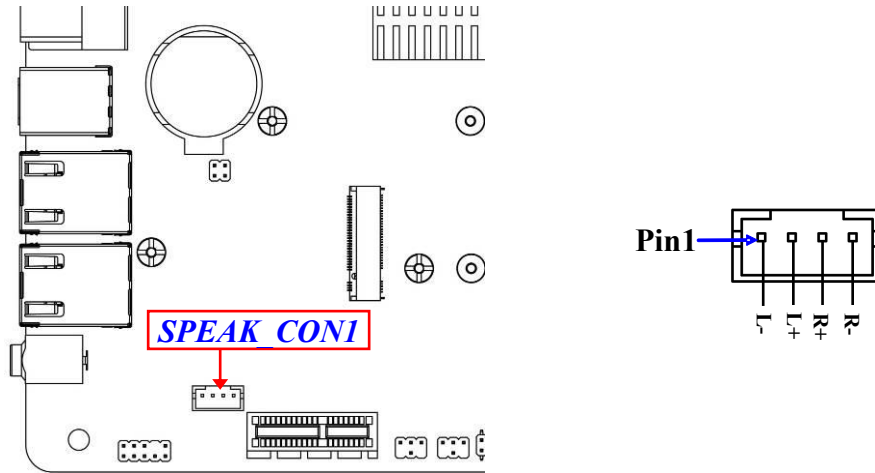


(2) FP_AUDIO1 (9-pin): Line-Out, MIC-In Header

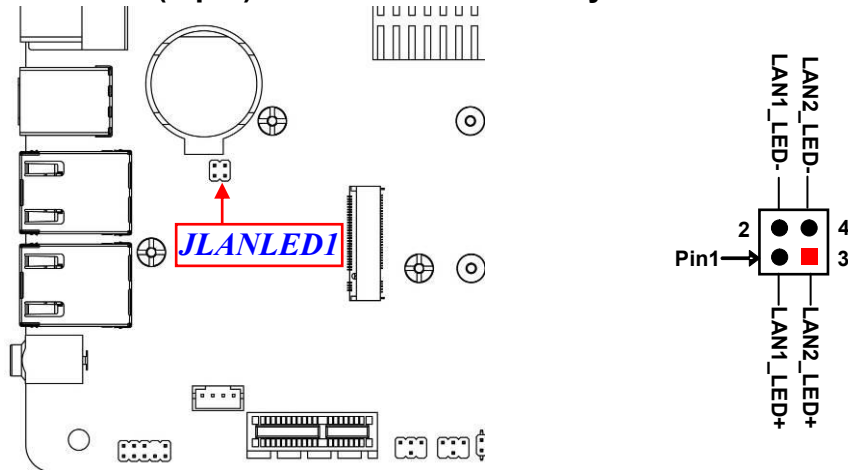
This header is connected to Front Panel Line-out, MIC connector with cable.



(3) SPEAK_CON1 (4-pin): 3W 8Ω Amplifier Wafer

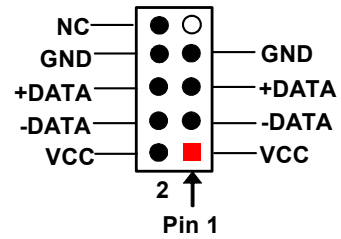
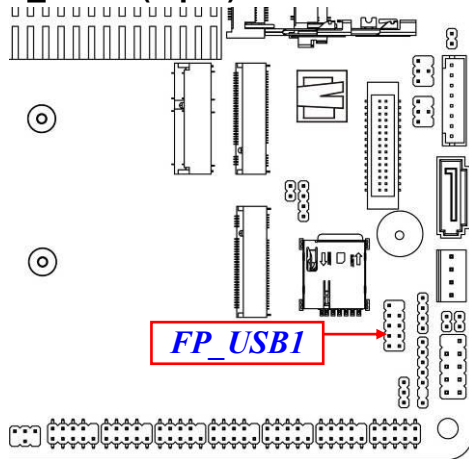


(4) JLANLED1 (4-pin): LAN1 & LAN2 Activity LED Header

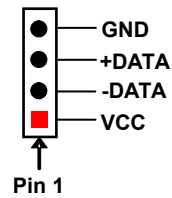
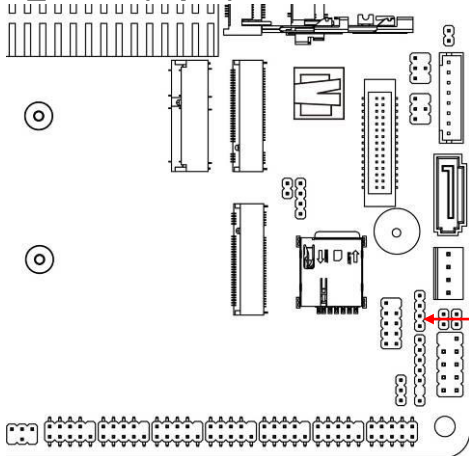


***Note:** Maximum current limit is 300uA while using 3.3V working voltage.

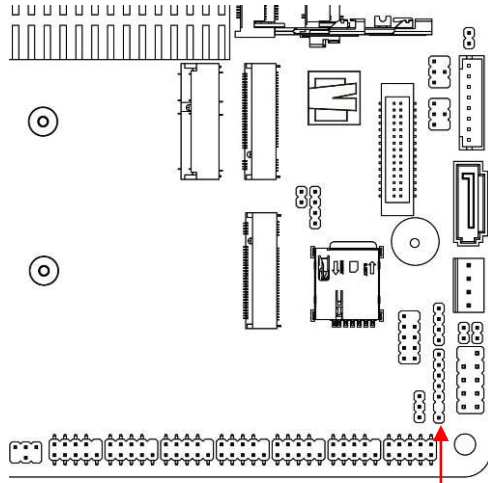
(5) FP_USB1 (9-pin): USB 2.0 Port Header



