DMTX-ADN1 Series

User's Manual

Revision: 2.0

Release date: December 17, 2025

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 60 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.

USER'S NOTICE

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Manual Revision Information

Reversion	Revision History	Date
2.0	Second Edition	December 17, 2025

Item Checklist

☑ Motherboard
☑ Cable(s)

Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- Onboard Intel® Processor Alder Lake-N series CPU,with low power consumption
- Support 1* DDR5 4800MHz SO-DIMM, maximum capacity up to 32GB
- Onboard 2* GbE LAN port
- Support 1* HDMI2.0, 1* DP1.2 (co-layout CRT), 1* EDP, 1* LVDS, support up to Triple Displays
- Support 1* SATAIII device, 1* M.2 M Key 2242 with SATA interface
- Support 1* M.2 M-key slot, type-2242/2280, PCI-e x2 Gen. 3 Interface
- Onboard 1* M.2 E-key slot, type-2230, support PCI-e x1, USB2.0, CNVi
- Support 2x USB3.2, 8x USB2.0; USB can be Enabled/Disabled by GPIO Command
- Support 6* COM Ports (**COM1/COM2** supports RS232/ RS485)
- Support HD Audio, integrated with 3W Amplifier
- Support 12~19V DC-in
- Support TPM 2.0 **(Optional)**
- Support CPU Smart FAN; Support Watchdog function
- Solution for Digital Signage / KIOSK / POS / ATM / Scale

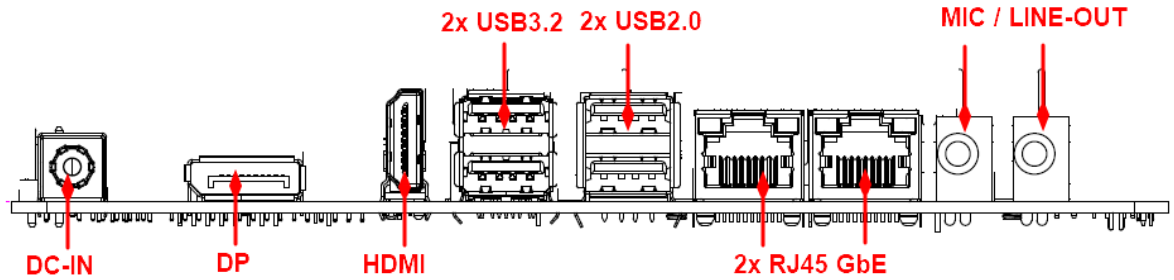
1-2 Specification

Spec	Description
Design	● Mini-ITX SBC; PCB size: 17x 17 cm
Embedded CPU	● Integrated with Intel® Alder Lake-N series CPU ** **Note:** CPU model varies from different IPC options. Please consult your dealer for more information of onboard CPU.TDP varies depending on CPU.*
Memory Slot	● 1* DDR5 SO-DIMM slot support 1* DDR5 4800MHz up to 32GB ***Note:** Memory clock supporting range is decided by specific CPU of the model. For more memory compatibility information please consults your local dealer.
Expansion Slot	● ***M2E1:***1* M.2 E-key type-2230 (USB 2.0/PCIe 3.0 x1 interface) supports CNVi for WIFI/BT Module
Storage	● ***M2M1:***1* M.2 M-key type-2242/2280 (PCIe 3.0 x2 interface) support NVMe ● ***M2M2:*** 1* M.2 M-Key type-2242, SATA Co-layout with SATAIII Port ● 1* SATAIII 6Gb/s port
LAN Chip	● Integrated with 2* Realtek RTL8111H Gigabit LAN chip
Audio Chip	● Integrated with Realtek HD audio chip, with 3W AMP on board
Graphics	***Intel® UHD Graphics, shared memory for***: ● *1* HDMI 2.0b* ● *1* DP, co-layout CRT* ● *1* LVDS* ● *1* eDP* ***Note:** Support Triple Displays.*
BIOS	● AMI 256Mb Flash ROM
Rear I/O	● 2* GbE RJ-45 LAN port ● 2* USB3.2 ● 2x USB2.0 ● 1x HDMI ● 1x DP ● 1* Audio Line-out/MIC port
Internal I/O	● 3* 9-pin USB 2.0 header (Expansible to 6* USB 2.0 ports)

	● 6* Serial port header (COM1/COM2: RS232/485, COM3/4/5/6: RS232) ● 1* LVDS ● 1* EDP header ● 1* LVDS inverter header ● 1* 8-bit GPIO header ● 1* SMBUS header ● 1* CPU FAN connector ● 1* 4-pin internal 12~28V DC-in power connector **(DCIN2)** ● 1* SATA Power-out connector ● 1* Front panel header ● 1* Front panel audio header ● 1* 3W amplifier wafer **(SPEAK_CON)**
TPM 2.0	● Factory Optional, Supported by **DMTX-ADN1-N97002**
OS Support	● *for detailed OS support information please visit our website for latest update*

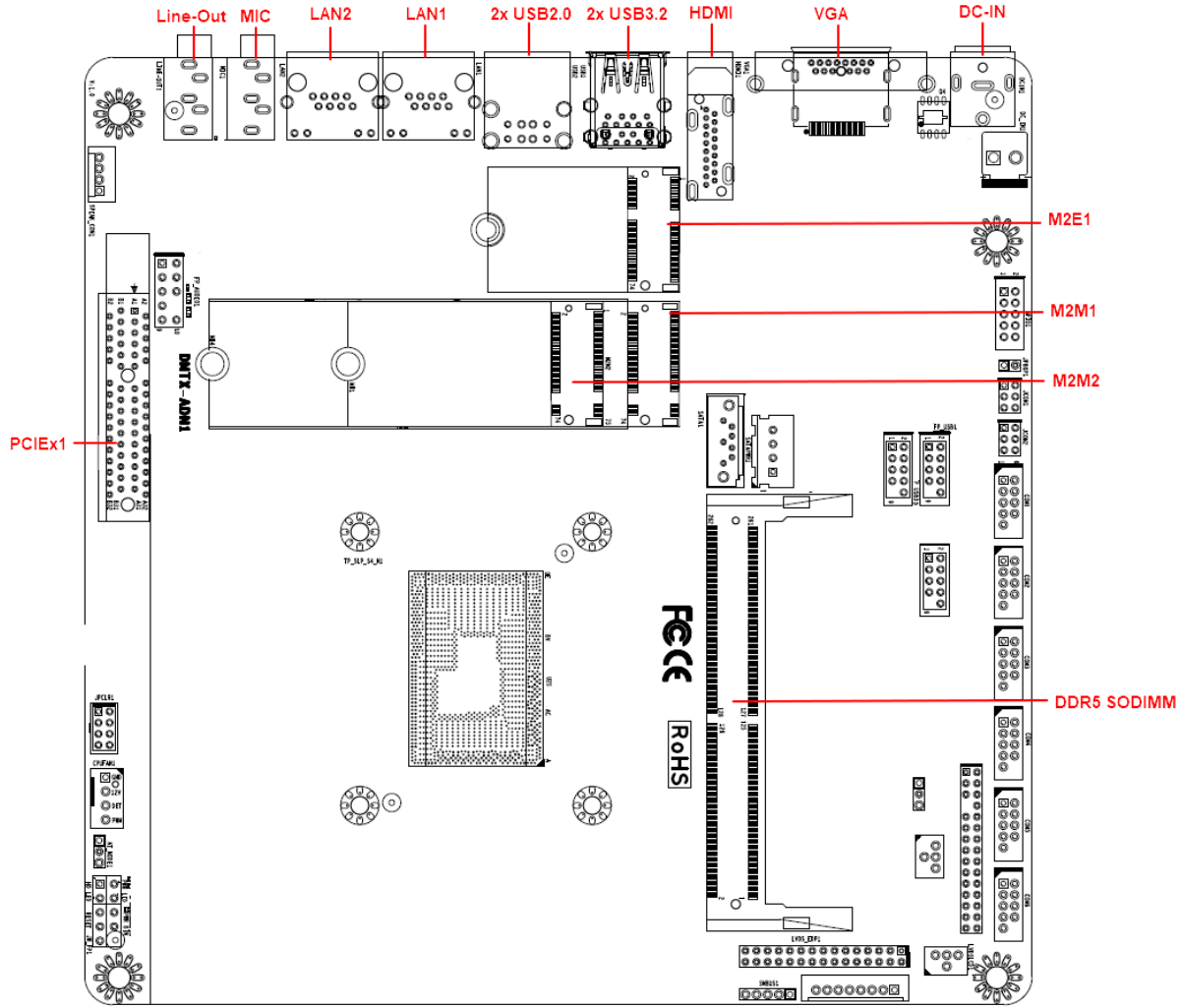
1-3 Layout Diagram

Rear IO Diagram:

