MF20 Series

User's Manual

NO.: G03-MF20-F

Revision: 1.0

Release date: December 11, 2023

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.

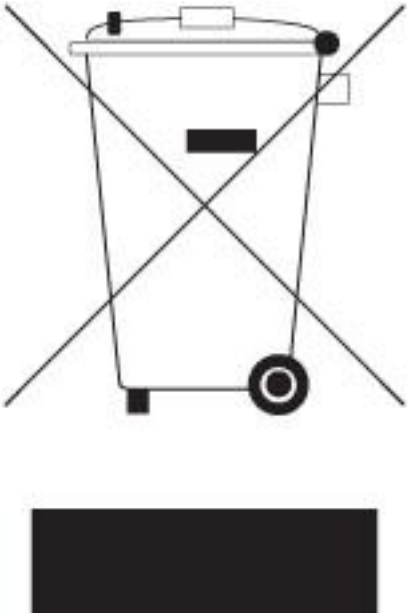


TABLE OF CONTENT

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

Manual Revision Information

Reversion	Revision History	Date
4.0	Fourth Edition	December 11, 2023

Item Checklist

☑ Motherboard
☑ Cable(s)

Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- Onboard Intel® Elkhart Lake series SoC processor, with low power consumption never denies high performance
- Support 1* DDR4 3200MHz SO-DIMM, maximum capacity up to 32GB
- Onboard optional 32GB / 64GB eMMC (by order)
- Onboard 2* i225V 2.5GbE LAN port
- Support 2* HDMI, 1* eDP (co-layout LVDS), 1* LVDS w/Inverter
- Onboard 1* M.2 M-key slot, type-2242/2280, support NVME
- Onboard 1* M.2 B-key slot,type-3042
- Onboard 1* M.2 E-key slot,type-2230
- Onboard TPM 2.0 (by order)
- Support 1* SATAIII device
- Support 3* USB 3.1(Gen.2) + 7* USB 2.0
- Support 6* COM Ports (**COM1** support RS232/RS422/RS485)
- Support CPU Smart FAN
- Compliance with ErP standard
- Support Watchdog function
- Solution for Panel PC / IOT Solution / Edge computing

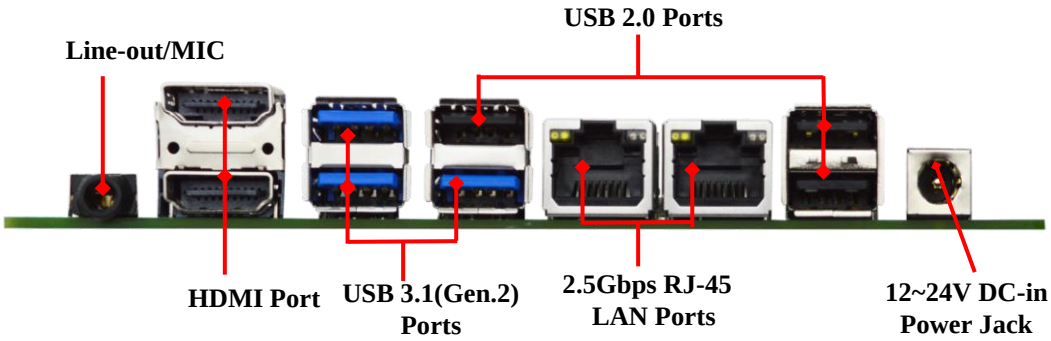
1-2 Specification

Spec	Description
Design	● 3.5”SBC; 8-Layers; PCB size: 14.8x 10.2 cm
Embedded CPU	● Integrated with Intel® Elkhart Lake series CPU (TDP 10W) * ***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* DDR4 SO-DIMM slot support 1* DDR4 3200MHz SDRAM up to 32GB W/IBECC (for x6000E series Processor) * ***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	● 1* M.2 E-key 2230 support USB 2.0/PCIe Gen.3 x1 interface(***M2E***) ● 1* M.2 B-key 3042 support USB 3.1/ USB 2.0 interface(***M2B***) ● 1* SIM card slot, co-function with M.2 B-key,3042 slot (***SIMCARD***)
Storage	● 1* M.2 M-key 2242/2280 PCIe Gen.3 x2/SATA interface support NVME (***M2M***) ● 1* SATAIII 6Gb/s port ● Onboard optional 32GB / 64GB eMMC (***by order***) ● ****Note:*** *Onboard eMMC capacity depends on the actual model purchased as technical specifications may update, without prior notice.*
LAN Chip	● Integrated with 2* Intel i225V 2.5Gigabit LAN chip, ● Support Fast Ethernet LAN function of providing 10/100/1000/2500Mbps Ethernet data transfer rate * ***Note: 2500Mbps*** *high-speed transmission rate is* ***only*** *supported over* ***CAT 5e UTP cable****.*
Audio Chip	● Realtek AL888S 2-CH HD audio chip
BIOS	● AMI Flash ROM
Rear I/O	● 1* 12~24V DC-in power Jack ● 2* HDMI ports ● 3* USB 3.1(Gen.2) ports ● 3* USB 2.0 ports

	● 2* 2.5Gbps RJ-45 LAN ports ● 1* Audio Line-out/MIC port
Internal I/O	● 1* 2-pin internal 12~24V DC-in power connector ● 1* SATA Power-out connector ● 1* CPU FAN connector ● 1* Front panel header ● 2* 9-pin USB 2.0 headers (Expansible to 2* USB 2.0 ports) ● 6* Serial port headers (COM1 supports RS232/422/485; COM2/3/4/5/6 supports RS232) ● 1* SIM card slot (co-function with M.2 B-key, 3042 slot) ● 1* Front panel audio header ● 1* GPIO header ● 1* eDP header (co-layout LVDS) ● 1* LVDS header ● 1* LVDS inverter header ● 1* SMBUS header
TPM 2.0	● Option (***by order***)

1-3 Layout Diagram

Rear IO Diagram:



Warning!!

The board has a 12~24V DC-in power connector **(DCIN1)** in I/O back panel and an internal 12~24V power connector **(DCIN).** User can only connect one type of compatible power supply to one of them to power the system.