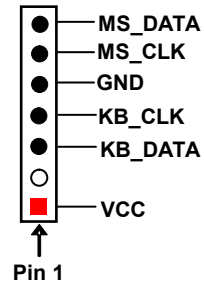
(6) FP_USB2 (4-pin): USB 2.0 Port Header



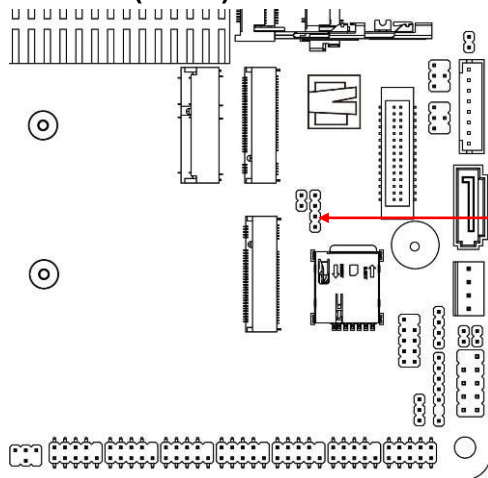
(7) PS2KBMS1 (6-pin): PS/2 Keyboard & Mouse Header



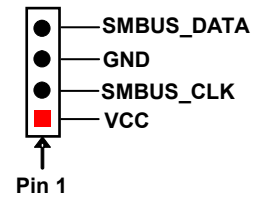
PS2KBMS1



(8) SMBUS1 (4-Pin): SMBUS Header

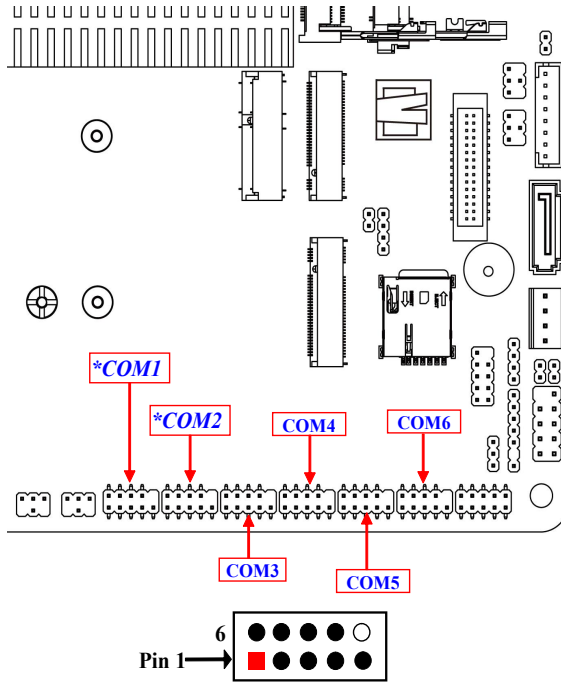


SMBUS1



(9) COM1/2/3/4/5/6 (9-pin): Serial Port Header

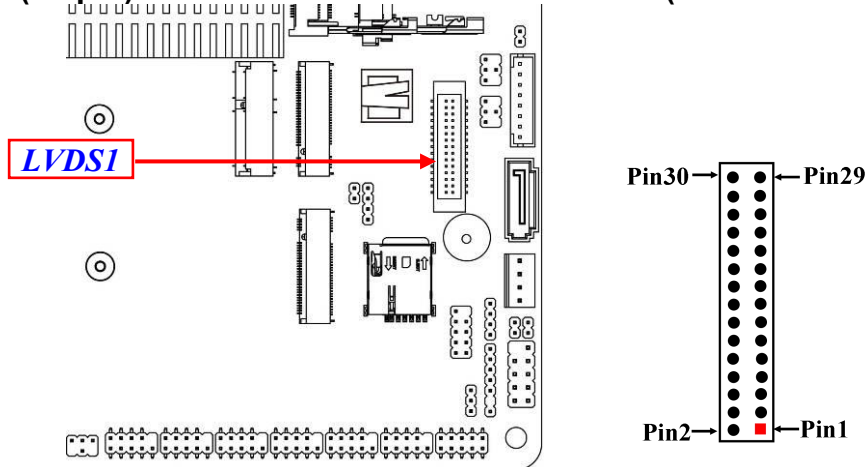
COM1/2:RS232/422/485 Serial Port;
COM3/4/5/6:RS232 Serial Port Header.



Pin NO.	RS232	*RS422 (COM1/2)	*RS485 (COM1/2)
Pin 1	DCD	TX-	DATA-
Pin 2	SIN-	TX+	DATA+
Pin 3	SO-	RX+	NC
Pin 4	DTR-	RX-	NC
Pin 5	GND	GND	GND
Pin 6	DSR-	NC	NC
Pin 7	RTS-	NC	NC
Pin 8	CTS-	NC	NC
Pin 9	RI-	NC	NC

***Notice:** COM1/2 header can function as RS232/422/485 port header. In normal settings COM1/2 functions as RS232 header. With compatible COM cable COM1/2 can function as RS422 or RS 485 header. User also needs to go to BIOS to set 'Transmission Mode Select' for COM1 or COM2 at first, before using specialized cable to connect different pins of this port.