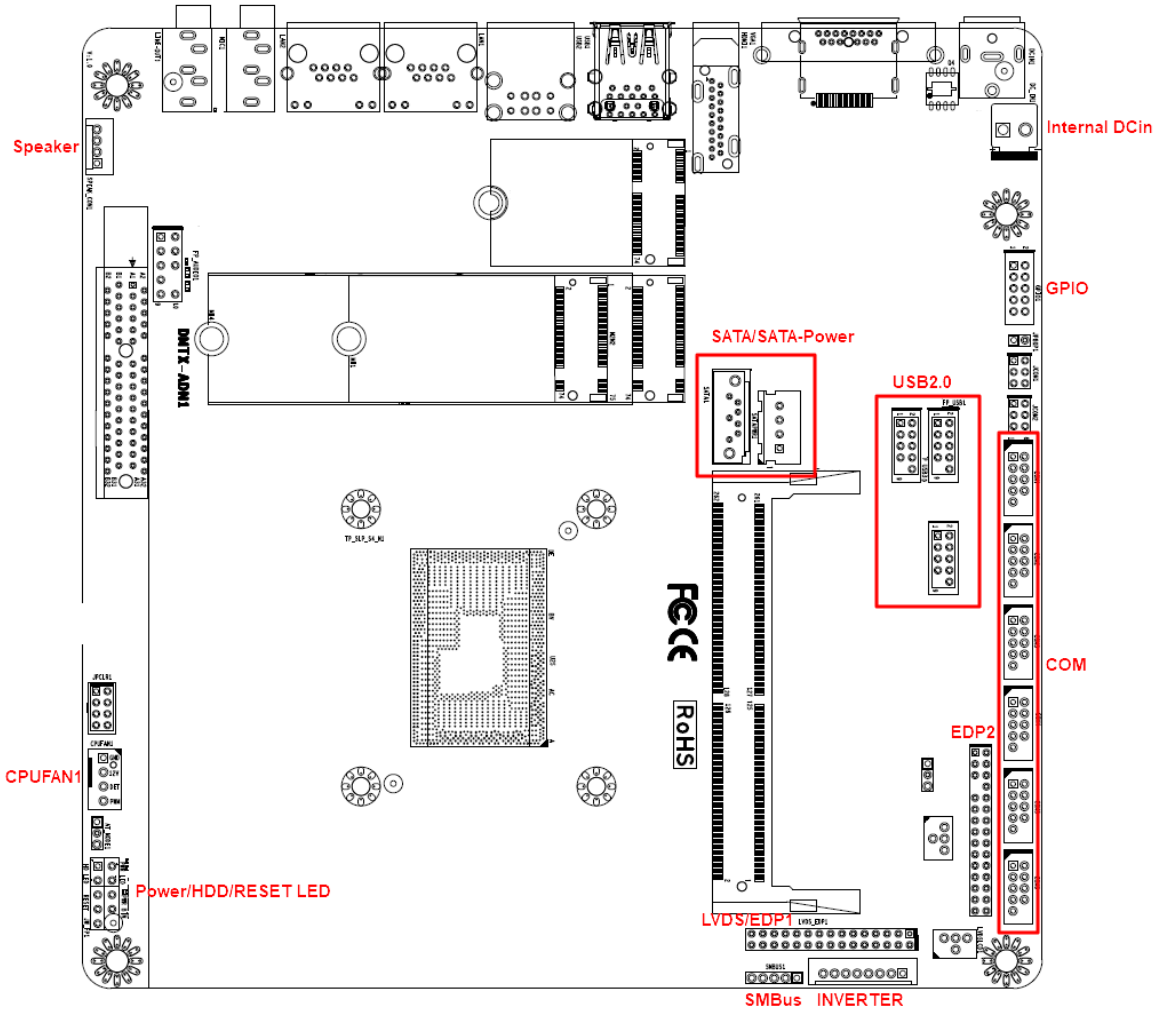


The board has a 12~19V DC-in power connector **(DCIN1)** in I/O back panel and an internal 12~19V power connector **(DCIN2).** User can only connect one type of compatible power supply to one of them to power the system.

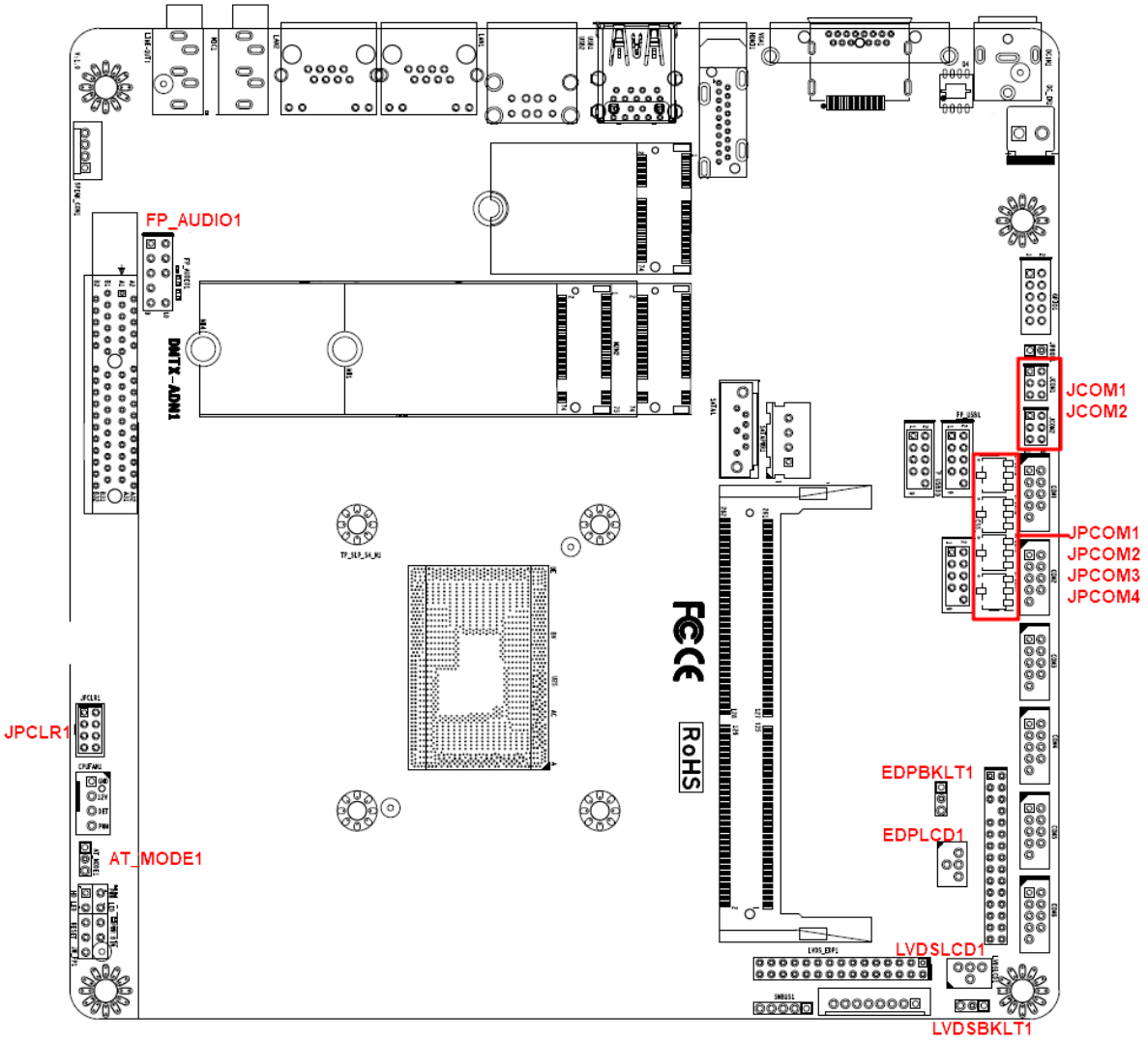
Connectors and Slots:



Internal Connectors



Internal Jumpers



Jumpers/Internal Headers

Jumper	Name	Description	Pitch
JCOM1	COM1 Port RS232/485 Select	6-Pin Block	2.0mm
JCOM2	COM2 Port RS232/485 Select	6-Pin Block	2.0mm
JPCOM1	COM1 Function Select	4-Pin Block	2.0mm
JPCOM2	COM2 Function Select	4-Pin Block	2.0mm
JPCOM3	COM3 Function Select	4-Pin Block	2.0mm
JPCOM4	COM4 Function Select	4-Pin Block	2.0mm
EDPBKLT1	EDP backlight Power Select	3-Pin Block	2.0mm
EDPLCD1	EDP LCD Power Select	4-Pin Block	2.0mm
LVDSBKLT1	LVDS backlight Power Select	3-Pin Block	2.0mm
LVDSLCD1	LVDS LCD Power Select	3-Pin Block	2.0mm
AT_MODE1	AT/ATX Power Mode	3-Pin Block	2.0mm
JPCLR1	Clear RTC/CMOS, Case-Open	8-Pin Block	2.0mm
FP_AUDIO	Front Panel Audio Header	9-pin Block	2.0mm
SPEAK_CON1	3W Amplifier Wafer	4-pin Block	2.0mm
GPIO	GPIO Port Header	10-pin Block	2.0mm
COM1/2/3/4/5/6	RS232 Serial Port Header	9-pin Block	2.0mm
JW_FP1	Front Panel Header (PWR LED/ HDD LED/Power Button /Reset)	8-pin Block	2.54mm
SMBUS	SMBUS Header	5-pin Block	2.0mm
FP_USB1/2/3	Internal USB2.0 Port Header	9-pin Block	2.0mm
LVDS/EDP1	LVDS/EDP Header	30-pin Block	2.0mm
EDP2	EDP Header	30-pin Block	2.0mm
INVERTER1	LVDS_EDP Inverter Wafer	8-pin Block	2.0mm

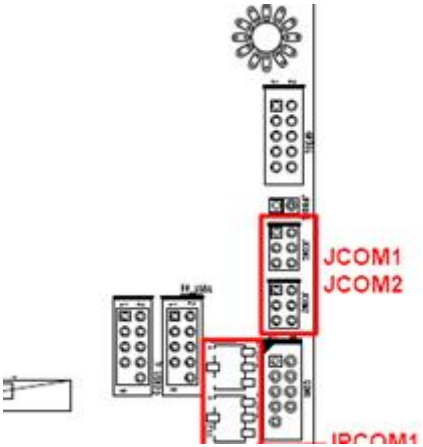
Connectors

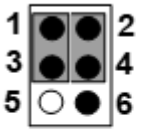
Connector	Name
LAN1/LAN2	RJ-45 LAN Port Connector x2
USB1	USB3.2 (Gen.2) Port Connector x2
USB2	USB2.0 Port Connector x2
DP1	Display Port Connector x1
HDMI1	HDMI Port Connector x2
Line-Out	Audio Line-Out Connector
MIC	Audio MIC Connector
COM1/COM2	Serial Port (RS232/485) Connector **Support 5V/12V*
DCIN1	12~19V DC–in Power Connector
DCIN2	Internal 2-Pin 12~19V DC-in Power Connector
CPUFAN1	CPU FAN Connector
SATA1	SATAIII Port Connector
PWROUT	SATA HDD Power-out Connector

Chapter 2
Hardware Installation

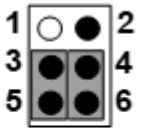
2-1 Jumper Settings

JCOM1/JCOM2 (6-pin): COM1 Port Pin-9 Function Select (2.0 pitch)



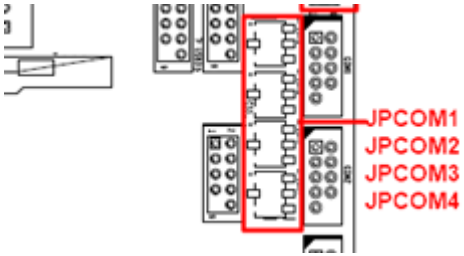


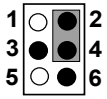
2-4 Closed
1-3 Closed
COM = RS485



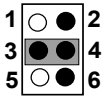
4-6 Closed
3-5 Closed
COM = RS232

JPCOM1/JPCOM2/JPCOM3/JPCOM4 (4-pin): COM3 Header Pin-9 Function Select (2.0 pitch)

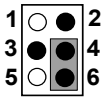




2-4 Closed:
RI=RS232;

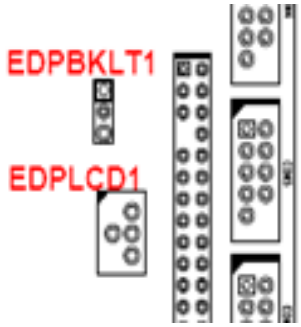


3-4 Closed:
RI= +5V;



4-6 Closed:
RI= +12V.

EDPBKLT1: EDP Backlight VCC 5V/12V Select (2.0 pitch)



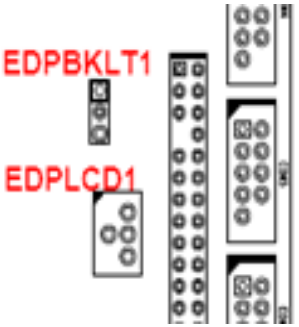


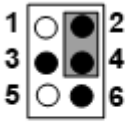
1-2 Closed: VCC=5V



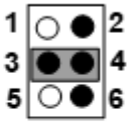
2-3 Closed: VCC=12V. (Default)

EDPLCD1: EDP LCD VCC 3.3V/5V/12V Select (2.0 pitch)

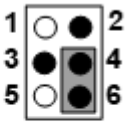




2-4 Closed:
LCD VCC=12V

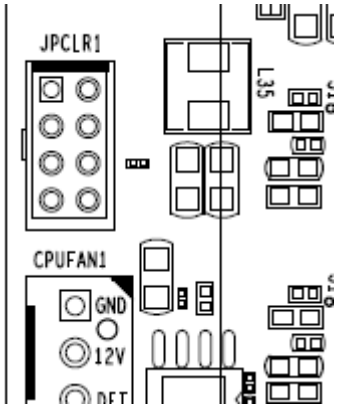


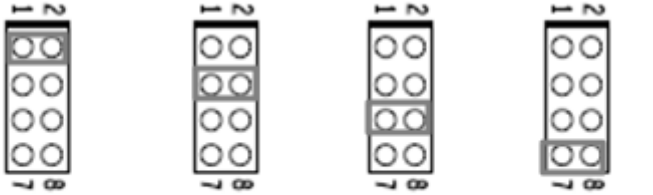
3-4 Closed:
LCD VDD=5V



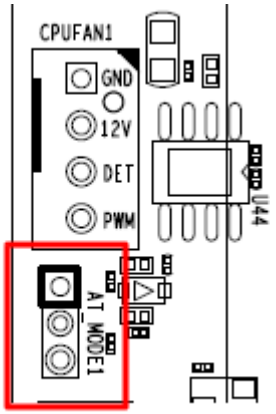
4-6 Closed:
LVD VCC=3.3V

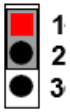
JPLCR1: Clear RTC, CMOS, ITX Override, Case Open Setting (2.0 pitch)



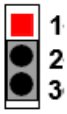


AT_MODE1 (3-pin): ATX Mode/AT Mode Select (2.0 pitch)





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.*

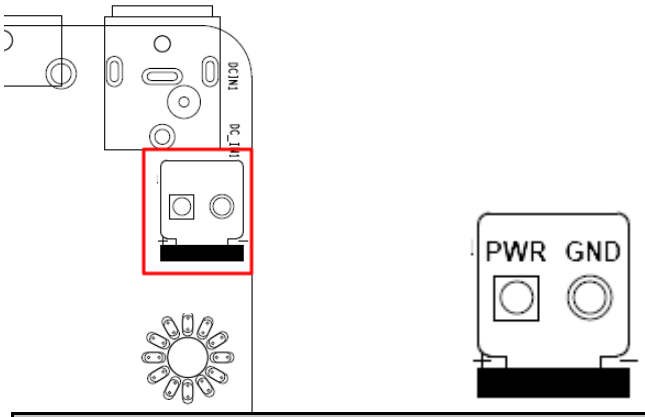
2-2 Connectors, Headers and Wafers

2-2-1 Rear I/O Panel Connectors

Icon	*Name*	*Function*
	**RJ-45 LAN Port**	This connector is standard RJ-45 LAN jack for Network connection which supports10/100/1000 Mbps Ethernet data transfer rate
	**Type-A USB2.0 Port**	To connect USB keyboard, mouse or other devices compatible with USB 2.0 specification.
	**Type-A USB3.2 (Gen.2) Port**	To connect USB keyboard, mouse or other devices compatible with USB3.2 (Gen.2) specification. Ports support up to 10Gbps data transfer rate.
	**HDMI2.0b Port**	For user to connect display device that support HDMI2.0b specification.
	**Display Port**	To the system to corresponding Display device with Compatible display port cable
	**Audio Connector**	Green: Line-out connector Pink: MIC connector
	**Serial Port**	RS232/422/485 with 5V/12V selectable
	**12~19V DC-in Power Jack**	For user to connect compatible power adapter to provide power supply for the system.