Diagram-Front Side:

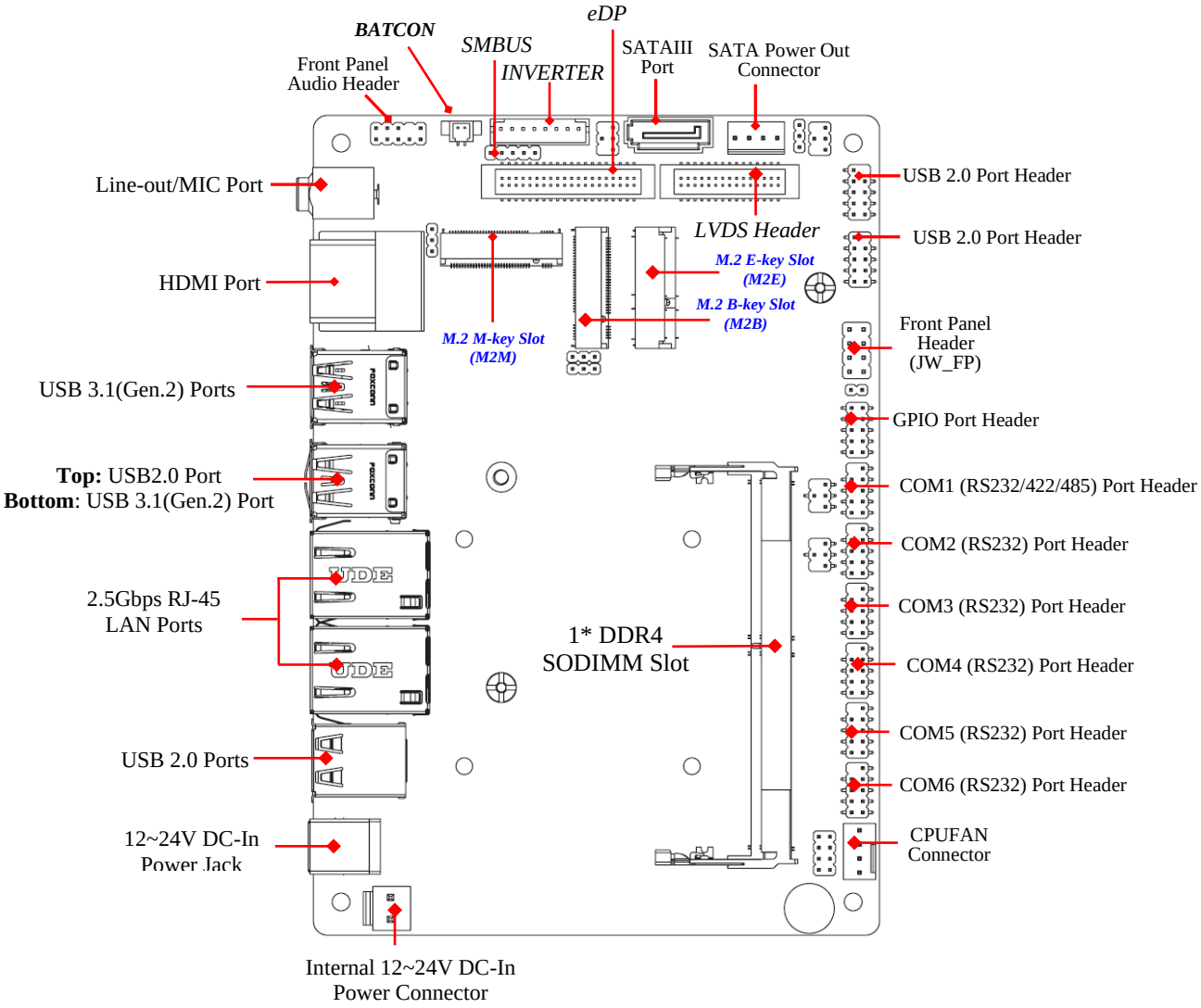
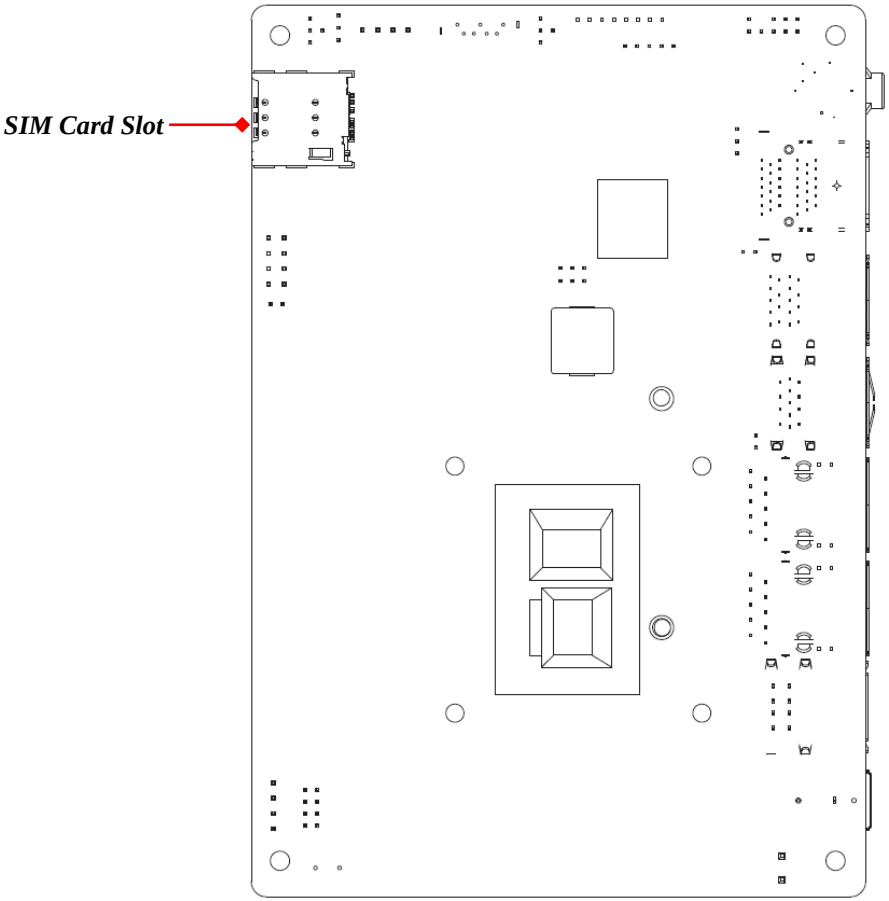
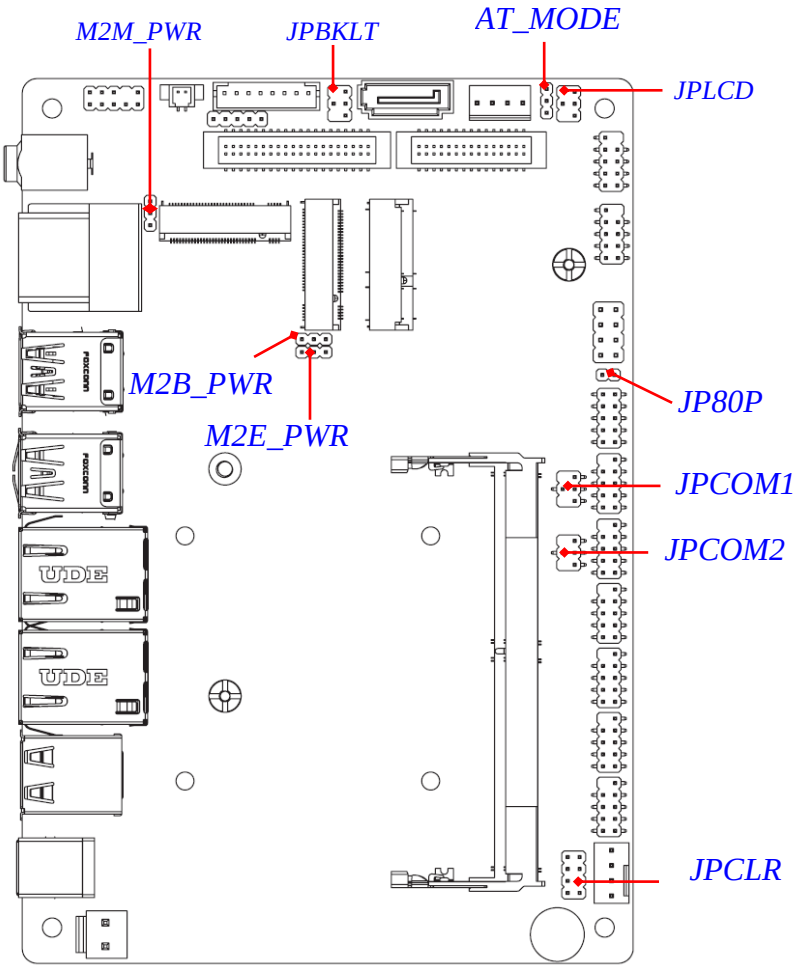