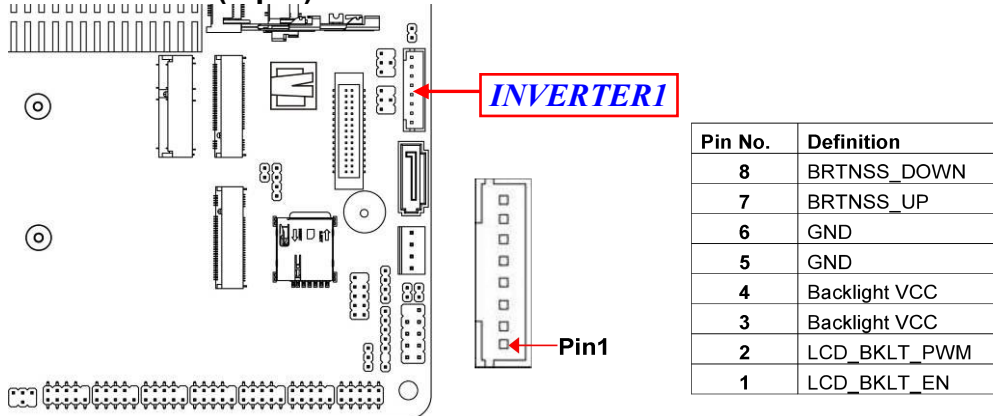
(10) LVDS1 (30-pin): 24-bit Dual Channel LVDS Header(or 1-Lane eDP)



Pin Define	Pin NO.	Pin NO.	Pin Define
LCD_VCC	Pin 30	Pin 29	LCD_VCC
LCD_VCC	Pin 28	Pin 27	LCD_VCC
LVDSA_DATAN0	Pin 26	Pin 25	LVDSA_DATAP0
LVDSA_DATAN1	Pin 24	Pin 23	LVDSA_DATAP1
LVDSA_DATAN2/EDP_TX1N	Pin 22	Pin 21	LVDSA_DATAP2/EDP_TX1P
LVDS_CLKAN/EDP_TX0N	Pin 20	Pin 19	LVDS_CLKAP/EDP_TX0P
LVDSA_DATAN3/EDP_AUXN	Pin 18	Pin 17	LVDSA_DATAP3/EDP_AUXP
GND	Pin 16	Pin 15	GND
GND	Pin 14	Pin 13	GND
CH_SCL	Pin 12	Pin 11	CH_SDA
LVDSB_DATAP0	Pin 10	Pin 9	LVDSB_DATAN0
LVDSB_DATAP1	Pin 8	Pin 7	LVDSB_DATAN1
LVDSB_DATAP2	Pin 6	Pin 5	LVDSB_DATAN2
LVDS_CLKBP	Pin 4	Pin 3	LVDS_CLKBN
LVDSB_DATAP3	Pin 2	Pin 1	LVDSB_DATAN3

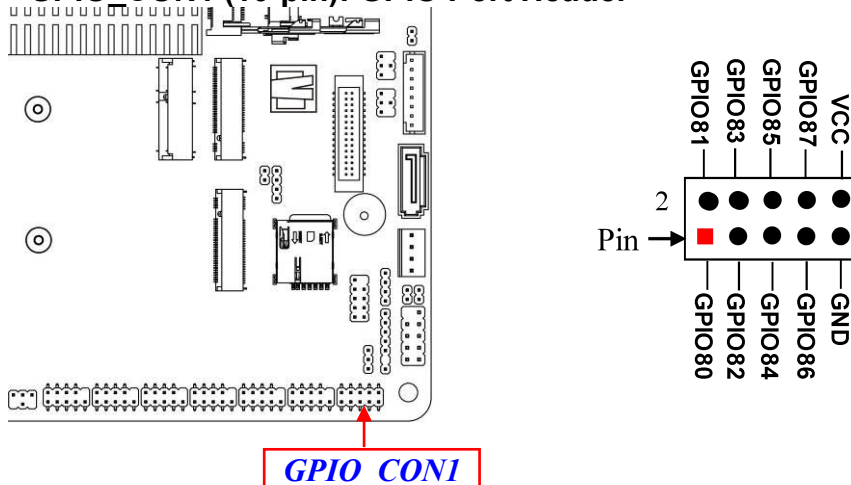
***Note:** Please follow the settings of jumper JP2 for LVDS panel power VCC.

(11) INVERTER1 (8-pin): LVDS/eDP Inverter Connector



Warning! Find Pin-1 location of the inverter and make sure that the installation direction is correct! Otherwise serious harm will occur to the board/display panel!!

(12) GPIO_CON1 (10-pin): GPIO Port Header



***Note:** GPIO_CON1 can function as Debug 80 port or GPIO port via J80PORT1 jumper setting (refer to Page-10 for J80PORT1 description).

2-3 Maximum Voltage & Current Limit

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

Parts		Working Voltage	Current Support
USB Ports from	USB1/USB2	5V	1.5A
	USB3	5V	1.5A
	FP_USB1/ FP_USB 2	5V	1.5A
COM1		5V/12V(via JPCOM1)	0.5A
COM2		5V/12V(via JPCOM2)	0.5A
SATAPWR1		5V	1A
CPUFAN1		12V	1.5A
JW_FP1		5V	1A
JLAN_LED1		3.3V	0.3A
GPIO_CON1		5V	1A
PS2KBMS1		5V	0.5A
SMBUS1		5V	0.3A
LVDS1		3.3V/5V/12V (via JP2 setting)	2A
INVERTER1		5V/12V(via JP1 setting)	2A