2-2-2 Motherboard Internal Connectors

(1) DCIN2 (4-pin): Internal 12~19V DC-in Power Connector



Warning! The board has a 12V~19V DC-in power connector **(DCIN1)** on I/O back panel and an internal 12V~19V power connector **(DCIN2).** User can only connect one type of compatible power supply to one of them to power the system.

(2) CPUFAN (4-pin): CPU FAN Connector (2.54 pitch)

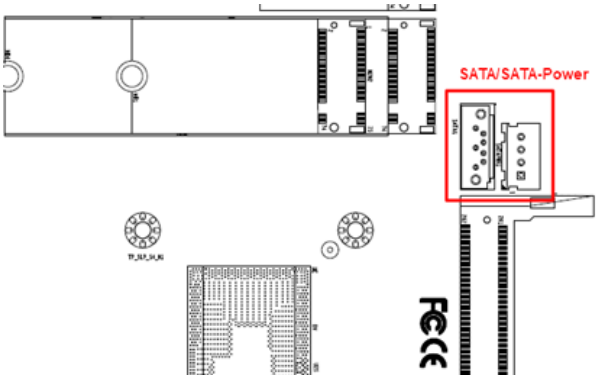


Note: Maximum current limit is **1.5A while using **12V** working voltage*

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

This is a high-speed SATAIII port that supports 6GB/s transfer rate.

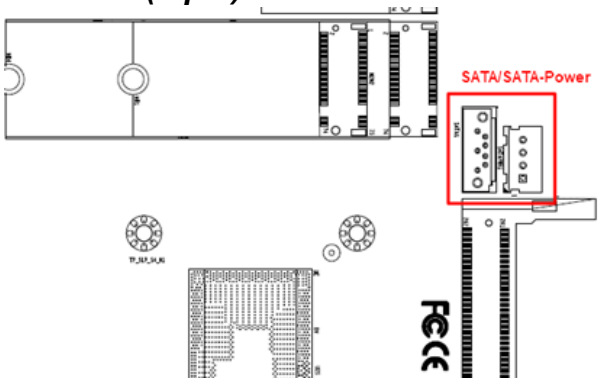
*Notice: The SATA port and the M.2 SATA slot share the same interface and cannot be used simultaneously. Only one may be active at a time.

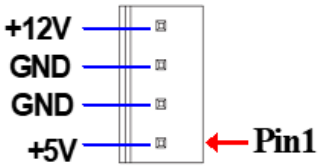




Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

(4) PWROUT (4-pin): SATA HDD Power-Out Connector (2.54 pitch)



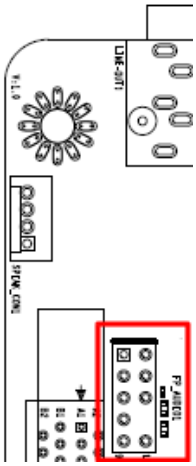


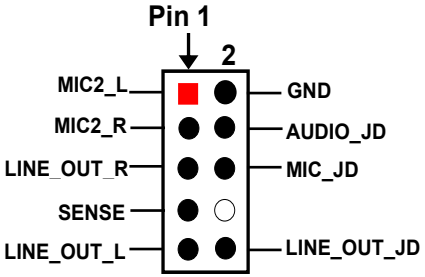
Warning: *Make sure that Pin-1 of compatible SATA Power out connector is inserted into corresponding Pin-1 of* ***SATAPWR*** *connector to avoid possible damage to the board and hard disk driver!*

2-2-3 Pin Definition for Headers & Wafers

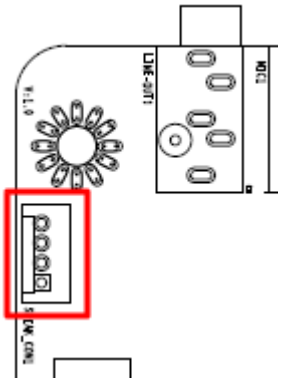
FP_AUDIO (9-pin): Front Panel Audio Header (2.0 pitch)

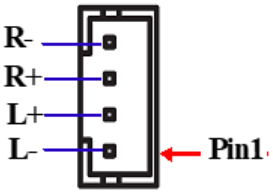
This header connects to Front Panel Line-out, MIC-In connector with cable.



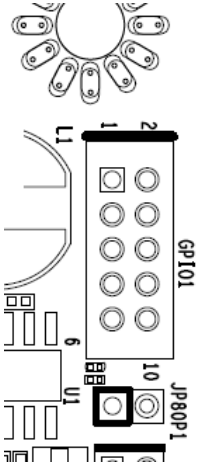


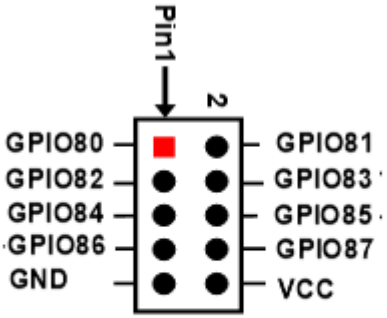
SPEAK_CON (4-pin): 3W Amplifier Wafer (2.0 pitch)





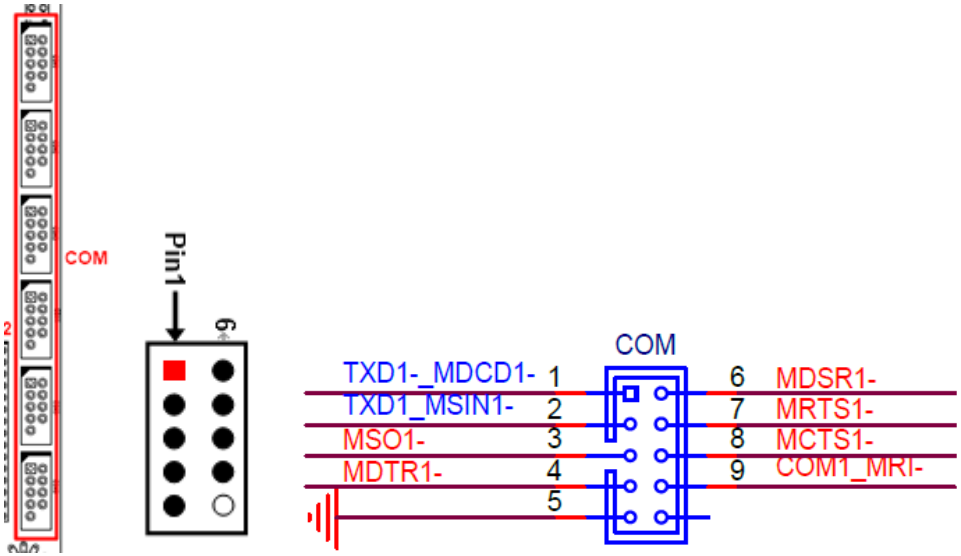
GPIO (10-pin): GPIO & 80 Port Header (2.0 pitch)



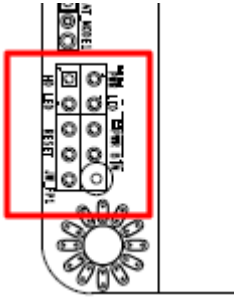


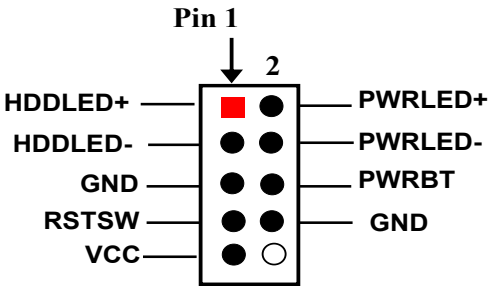
JP80P Open: For 80Port Function;
JP80P Closed: Normal 8-bit GPIO.