Diagram-Back Side:



***Note: SIM card slot (along with M.2 B-key)**

Jumper Positions:



Jumpers

Jumper	Name	Description	Pitch
JPCOM1/JPCOM2	COM1/COM2 Header Pin-9 Function Select	4-Pin Block	2.0mm
JP80P	Set GPIO_CON	2-Pin Block	2.0mm
JPLCD	LCD Panel VCC Power Select	4-Pin Block	2.0mm
JPBKLT	LCD Backlight Power VCC Select	4-Pin Block	2.0mm
M2B_PWR	M.2 B-key Power Select	3-Pin Block	2.0mm
M2E_PWR	M.2 E-key Power Select	3-Pin Block	2.0mm
M2M_PWR	M.2 M-key Power Select	3-Pin Block	2.0mm
JPCLR	PIN (1-2) = Clear RTC PIN (3-4) = Clear CMOS PIN (5-6) = ME Disable PIN (7-8) = CASE OPEN	8-Pin Block	2.0mm
AT_MODE	ATX Mode/AT Mode Select	3-Pin Block	2.0mm

Connectors

Connector	Name
DCIN1	12~24V DC–in Power Connector
USB1	USB 3.1(Gen.2) Port Connector X2
USB2	**Top:** USB 2.0 Port Connector **Bottom:** USB 3.1(Gen.2) Port Connector
USB3	USB 2.0 Port Connector X2
SIMCARD	SIM card slot
HDMI	HDMI Port Connector X2

LAN1/LAN2	2.5GbE RJ-45 LAN Port Connector X2
AUDIO	Audio Line Out/MIC Combo Connector
DCIN	Internal 2-Pin 12~24V DC-in Power Connector
SATA1	SATAIII Port Connector
SATAPWR	SATA HDD Power-out Connector
CPUFAN	CPU FAN Connector

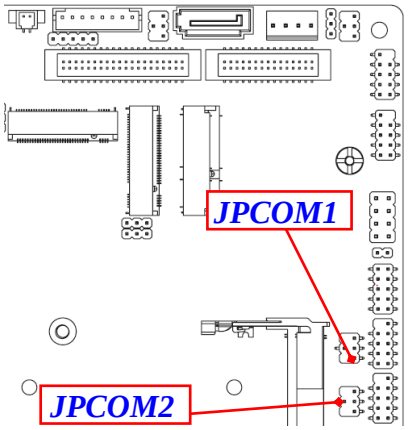
Headers

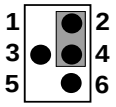
Header	Name	Description	Pitch
JW_FP	Front Panel Header (PWR LED/ HDD LED/Power Button /Reset)	8-pin Block	2.0mm
FP_USB1/ FP_USB2	USB 2.0 Port Header X2	9-pin Block	2.0mm
FP_AUDIO	Front Panel Audio Header	9-pin Block	2.0mm
GPIO_CON	GPIO Port Header	10-pin Block	2.0mm
COM1/2/3/4/5/6	Serial Port Header	9-pin Block	2.0mm
eDP	4-lane eDP Port Header	40-pin Block	1.25mm
LVDS	24-bit Dual Channel LVDS Port Header	30-pin Block	1.25mm
INVERTER	LVDS Inverter	8-pin Block	2.0mm
SMBUS	SM BUS Header	5-pin Block	2.0mm

Chapter 2
Hardware Installation

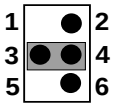
2-1 Jumper Settings

JPCOM1/JPCOM2 (4-pin): COM1/COM2 Header Pin-9 Function Select (2.0 pitch)