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

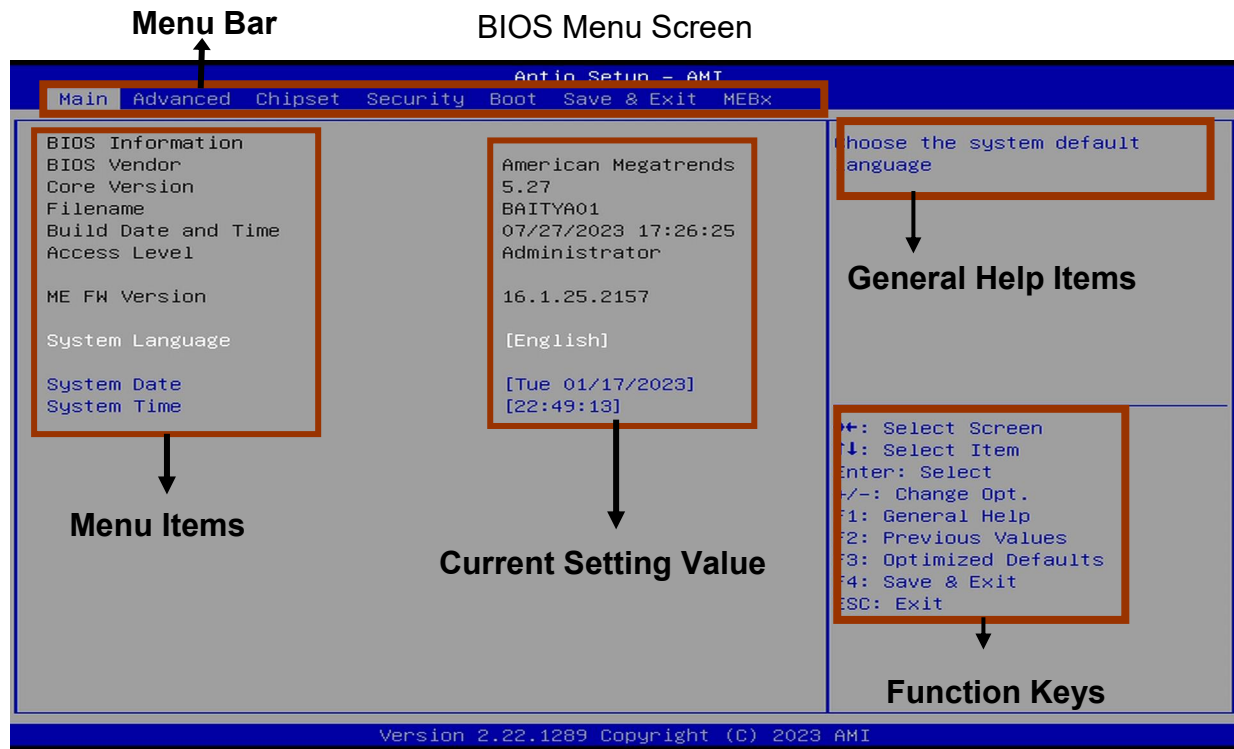
```

Please select boot device:
-----
UEFI: Built-in EFI Shell
Enter Setup
-----
↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults

```

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 ←→ (left, right) 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 value.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the 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

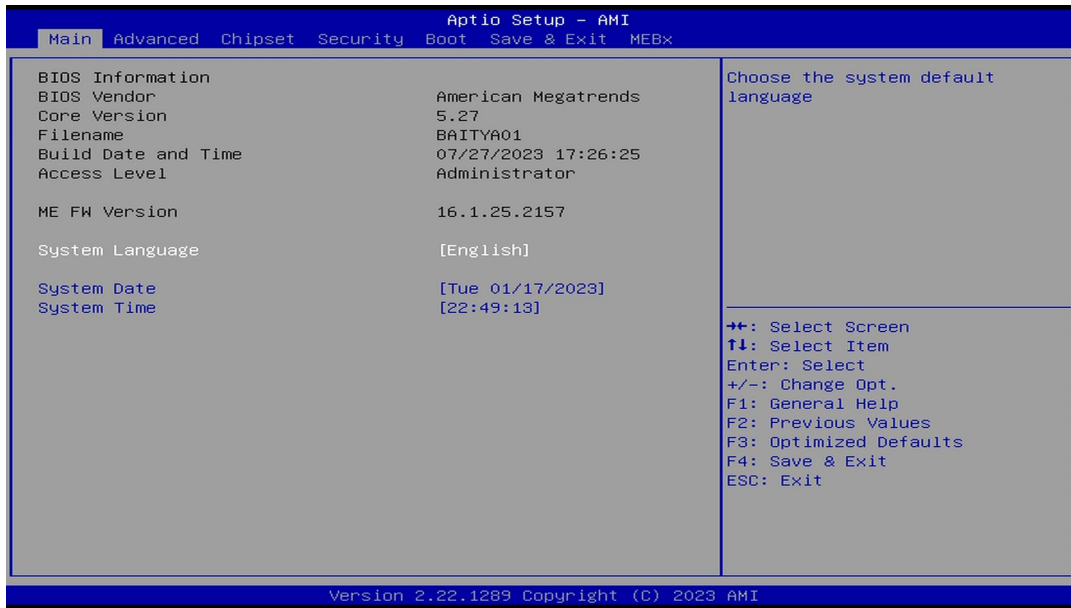
There are six menu bars on top of BIOS screen:

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.