COM1/2/3/4/5/6 (9-pin): RS232 Serial Port Headers (2.0 pitch)

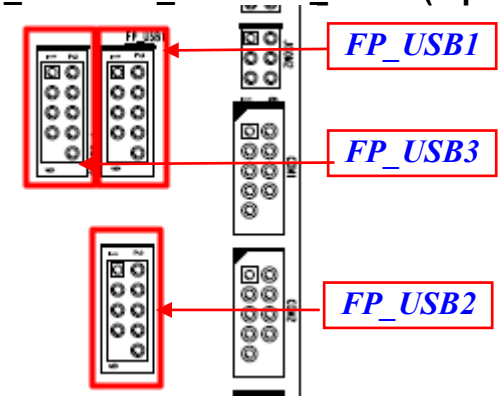


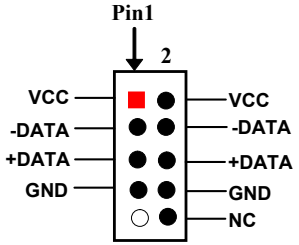
JW_FP1 (10-pin): Front Panel Function Select (2.54 pitch)



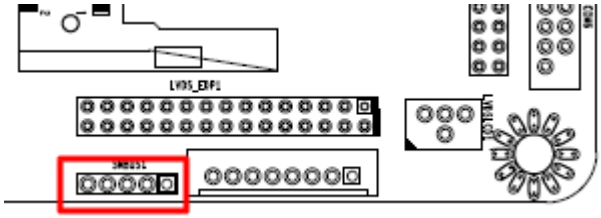


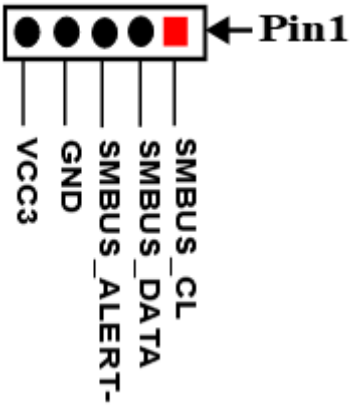
FP_USB1/FP_USB2/FP_USB3 (9-pin): USB 2.0 Port Header (2.0 pitch)



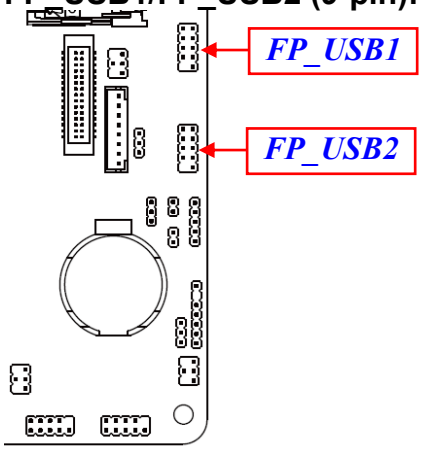


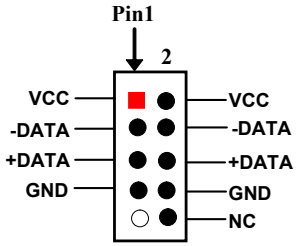
SMBUS (5-pin): SM BUS Header (2.0 pitch)





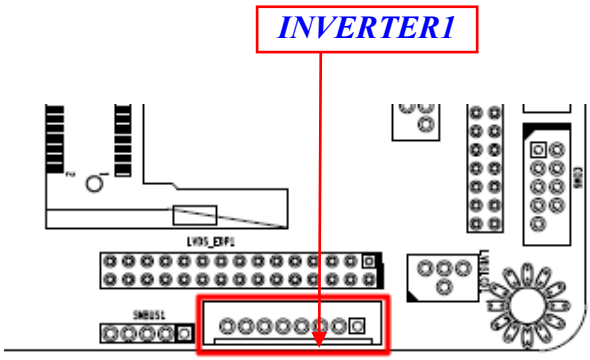
FP_USB1/FP_USB2 (9-pin): USB 2.0 Port Header (2.0 pitch)

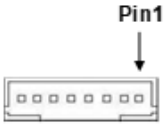




Note:* *Maximum current limit is **1.5A while using 5V working voltage*

INVERTER1 (8-pin): LVDS Inverter Connector (2.0 pitch)

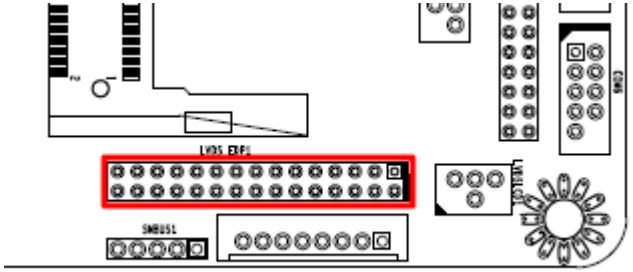


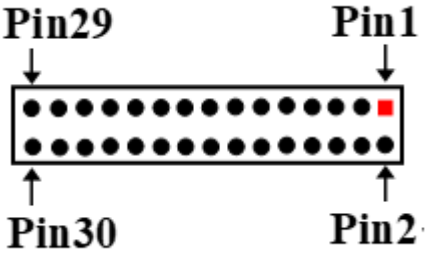


Pin No.	Definition
1	LCD_BKLT_EN
2	LCD_BKLT_PWM
3	Backlight VCC
4	Backlight VCC
5	GND
6	GND
7	BRTNSS_UP
8	BRTNSS_DOWN

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!!*

LVDS_EDP1 (30-pin): LVDS/EDP Port Header (2.00 pitch)





Pin Define	Pin NO.	Pin NO.	Pin Define
LCD_VCC	Pin 1	Pin 2	LCD_VCC
LCD_VCC	Pin 3	Pin 4	GND
GND	Pin 5	Pin 6	GND
LVDSA_DATAN0	Pin 7	Pin 8	LVDSA_DATAP0
LVDSA_DATAN1_eDP_TX1N	Pin 9	Pin 10	LVDSA_DATAP1_eDP_TX1P
LVDSA_DATAN2_eDP_TX0N	Pin 11	Pin 12	LVDSA_DATAP2_eDP_TX0P
GND	Pin 13	Pin 14	GND
LVDS_CLKAN_eDP_AUXN	Pin 15	Pin 16	LVDSA_CLKAP_eDP_TX0P
LVDSA_DATAN3	Pin 17	Pin 18	LVDSA_DATAP3
LVDSB_DATAN0	Pin 19	Pin 20	LVDSB_DATAP0
LVDSB_DATAN1	Pin 21	Pin 22	LVDSB_DATAP1
LVDSB_DATAN2	Pin23	Pin 24	LVDSB_DATAP2
GND	Pin 25	Pin 26	GND
LVDS_CLKBN	Pin 27	Pin 28	LVDS_CLKBP
LVDSB_DATAN3	Pin 29	Pin 30	LVDSB_DATAP3

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 and headers) for setup reference:

Parts		Working Voltage	Current Support
USB Port from	***USB1***	5V	***900mA***
	USB2	5V/12V	500mA x2
	USB3 (Type-C ALT)	5V	3A
	FP_USB1	5V	1.5A
	FP_USB2	5V	1.5A
FP		5V	1A
LVDS_EDP		3.3V/5V/12V (via jumper setting)	**2A**
INVERTER1		5V/12V/Adapter VCC (via jumper setting	**2A**
CPUFAN1		12V	1.5A
SATAPWR		5V	1A
GPIO		5V	1A
SMBUS		5V	0.3A