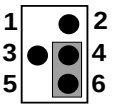




2-4 Closed: RI= RING

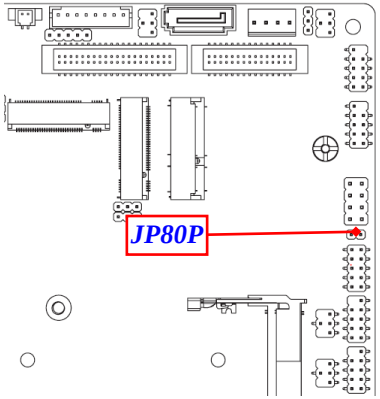


3-4 Closed: RI=+5V



4-6 Closed: RI=+12V

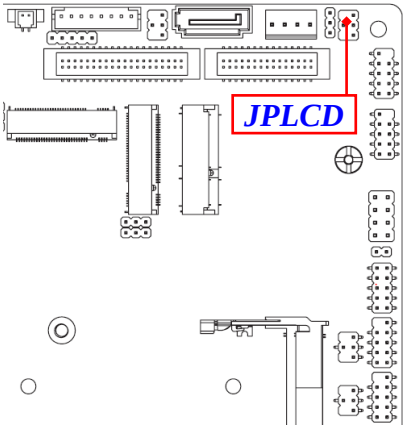
JP80P (2-pin): Set GPIO_CON (2.0 pitch)

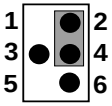


1-2 Open: GPIO_CON=80 Port

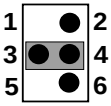
1-2 Closed: GPIO_CON=GPIO Port (Default)

JPLCD (4-pin): LCD Panel VCC Power Select (2.0 pitch)

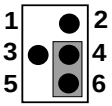




2-4 Closed:
VCC= +3.3V

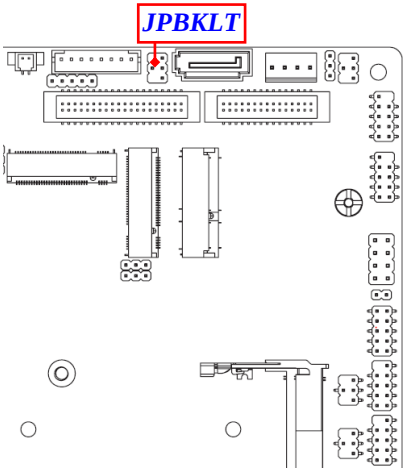


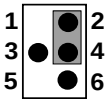
3-4 Closed:
VCC= +5V



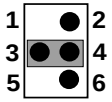
4-6 Closed:
VCC= +12V

JPBKLT (4-pin): LCD Backlight Power VCC Select (2.0 pitch)

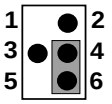




2-4 Closed:
Backlight Power
=VCC;



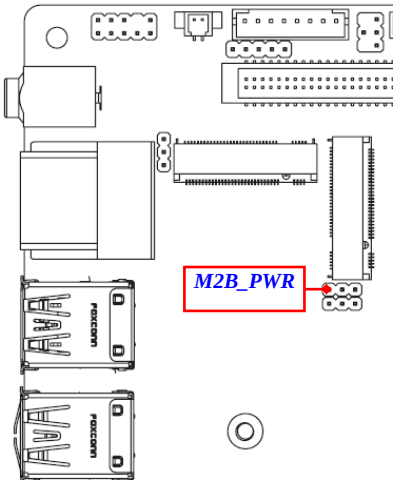
3-4 Closed:
Backlight Power
=12V;

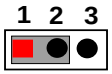


4-6 Closed:
Backlight Power
=Adapter VCC
（12~24V）

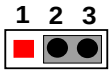
***Note:** In the case that **JPBKLT** is set as **Pin(4-6) closed**, backlight power VCC is the same as adapter voltage value (wide voltage range from 12V to 24V).*

M2B_PWR (3-pin): M.2 B-key Power Select (2.0 pitch)



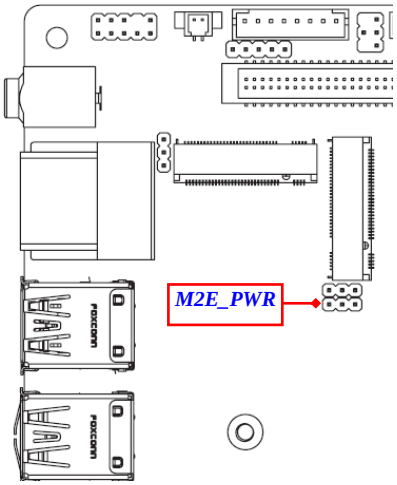


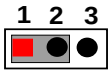
1-2 Closed:
VCC= VCC3



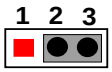
2-3 Closed:
VCC= 3VSB

M2E_PWR (3-pin): M.2 E-key Power Select (2.0 pitch)



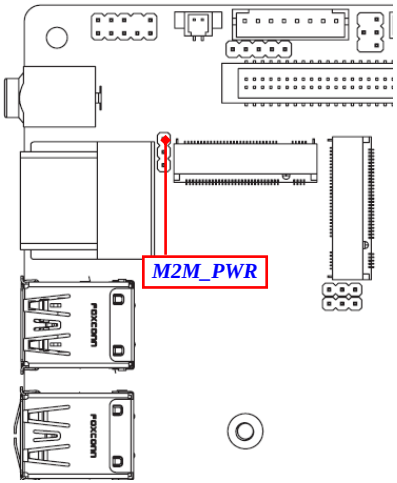


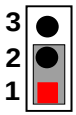
1-2 Closed:
VCC= VCC3



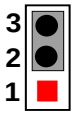
2-3 Closed:
VCC= 3VSB

M2M_PWR(3-pin): M.2 M-key Power Select (2.0 pitch)



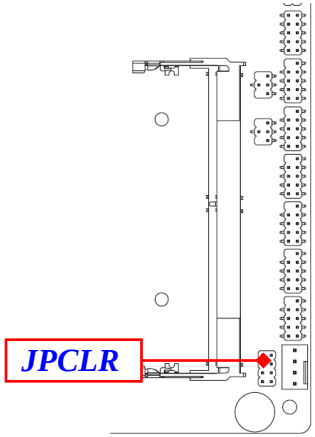


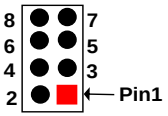
1-2 Closed:
VCC= VCC3



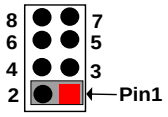
2-3 Closed:
VCC= 3VSB

PIN(1-2) of JPCLR (8-pin): Clear RTC (2.0 pitch)



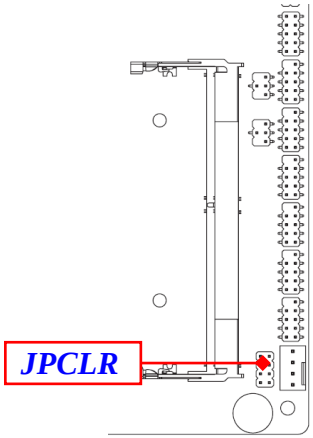


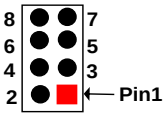
1-2 Open: Normal(Default)