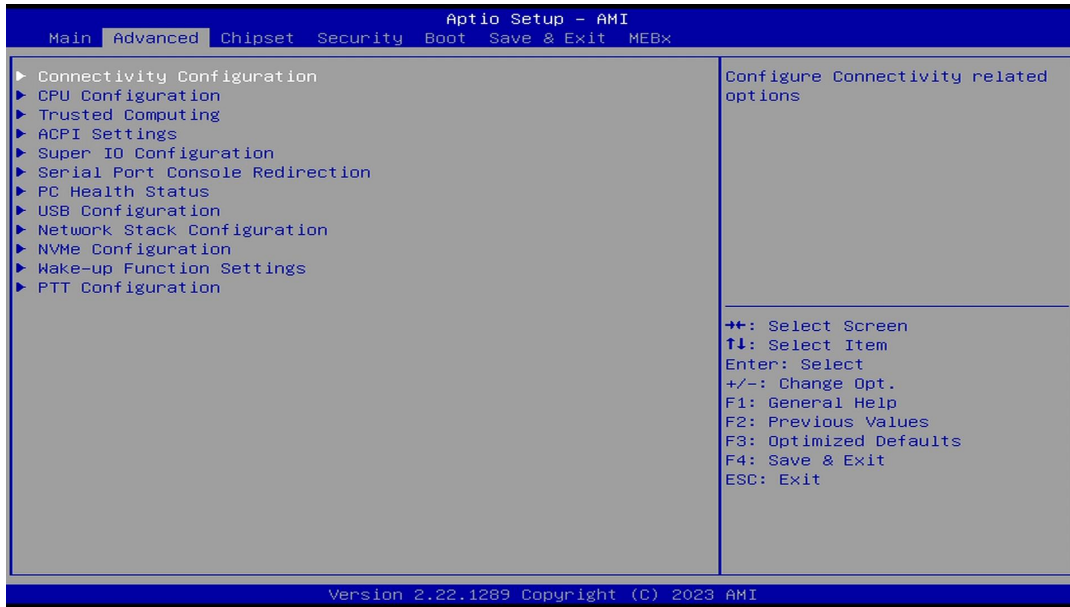
System Date

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



▶ Connectivity Configuration

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

CNVi Mode

This option configures connectivity.

[Auto Detection] means that if Discrete solution is discovered it will be enabled by default. Otherwise integrated solution (CNVi) will be enabled;

[Disable Integrated] disables Integrated solution.

*** Note:** When CNVi is present, the GPIO pins that are used for radio interface cannot be assigned to the other native function.

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

▶ **CPU Configuration**

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

CPU Configuration

▶ **Efficient-Core Information**

Press [Enter] to view the E-Core Information.

▶ **Performance-Core Information**

Press [Enter] to view the P-Core Information.

Boot Performance Mode

Use this item to select the performance state that the BIOS will set starting from reset vector.

The optional settings are:[Max Battery]; [Max Non-Turbo Performance]; [Turbo Performance].

Intel (R) SpeedStep™

Use this item to Allows more than two frequency ranges to be supported.

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

Turbo Mode

Use this item to enable/disable processor turbo mode (requires EMTTM enabled too). AUTO means enabled.

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

C states

Use this item to enable/disable CPU Power management. Allows CPU to go to C states when it's not 100% utilized.

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

Enhanced C-States

Use this item to enable/disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.

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

Package C State Limit

Use this item to select maximum package C State Limit Setting.

Cpu Default: Leaves to Factory default value.

Auto: Initializes to deepest available Package C State Limit.

The optional settings are: [C0/C1]; [C2]; [C3]; [C6]; [C7]; [C7S]; [C8]; [C9]; [C10]; [Cpu Default]; [Auto].

Power Limit 1

Use this item to set Power Limit 1 in Milli Watts. BIOS will round to the nearest 1/8W when programming.

0 = no custom override. For 12.5W, enter 12500.

Overclocking SKU: Value must be between Max and Min Power Limits (specified by PACKAGE_POWER_SKU_MSR).

Other SKUs: This value must be between Min Power Limit and Processor Base Power (TDP) Limit.

Power Limit 1 Time Window

Use this item to set Power Limit 1 Time Window value in seconds. The value may vary from 0 to 128. 0 = default value (28 sec for Mobile and 8 sec for Desktop). Defines time window which Processor Base Power (TDP) value should be maintained.

The optional settings are: [0]; [1]; [2]; [3]; [4]; [5]; [6]; [7]; [8]; [10]; [12]; [14]; [16]; [20]; [24]; [28]; [32]; [40]; [48]; [56]; [64]; [80]; [96]; [112]; [128].

Power Limit 2

Use this item to set Power Limit 2 Value in Milli Watts. BIOS will round to the nearest 1/8W when programming.

0 = no custom override. For 12.5W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

Power Limit 4 Override

Use this item to enable/disable Power Limit 4 override. If this option is disabled, BIOS will leave the default values for Power Limit 4.

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

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

Power Limit 4

Use this item to set Power Limit 4 in Milli Watts. BIOS will round to the nearest 1/8W when programming. For 12.50W, enter 12500. If the value is 0, BIOS leaves default value.

▶ Trusted Computing

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

Security Device Support

Use this item to enables or disables BIOS support for security device. O.S. will not show security device. TCG EFI protocol and INT1A interface will not be available. The optional settings: [Disabled]; [Enabled].

▶ **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)].

▶ **Super IO Configuration**

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

Super IO Configuration

▶ **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: [Disabled]; [Enabled].

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=4]; [IO=2F8h; IRQ=3]; [IO=3E8h; IRQ=4]; [IO=2E8h; IRQ=3];

Transmission Mode Select

The optional settings are: [RS422]; [RS232]; [RS485]

Mode Speed Select

Use this item to RS232/RS422/RS485 Speed Select

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

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=4]; [IO=2F8h; IRQ=3]; [IO=3E8h; IRQ=4]; [IO=2E8h; IRQ=3];

Transmission Mode Select

The optional settings are: [RS422]; [RS232]; [RS485]

Mode Speed Select

Use this item to RS232/RS422/RS485 Speed Select

The optional settings are: [RS232/RS422/RS485=250Kbps]; [RS232=1Mbps, RS422/RS485=10Mbps].