Chapter 3
Introducing BIOS

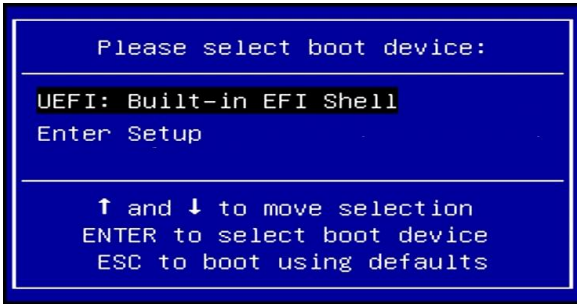
Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download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

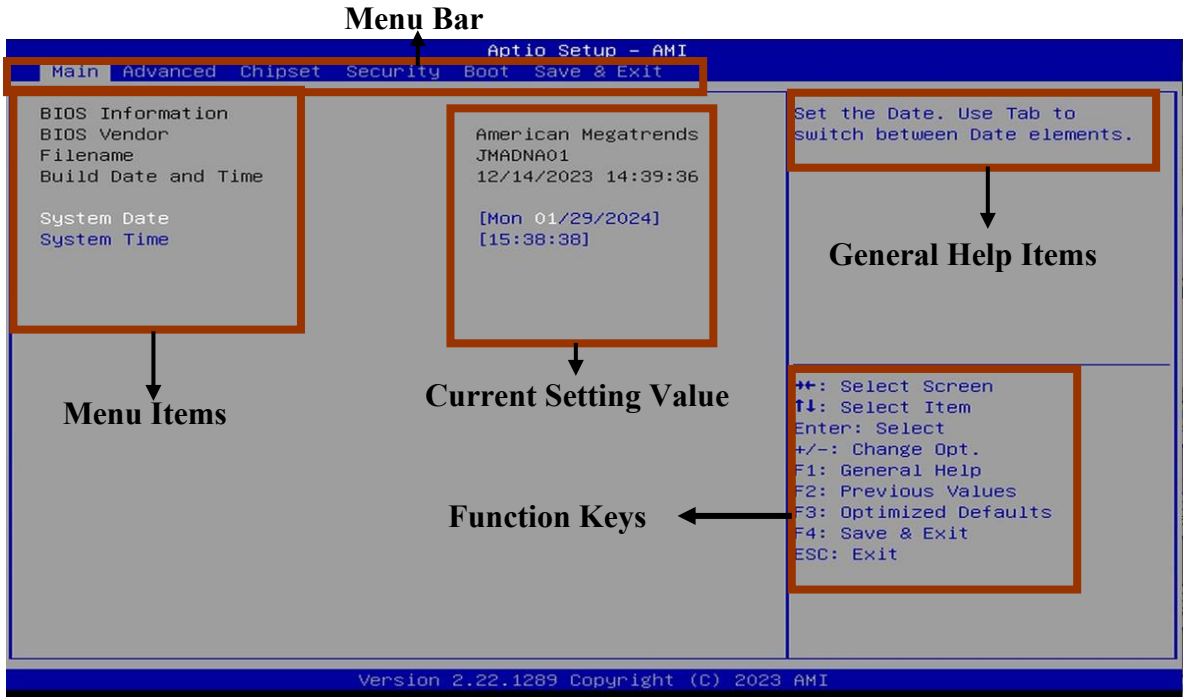
If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at 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 Popup 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←→ (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 & Exit.
- 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

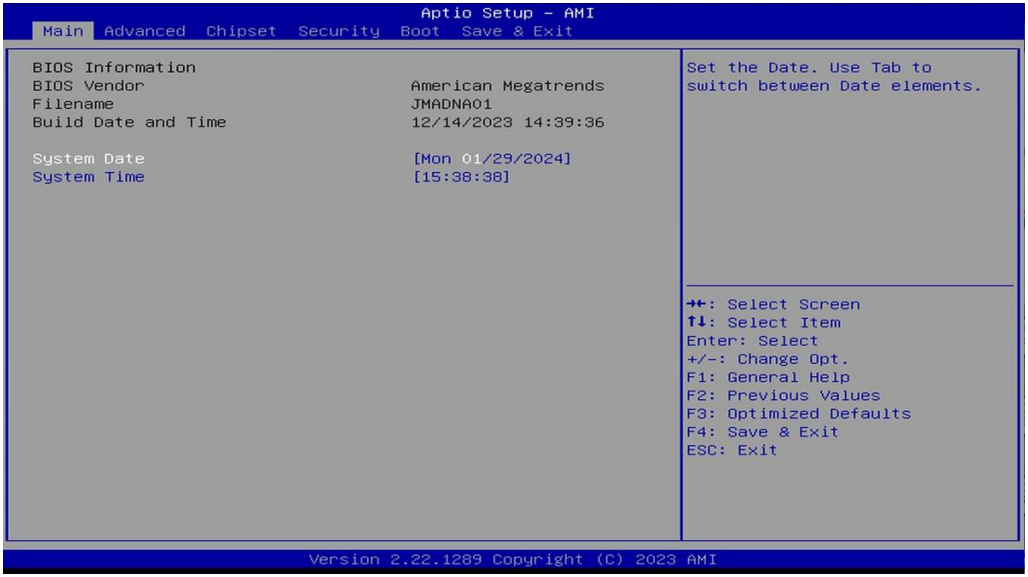
There are six menu bars on top of BIOS screen:

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.

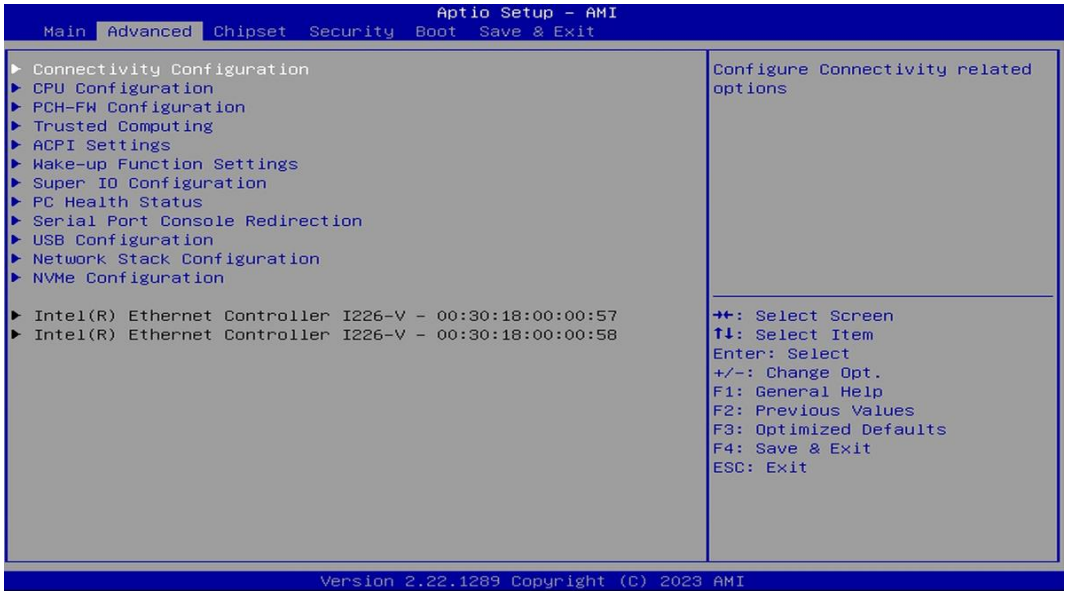
3-6 Main Menu

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-items:

CNVi Mode

Use this item to 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.

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

- **CPU Configuration**

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

Intel(R) SpeedStep(tm)

Use this item to allows more than two frequency ranges to be supported

The optional settings: [Disabled]; [Enabled]

Turbo Mode

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

The optional settings: [Disabled]; [Enabled]

C-States

Use this item to enable or disable C-State.

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

- **PCH-FW Configuration**

Use this item to configure management engine technology parameters

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

TPM Device Selection

Use this item to selects 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 date saved on it will be lost.

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

  - **Firmware Update Configuration**

    Use this item to enable/disable Me FW Image Re-Flash function.

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

- **Trusted Computing**

Press [Enter] to enable or disable '**Security Device Support**'.

Security Device Support

Use this item to enable or disable BIOS support for security device.o.s. will not show security device. TCG EFI protocol and INT1A interface will not be available

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

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

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]

Device Select

Use this item to TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated.

The optional settings are: [TPM 1.2]; [TPM 2.0]; [Auto]

► **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)].