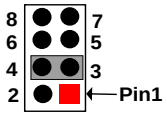
1-2 Closed: Clear RTC

PIN(3-4) of JPCLR (8-pin): Clear CMOS (2.0 pitch)





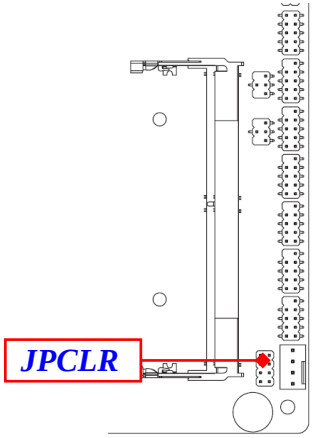
3-4 Open: Normal(Default)



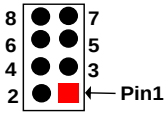
3-4 Closed: Clear CMOS

***Note:** Due to Intel MRC Code design factor, the first reboot after Clear CMOS will run a full **Memory Sizing**, and the boot time will take about **40** seconds (normal reboot time length, not function failure).*

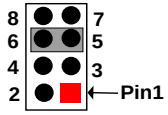
PIN(5-6) of JPCLR (8-pin): ME Disable (2.0 pitch)



PIN(5-6): ME Disable

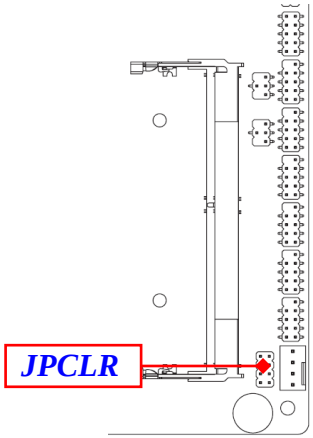


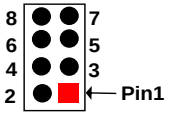
5-6 Open: Normal(Default)



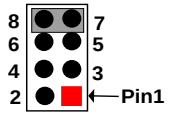
5-6 Closed: ME Disable

PIN(7-8) of JPCLR (8-pin): CASE OPEN (2.0 pitch)





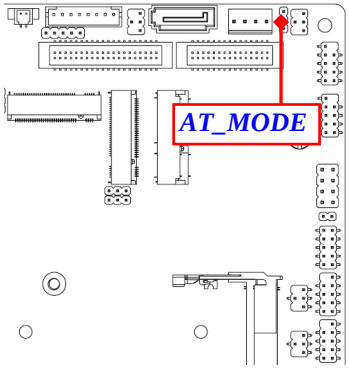
7-8 Open: Normal(Default)

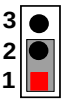


7-8 Closed: CASE OPEN

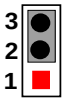
Pin (7-8) Closed: *When Case open function pin short to GND, the Case open function was detected. When used, needs to enter BIOS and enable '**Case Open Detect**' function. In this case if your case is removed, next time when you restart your computer, a message will be displayed on screen to inform you of this.*

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





1-2 Closed: ATX MODE



2-3 Closed: AT MODE

***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 and Headers

2-2-1 Connectors

(1) Rear I/O Connectors

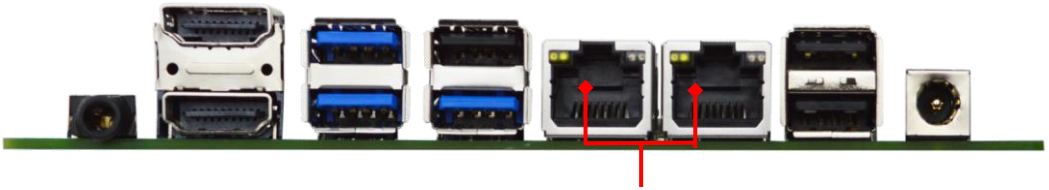
**** Refer to Page-3 Rear IO Diagram.***

Icon	*Name*	*Function*
	**12~24V DC-in Power Jack**	For user to connect compatible power adapter to provide power supply for the system.
	**USB 3.1(Gen.2) Port**	To connect USB keyboard, mouse or other devices compatible with USB 3.1(Gen.2) specification. Ports support up to 5Gbps data transfer rate.
	**USB 2.0 Port**	To connect USB keyboard, mouse or other devices compatible with USB specification.
	****SIM Card Slot***	For user to install compatible SIM card.
	**HDMI Port**	**HDMI port:** to connect display device that support HDMI specification.
	**2.5Gbps RJ-45 LAN Port**	This connector is standard RJ-45 LAN jack for Network connection ***(*Note: 2.5Gbps** is **only** supported with **CAT 5e UTP cable).***
	**Line-Out/ MIC Combo Connector**	This audio jack can function as audio Line-out & MIC-in combo connector with compatible cable connection

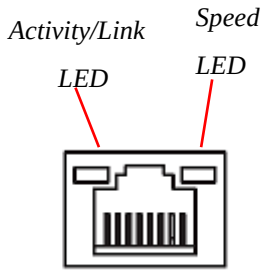
****Note:** SIM card is supported when **M2B (M.2 B-Key 3042)** slot is installed with 3G/4G/LTE card.*

(2) RJ-45 Ethernet Connector

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



For 2.5Gbps RJ-45 LAN port:



Activity/Link LED

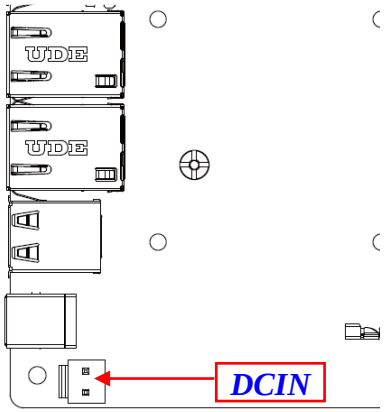
Status	Description
Off	No Link
Blinking	Data Activity
On	Link

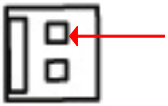
Speed LED

Status	Description
Off	10Mbps connection
Orange	1000Mbps connection
Green	2.5Gbps connection