▶ **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: [Disabled]; [Enabled].

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=10]; [IO=2F8h; IRQ=10]; [IO=3E8h; IRQ=10]; [IO=2E8h; IRQ=10]; [IO=2F0h; IRQ=10]; [IO=2E0h; IRQ=10];

▶ **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: [Disabled]; [Enabled].

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=10]; [IO=2F8h; IRQ=10]; [IO=3E8h; IRQ=10]; [IO=2E8h; IRQ=10]; [IO=2F0h; IRQ=10]; [IO=2E0h; IRQ=10];

▶ **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: [Disabled]; [Enabled].

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=11]; [IO=2F8h; IRQ=11]; [IO=3E8h; IRQ=11]; [IO=2E8h; IRQ=11]; [IO=2F0h; IRQ=11]; [IO=2E0h; IRQ=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: [Disabled]; [Enabled].

Change Settings

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

The optional settings are: [Auto]; [IO=3F8h; IRQ=11]; [IO=2F8h; IRQ=11]; [IO=3E8h; IRQ=11]; [IO=2E8h; IRQ=11]; [IO=2F0h; IRQ=11]; [IO=2E0h; IRQ=11];

ERP Support

Use this item to energy-related products function. Disable ERP to active all wake-up functions.

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

Case Open Detect

Use this item to detect if case have ever been opened. 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 **JCASE1** jumper setting for Case Open Detection*); if Pin 1&2 of **JCASE1** are short, system will show Case Open Message during POST.

WatchDog Reset Timer

Use this item to support WDT reset function.

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

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

WatchDog Reset Timer Value

User can set a value in the range of [10] to [255] seconds, or [1] to [255] minutes.

WatchDog Reset Timer Unit

The optional settings are: [Sec.]; [Min.]

WatchDog Wake-up Timer

Support WDT Wake-up.

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

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

WatchDog Wake-up Timer Value

User can set a value in the range of [10] to [4095] seconds, or [1] to [4095] minutes.

WatchDog Wake-up 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 **JATX_AT1** jumper setting Pin 1&2 of for ATX Mode & Pin 2&3 of AT Mode Select).

▶ **Serial Port Console Redirection**

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

COM1

Console Redirection

Use this item to enable or disable Console Redirection.

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

When set as [**Enabled**], user can make further settings in the ‘**Console Redirection Settings**’ screen:

▶ **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 sub-items:

Terminal Type

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

[**ANSI**]: Extended ASCII char set;

[VT100]: ASCII char set;

[VT100Plus]: 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: [9600]; [19200]; [38400]; [57600]; [115200].

Data Bits

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

Parity

A parity bit can be sent with the data bits to detect some transmission errors.

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

Recorder Mode

With this mode enable only text will be sent. This is to capture Terminal data.
The optional settings: [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 Function Key and KeyPad on Putty.
The optional settings: [VT100]; [LINUX]; [XTERMR6]; [SCO]; [ESCN]; [VT400].

Legacy Console Redirection

▶ **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 OPRM Messages

The optional settings: [COM1]

Resolution

On Legacy OS, the number of rows and columns supported redirection

The optional settings: [80x24]; [80x25]

Redirect After POST

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 enable.

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

Serial Port for Out-of-Band Management/

Windows Emergency Management Services (EMS)

Console Redirection EMS

Use this item to enable or disable console redirection.

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

When set as **[Enabled]**, user can make further settings in 'Console

Redirection Settings' screen:

▶ **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 sub-items.

Terminal Type EMS

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

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

Bits per second EMS

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 EMS

The default setting is: [8].

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

Parity EMS

The default setting is: [None].

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

Stop Bits EMS

The default setting is: [1].

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

► **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

CPUFAN Smart Mode

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

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

CPUFAN Full-Speed Temperature

Use this item to set CPUFAN full speed temperature. Fan will run at full speed when above this pre-set temperature.

CPUFAN Full-Speed Duty

Use this item to set CPUFAN full-speed duty. Fan will run at full speed when above this pre-set duty.

CPUFAN Idle-Speed Temperature

Use this item to set CPUFAN idle speed temperature. Fan will run at idle speed when below this pre-set temperature.

CPUFAN Idle-Speed Duty

Use this item to set CPUFAN idle speed duty. Fan will run at idle speed when below this pre-set duty.

► **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: [Enabled]; [Disabled].

USB Mass Storage Driver Support

Use this item to enable or disable USB Mass storage driver support

The optional settings: [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: [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: [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.

▶ **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: [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 PXE boot support will not be available.

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

Ipv6 PXE Support

Use this item to enable IPv6 PXE Boot Support. When set as [Disabled], IPv6 PXE boot support will not be available..

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

PXE boot wait time

Use this item to set wait time in seconds 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 the 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.*

▶ **Wake-up Function Settings**

Wake-up System With Fixed Time

**This item will only show when 'Wake-up System With Dynamic Time' is set as [Disabled].*

Use this item to enable or disable system wake-up by RTC alarm. When this function is enabled, system will wake on the time (hr:: min:: sec) specified.

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

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

Wake-up Hour

Use this item to select 0-23 for example enter 3 for 3am and 15 for 3pm

Wake-up Minute

Use this item to select 0-59

Wake-up Second

Use this item to select 0-59

Wake-up System with Dynamic Time

**This item will only show when 'Wake-up System With Fixed Time' is set as [Disabled].*

Use this item to enable or disable system wake-up by RTC alarm. When this function is enabled, system will wake on the (current time) + (Increase minute(s))

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

Wake-up Minute Increase

Use this item to select 1-60

PS2 KB/MS Wake-Up from S3-S5

PS2 KB/MS Wake-up is affected by ERP function in S4-S5. Please disable ERP before activating this function in S4-S5.