- **Wakeup 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: [Disabled]; [Enabled].
  When set as [Enabled], system will wake on the hour/min/sec specified.
  Wake-up Hour
  Use this item to 0-23. For example, 3 for 3am and 15 for 3pm
  Wake-up Minute
  Use this item to 0-59
  Wake-up Second
  Use this item to 0-59
  When set **Wake-up System with Fixed Time** as [Enabled], user can make further settings in the following items:
  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 + Increase minutes.
  The optional settings: [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 to 60 minute(s)
  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.
  Please disable ERP before activating this function in S4-S5
  The optional settings: [Disabled]; [Enabled].
  PCIE Wake-up from S3-S5
  The optional settings: [Disabled]; [Enabled].
  USB S3/S4 Wake-up
  Use this item to enable or disable USB S3/S4 Wake-up support only disable ERP

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

USB S5 Power

Use this item to USB power after system shutdown support only disable ERP function.
The optional settings: [Disabled]; [Enabled]

► **Super I/O 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]; [Enabled].

► **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]**, the following sub-items shall appear:

Device Settings

Change Settings

Use this item to select an optimal setting for super IO device.
The optional settings are: [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 sub-items:

Serial Port

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

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

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

Device Settings

Change Settings

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

The optional settings are: [IO=2F8h; IRQ=3]; [IO=3F8h; IRQ=3,4,5,7,10,11]; [IO=2E8h; 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]**, the following sub-items shall appear:

Device Settings

Change Settings

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

The optional settings are: [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]**, the following sub-items shall appear:

Device Settings

Change Settings
Use this item to select an optimal setting for super IO device.
The optional settings are: [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]**, the following sub-items shall appear:
Device Settings
Change Settings
Use this item to select an optimal setting for super IO device.
The optional settings are: [IO=3F0h; 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]**, the following sub-items shall appear:
Device Settings
Change Settings
Use this item to select an optimal setting for super IO device.
The optional settings are: [IO=2F0h; 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 select a value in the range of [10] to [255] seconds when '**WatchDog Reset Timer Unit**' set as [Sec]; or in the range of [1] to [255] minutes when '**WatchDog Reset Timer Unit**' set as [Min].

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 Pin 1&2 of for ATX Mode & Pin 2&3 of AT 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 COPEN 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**'.

► **SmartFAN Configuration**

Press [Enter] to make settings for SmartFan Configuration:

SmartFAN Configuration

CPUFAN1 Smart Mode

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

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

CPUFAN1 Full-Speed Temperature

Use this item to set CPUFAN1 full speed temperature. Fan will run at full speed when above this pre-set temperature.

CPUFAN1 Full-Speed Duty

Use this item to set CPUFAN1 full-speed duty. Fan will run at full speed when above this pre-set duty.

CPUFAN1 Idle-Speed Temperature

Use this item to set CPUFAN1 idle speed temperature. Fan will run at idle speed when below this pre-set temperature.

CPUFAN1 Idle-Speed Duty

Use this item to set CPUFAN1 idle speed duty. Fan will run at idle speed when below this pre-set duty

SYSFAN1 Smart Mode

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

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

SYSFAN1 Full-Speed Temperature

Use this item to set SYSFAN1 full speed temperature. Fan will run at full speed when above this pre-set temperature.

SYSFAN1 Full-Speed Duty

Use this item to set SYSFAN1 full-speed duty. Fan will run at full speed when above this pre-set duty.

SYSFAN1 Idle-Speed Temperature

Use this item to set SYSFAN1 idle speed temperature. Fan will run at idle speed when below this pre-set temperature.

SYSFAN1 Idle-Speed Duty

Use this item to set 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: [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: [VT100]; [VT100Plus]; [VT-UTF8]; [ANSI].
Emulation: 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 data bits is odd; 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.

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].

Legacy OS Redirection Resolution

On Legacy OS, the Number of Rows and Columns supported redirection.
The optional settings: [80x24]; [80x25].

Putty KeyPad

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

Redirection After BIOS POST

The optional settings are: [Always Enable]; [BootLoader].
Whet Bootloader is selected, then Lagacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console is enabled for legacy OS. Default setting for this option is set to Always Enable.

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

Console Redirection

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:

Out-of-Band Mgmt Port

The optional setting is: [COM1].

Terminal Type

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 EMS

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.*

- **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

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.

The optional settings: [Auto]; [Manual].

'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.

Select [Manual] you can set value for the following sub-item: '**Device Power-up Delay in Seconds'.**

Device Power-up Delay in Seconds

The delay range is 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

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

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

Ipv4 PXE Support

The optional settings are: [Disabled]; [Enabled].
Use this item to enable Ipv4 PXE Boot Support. When set as [Disabled], Ipv4 boot optional will not be created.

Ipv6 PXE Support

The optional settings are: [Disabled]; [Enabled].
Use this item to enable Ipv6 PXE Boot Support. When set as [Disabled], Ipv6 boot optional will not be created.

PXE Boot Wait Time

Use this item to set wait time to press [ESC] key to abort the PXE boot.

Media Detect Count

Use this item to set number of times presence of media will be checked.
The optional settings range from [1] to [50].

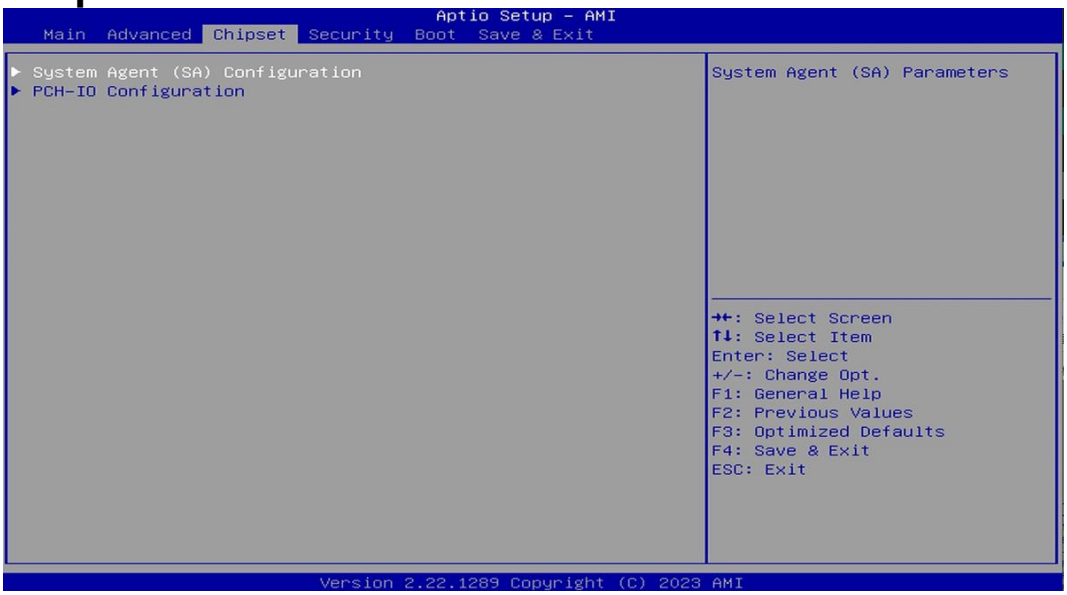
- **NVMe Configuration**

  Press [Enter] to view current NVMe Configuration.
  **Note: options only when NVME device is available.*

- **Intel(R) Ethernet Controller I226-V-XX:XX:XX:XX:XX:XX**
- **Intel(R) Ethernet Controller I226-V -XX:XX:XX:XX:XX:XX**

  These items show current network brief information.

3-8 Chipset Menu



- **System Agent (SA) Configuration**

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

  - **Maximum Memory Frequency**

  Use this item to Maximum Memory Frequency selections in Mhz

  The optional settings are: [Auto]; [3200]; [3467]; [3600]; [3733]; [4000]; [4200]; [4267]; [4400]; [4600]; [4800]; [5000]; [5200]; [5400]; [5600]; [5800]; [6000]; [6200]; [6400].