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

(3) DCIN (2-pin) : Internal 12~24V DC-in Power Connector



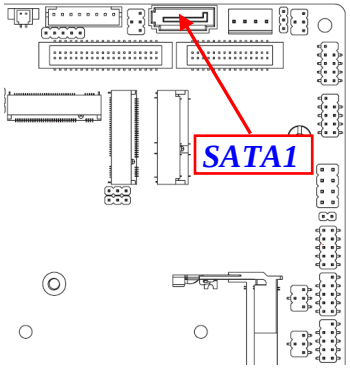


Pin No.	Definition
1	+12V~24VC DC-In
2	GND

Warning: *Find Pin-1 position before connecting power cable to this 2-pin power connector.* ***WRONG INSTALLATION DIRECTION WILL DAMAGE THE BOARD!!***

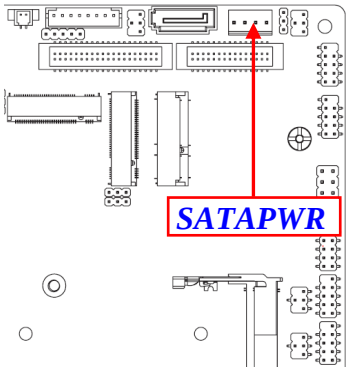
(4) SATA1 (7-pin): SATAIII Port connector

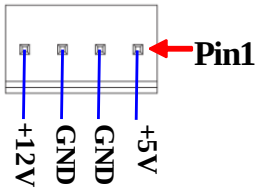
This is a high-speed SATAIII port that supports 6GB/s transfer rate.



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

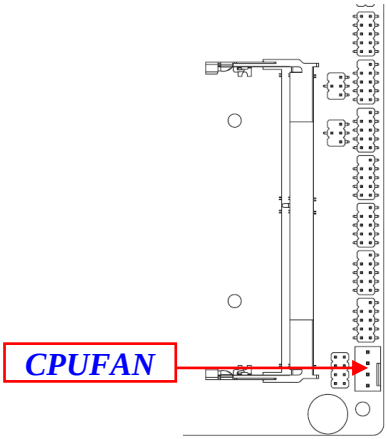
(5) SATAPWR (4-pin): SATA HDD Power-Out Connector

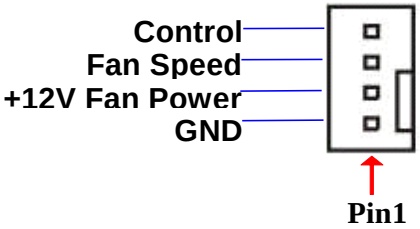




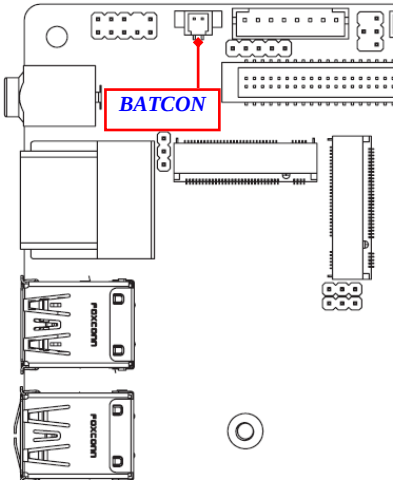
Warning: *Make sure that Pin-1 of compatible SATA Power out connector is inserted into corresponding Pin-1 of* ***SATAPWR*** *connector to avoid possible damage to the board and hard disk driver!*

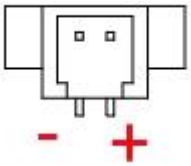
(6) CPUFAN (4-pin): CPU FAN Connector





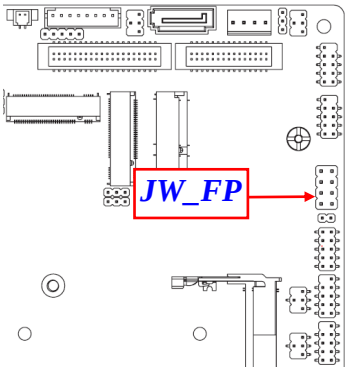
(7) BATCON (2-pin): Battery Connector

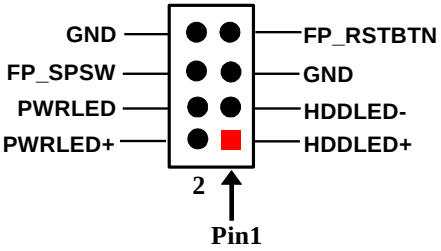




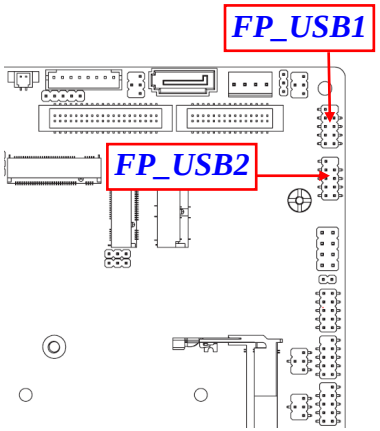
2-2-2 Headers

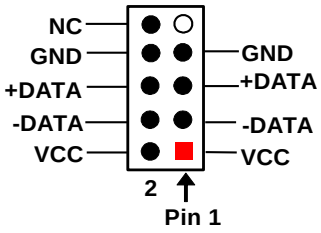
JW_FP (8-pin): Front Panel Header (2.54 pitch)





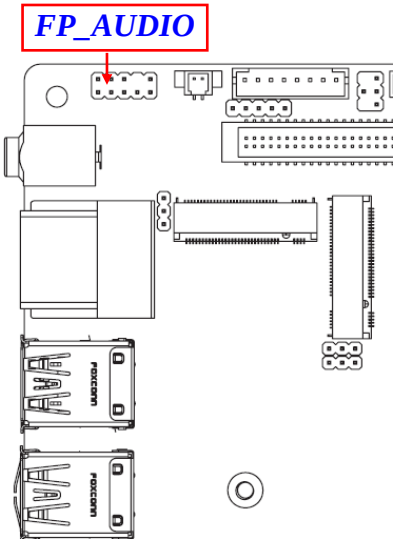
FP_USB1/FP_USB2 (9-pin): USB 2.0 Port Header (2.0 pitch)