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

USB Power Gating S4-S5

USB Wake-up is affected by ERP function in S4. Please disable ERP before

activating this function in S4.

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

PCIe Wake-up from S3-S5

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

▶ **PTT Configuration**

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

PTT Capability/state

TPM Device Selection

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

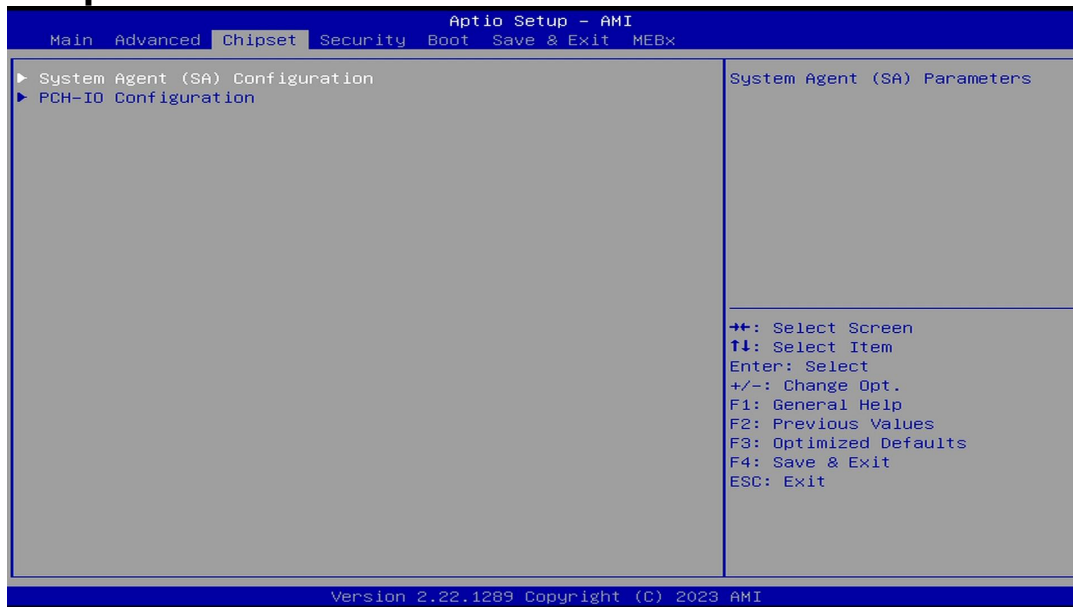
Use this item to select TPM device: PTT or dTPM.

[PTT]- Enables PTT in SkuMgr.

[dTPM 1.2] – Disables PTT in SkuMgr.

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

3-8 Chipset Menu



▶ **System Agent (SA) Configuration**

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

System Agent (SA) Configuration

▶ **VMD setup menu**

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

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 global mapping

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

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

Map this Root Port under VMD

Use this item to Map/UnMap this root port to VMD

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

Root Port BDF details

GTT Size

Use this item to select the GTT Size.

The optional settings are: [2MB]; [4MB]; [8MB].

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: [0M]; [32M]; [64M]; [96M]; [128M]; [160M]; [4M]; [8M]; [12M]; [16M]; [20M]; [24M]; [28M]; [32M/F7]; [36M]; [40M]; [44M]; [48M]; [52M]; [56M]; [60M].

Active Type

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

When set as [Enabled], user can make settings in the 'Panel Type' screen:

Panel Type

Use this item to set panel type.

The optional settings: [800*480 1ch 18bit]; [800*600 1ch 18bit]; [800*600 1ch 24bit]; [1024*600 1ch 18bit]; [1024*768 1ch 18bit]; [1024*768 1ch 24bit];

[1280*800 1ch 18bit]; [1280*800 1ch 24bit]; [1366*768 1ch 18bit]; [1366*768 1ch 24bit]; [1440*900 2ch 18bit]; [1440*900 2ch 24bit]; [1280*1024 2ch 24bit]; [1680*1050 2ch 24bit]; [1920*1080 2ch 24bit]; [eDP].

Backlight Control

Use this item to back light control setting

The optional settings: [PWM Inverted]; [PWM Normal].

Maximum Memory Frequency

Use this item to set maximum memory frequency selections in Mhz.

The optional settings are: [Auto]; [1067]; [1333]; [1400]; [1600]; [1800]; [1867]; [2000]; [2133]; [2200]; [2400]; [2600]; [2667]; [2800]; [2933]; [3000]; [3200]; [3467]; [3600]; [3733]; [4000]; [4200]; [4267]; [4400]; [4600]; [4800]; [5000]; [5200]; [5400]; [5600]; [5800]; [6000]; [6200]; [6400]; [6600]; [6800]; [7000]; [7200]; [7400]; [7600]; [7800]; [8000]; [8200]; [8400]; [8600]; [8800]; [9000]; [9200]; [9400]; [9600]; [9800]; [10000]; [12800].

▶ **PCH-IO Configuration**

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

PCH-IO Configuration

▶ **SATA Configuration**

Use this item to set SATA Device Options Settings.

SATA Configuration

SATA Controller(s)

Use this item to enable/disable SATA Device.

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

SATA Mode Selection

Use this item to determine how SATA controller(s) operate.

The optional setting: [AHCI].

M.2 SATA

Port

Use this item to enable or disable SATA port.

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

SATA Port

Port

Use this item to enable/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].