  Memory Frequency

  Total Memory

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

Active LVDS/eDP

Use this item to select the active configuration
The optional settings are: [Disabled]; [Enabled]

Panel Type

The optional settings: [800x480 1ch 18-bit]; [800x600 1ch 18-bit]; [800x600 1ch 24-bit]; [1024x600 1ch 18-bit]; [1024x768 1ch 18-bit]; [1024x768 1ch 24-bit]; [1280x768 1ch 24-bit]; [1280x800 1ch 24-bit]; [1366x768 1ch 18-bit]; [1366x768 1ch 24-bit]; [1440x900 2ch 18-bit]; [1440x900 2ch 24-bit]; [1280x1024 2ch 24-bit]; [1680x1050 2ch 24-bit]; [1920x1080 2ch 24-bit]; [eDP]

Backlight Control

The optional settings: [PWM Inverted]; [PWM Normsl]

► **PCH-IO Configuration**

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

SATA Controller(s)

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

SATA Mode Selection

This item determines how SATA controller(s) operate.
The optional settings: [AHCI].

M.2

Port

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

SATA1

Port

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

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.

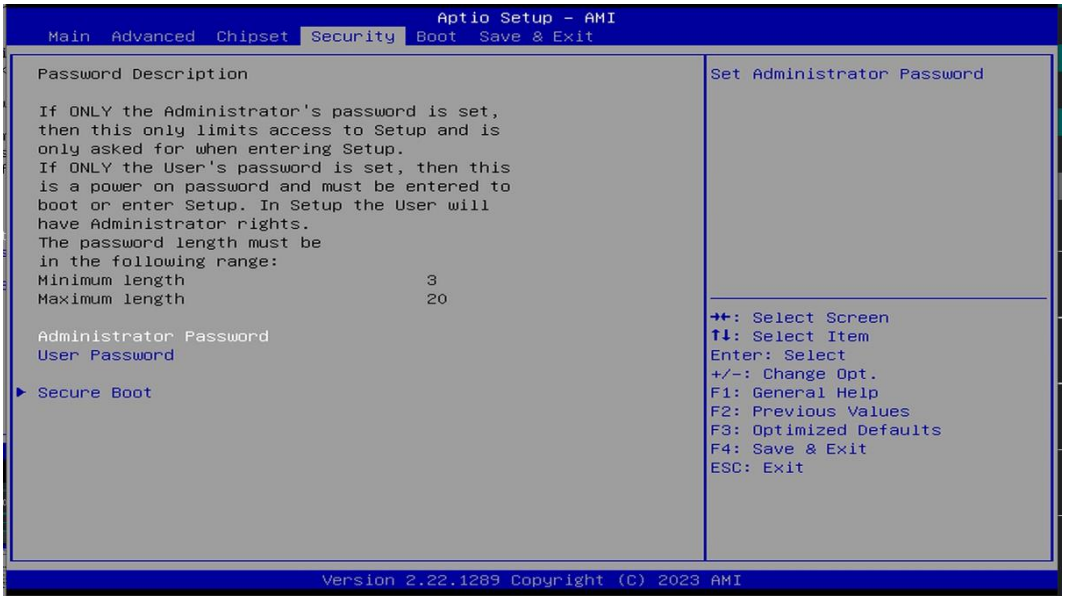
eMMC Controller(Option)

Use this item to enable or disable eMMC controller
The optional settings are: [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 (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 user 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

  The optional settings are: [Standard]; [Custom].

  Set UEFI Secure Boot Mode to Standard mode or Custom mode. This change is effective after save. After reset, this mode will return to Standard mode.

  **When set as [Custom], user can make further settings in 'Key Management'.*

  - **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 expert users to modify Secure Boot Policy variables without full

authentication. Press [Enter] to make settings for the following sub-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**

Use this item to allow efi image to run in secure boot mode. Enroll SHA256 Hash certificate of a PE image into authorized signature database (db)

The optional settings are: [<EFI>]; [<System Volume Information>]; [date.txt]; [Time.txt]; [Counter.txt]

- **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

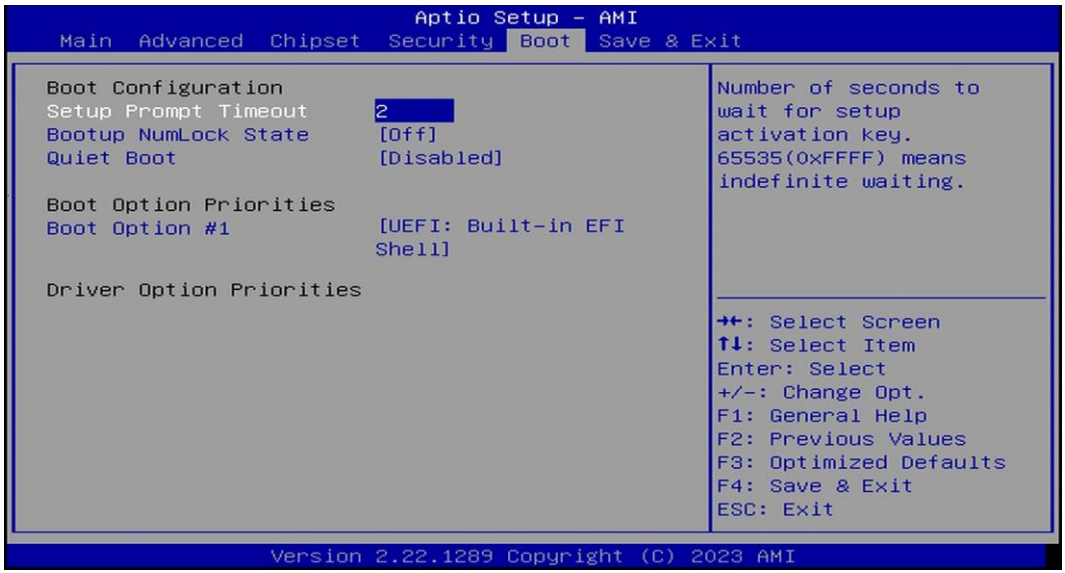
- **Platform Key (PK)/Key Exchange Keys/Authorized Signature/Forbidden Signature/ Authorized TimeStamps/OS Recovery Signatures**

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)
   c) EFI_ CERT_RSA2048 (bin)
   d) EFI_ CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/COFF Image (SHA256)

Key Source: Factory, External, Mixed.

3-10 Boot Menu



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

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

Boot Option Priorities

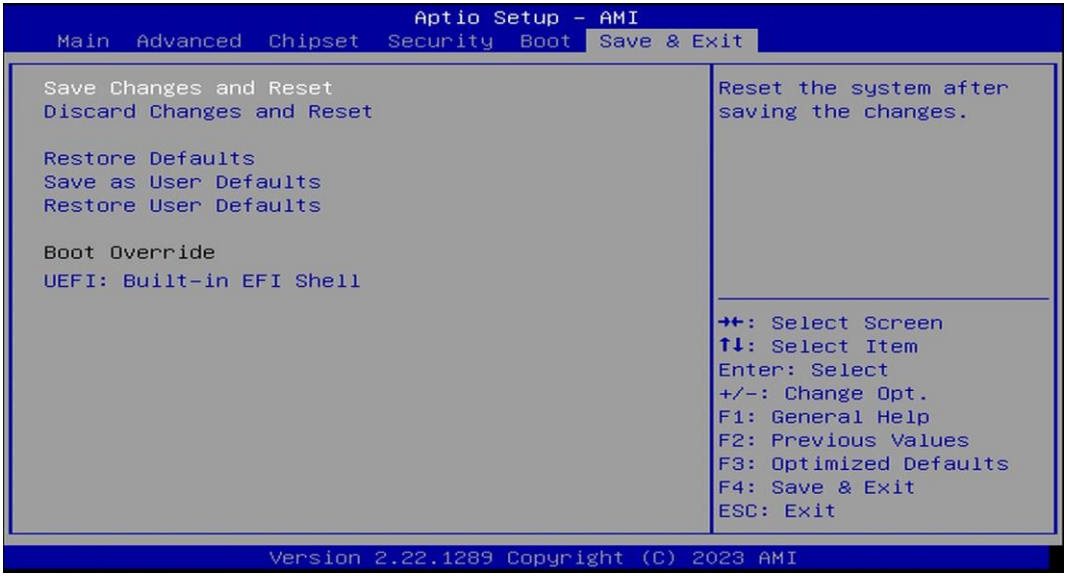
Boot Option #1

Use this item to Sets the system boot order.

The optional settings are: [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 defaults to all the setup options.

Boot Override

The available options here are dynamically updated and make system boot to any boot option selected.

UEFI: Built-in EFI Shell

Use this item to launch EFI shell application (shell.efi) from one of the available filesystem device.