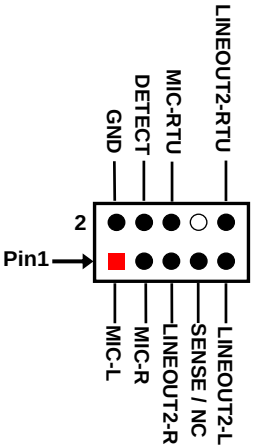




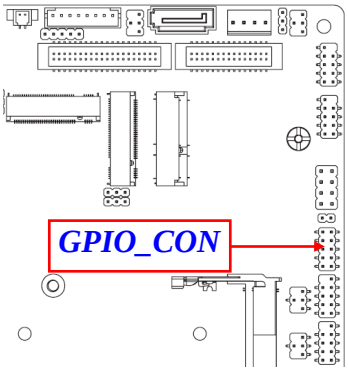
FP_AUDIO (9-pin): Front Panel Audio Header (2.0 pitch)

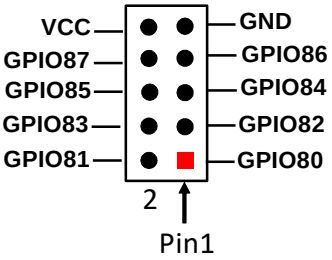
This header connects to Front Panel Line-out, MIC-In connector with cable.





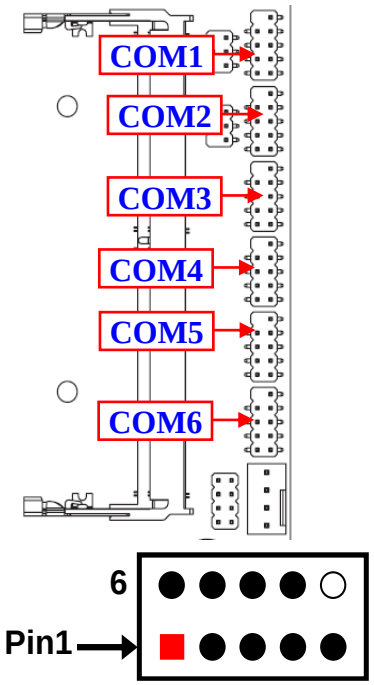
GPIO_CON (10-pin): GPIO Port Header (2.0 pitch)





COM1/COM2/COM3/COM4/COM5/COM6 (9-pin): Serial Port Headers (2.0 pitch)

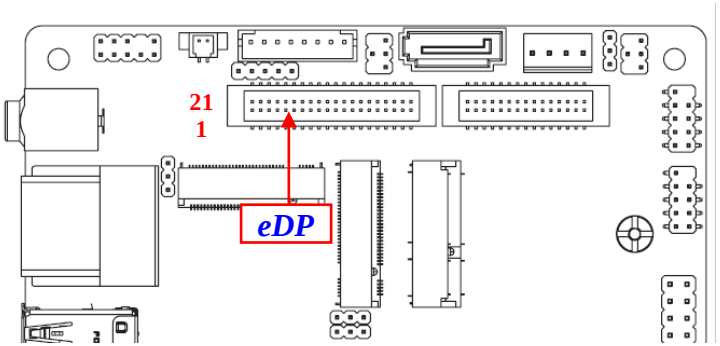
COM1: RS232/422/485 Serial Port Header.
COM2/COM3/COM4/COM5/COM6: RS232 Serial Port Header.

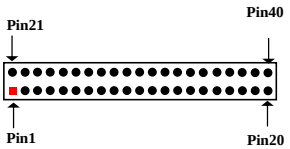


Pin NO.	RS232	*RS422 (COM1)	*RS485 (COM1)
Pin 1	DCD	TX-	DATA-
Pin 2	SIN	TX+	DATA+
Pin 3	SO-	RX+	NC
Pin 4	DTR	RX-	NC
Pin 5	GND	GND	GND
Pin 6	DSR-	NC	NC
Pin 7	RTS-	NC	NC
Pin 8	CTS-	NC	NC
Pin 9	RI	NC	NC

***Note: COM1 header can function as RS232/422/485 port header.** In normal settings COM1 functions as RS232 header. With compatible COM cable COM1 can function as RS422 or RS485 header. User also needs to go to BIOS to set '**Transmission Mode Select**' for COM1 at first, before using specialized cable to connect different pins of this port.*

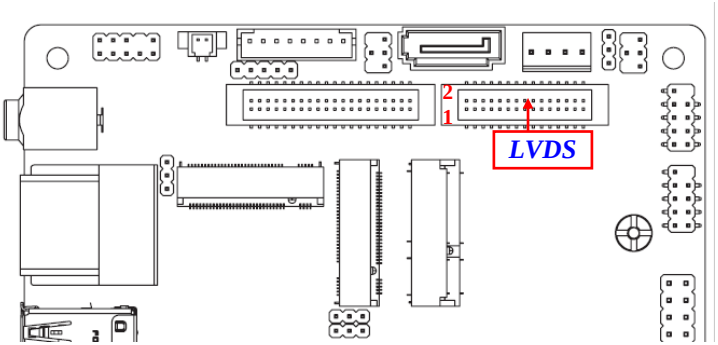
eDP (40-pin): 4-lane eDP Port Header (1.25 pitch)

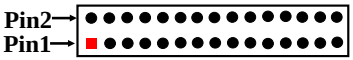




Pin Define	Pin No.	Pin No.	Pin Define
BKLT_PWR	Pin 40	Pin 20	LCD_VCC
BKLT_PWR	Pin 39	Pin 19	LCD_VCC
BKLT_PWR	Pin 38	Pin 18	LCD_VCC
BKLT_PWR	Pin 37	Pin 17	GND
BKLT_PWR	Pin 36	Pin 16	EDP_AUXN_C
EDP_SCL	Pin 35	Pin 15	EDP_AUXP_C
EDP_SDA	Pin 34	Pin 14	GND
PNL0_BKLTCTL	Pin 33	Pin 13	EDP_LANE+0
PNL0_BKLTEN	Pin 32	Pin 12	EDP_LANE-0
GND/EDP_DETECT	Pin 31	Pin 11	GND
GND	Pin 30	Pin 10	EDP_LANE+1
GND	Pin 29	Pin 9	EDP_LANE-1
GND	Pin 28	Pin 8	GND
EDP_LCD_HPD	Pin 27	Pin 7	EDP_LANE+2
GND	Pin 26	Pin 6	EDP_LANE-2
GND	Pin 25	Pin 5	GND
GND	Pin 24	Pin 4	EDP_LANE+3
GND	Pin 23	Pin 3	EDP_LANE-3
NC	Pin22	Pin 2	GND
NC	Pin 21	Pin 1	NC