HD Audio

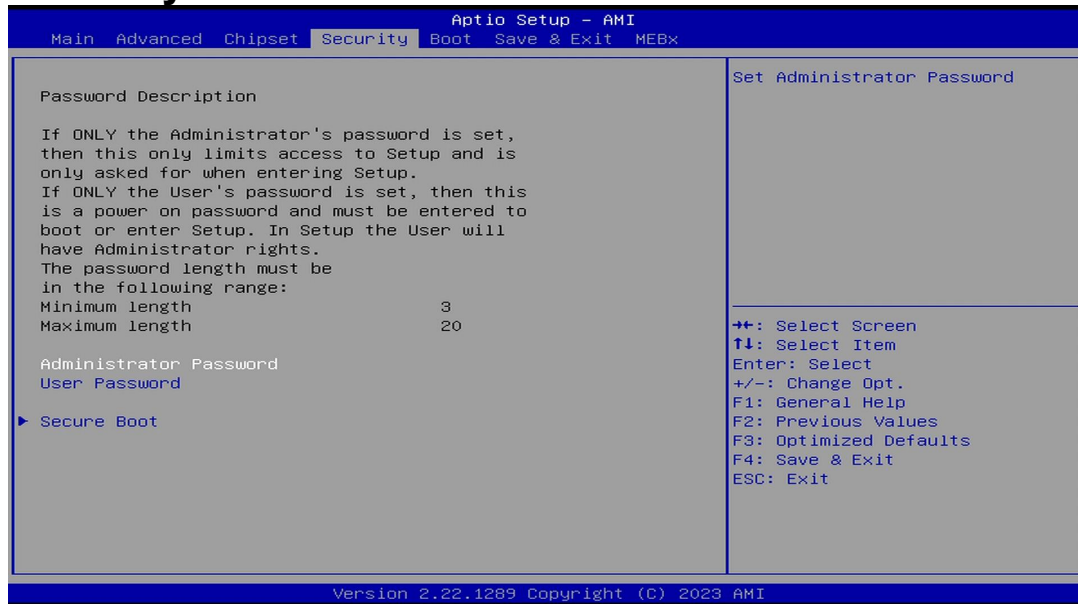
Use this item to control detection of the HD-Audio device.
Disabled= HDA will be unconditionally disabled.
Enabled= HDA will be unconditionally enabled.
The optional settings: [Disabled]; [Enabled].

System State after Power Failure

Use this item to specify what state to go to when power is re-applied after a power failure.

The optional settings: [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 user password.

▶ **Secure Boot**

Press [Enter] to make customized secure settings:

System Mode

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: [Disabled]; [Enabled].

Secure Boot Mode

Set 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: [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. 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 expert users to modify Secure Boot Policy variables without variable authentication, which includes the following items:

Vendor Keys

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: [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 save NVRAM content of Secure Boot variables to a files

Secure Boot variable/Size/Keys/Key Source

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

Use this item to enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
 - a) EFI_SIGNATURE_LIST
 - b) EFI_CERT_X509 (DER)
 - c) EFI_CERT_RSA2048 (bin)
 - d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/COFF Image (SHA256)

Key Source: Factory, Modified, Mixed

3-10 Boot Menu



Boot Configuration

Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup Numlock State

Use this item to select the keyboard NumLock state. The optional settings are: [On]; [Off].

Quiet Boot

Use this item to enable/disable Quiet Boot option. The optional settings are: [Disabled]; [Enabled].

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

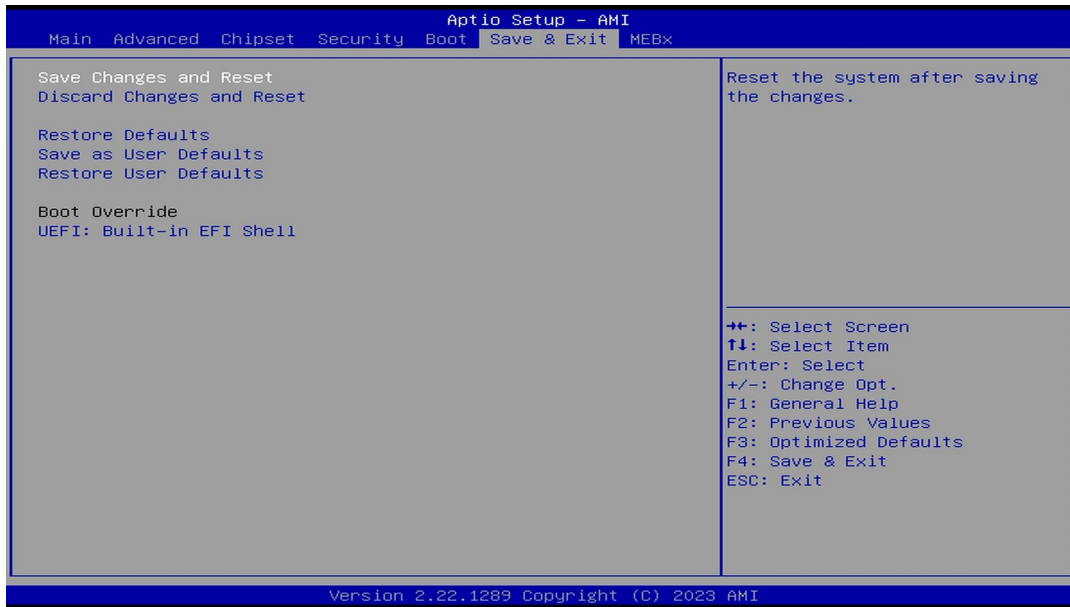
Boot Option Priorities

Boot Option #1

Use this item to set the system boot order.
The optional settings: [UEFI: Built –in EFI Shell]; [Disabled].

Driver Option Priorities

3-11 Save & Exit Menu



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.

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

UEFI: Built – in EFI Shell

Use this item to save configuration and reset.

3-12 MEBx



Configuration locked after EndOfPost