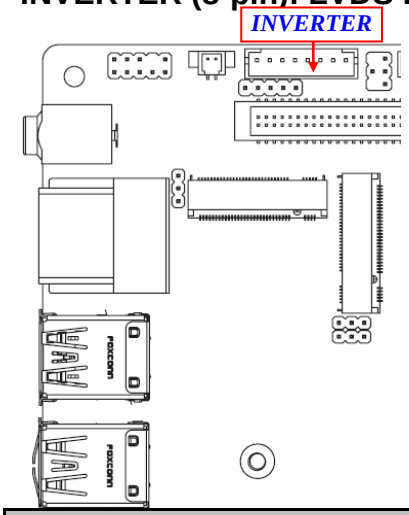
LVDS (30-pin): 24-bit Dual Channel LVDS Port Header (1.25 pitch)

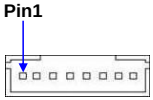




Pin Define	Pin NO.	Pin NO.	Pin Define
LCD_VCC	Pin 30	Pin 29	LCD_VCC
LCD_VCC	Pin 28	Pin 27	LCD_VCC
LVDSA_DATAN0	Pin 26	Pin 25	LVDSA_DATAP0
LVDSA_DATAN1	Pin 24	Pin 23	LVDSA_DATAP1
LVDSA_DATAN2	Pin 22	Pin 21	LVDSA_DATAP2
LVDS_CLKAN	Pin 20	Pin 19	LVDS_CLKAP
LVDSA_DATAN3	Pin 18	Pin 17	LVDSA_DATAP3
GND	Pin 16	Pin 15	GND
GND/LVDS_DETECT	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

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

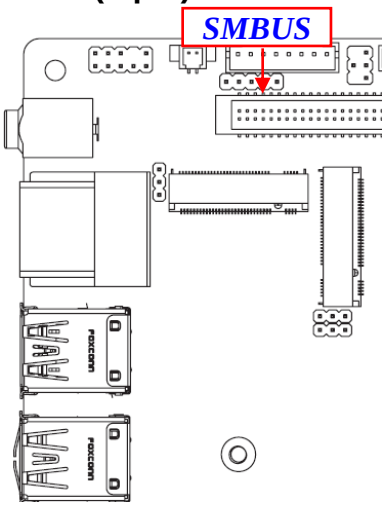


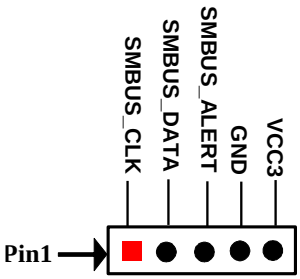


Pin No.	Definition
1	LCD_BKLT_EN
2	LCD_BKLT_PWM
3	Backlight VCC
4	Backlight VCC
5	GND
6	GND
7	BRTNSS_UP
8	BRTNSS_DOWN

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!!*

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





Chapter 3
Introducing BIOS

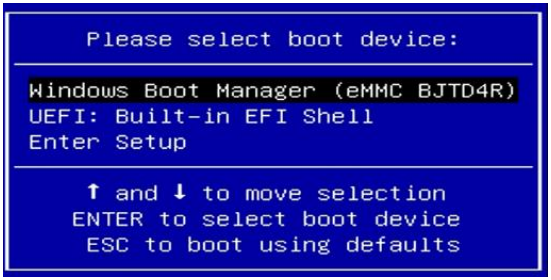
Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download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

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

3-1 Entering Setup

Power on the computer and by pressing **<Del>** immediately allows you to enter Setup.

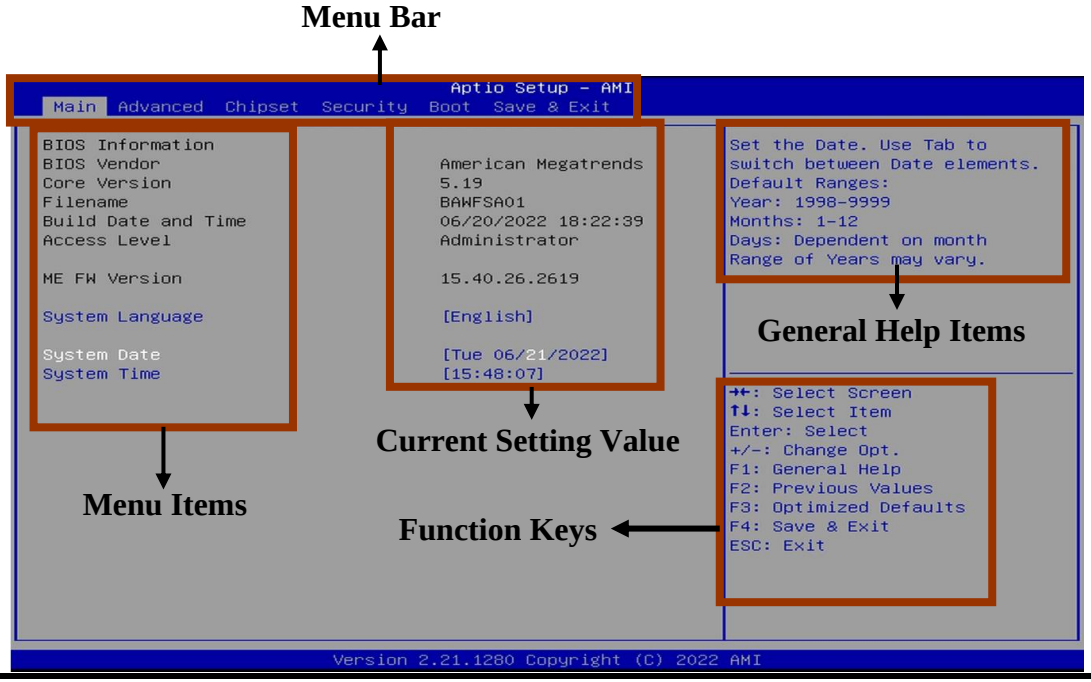
If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to Press **<Del>** to enter Setup; press < **F7**> to enter pop-up Boot menu.



BIOS Boot Menu Screen (boot device options please refer to actual configuration)

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 values.
- **[F3]**: Optimized defaults.
- **[F4]**: Save & Exit.
- Press **<Esc>** to exit from BIOS Setup.

3-4 Getting Help

Main Menu

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

Status Page Setup Menu/Option Page Setup Menu

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

3-5 Menu Bars

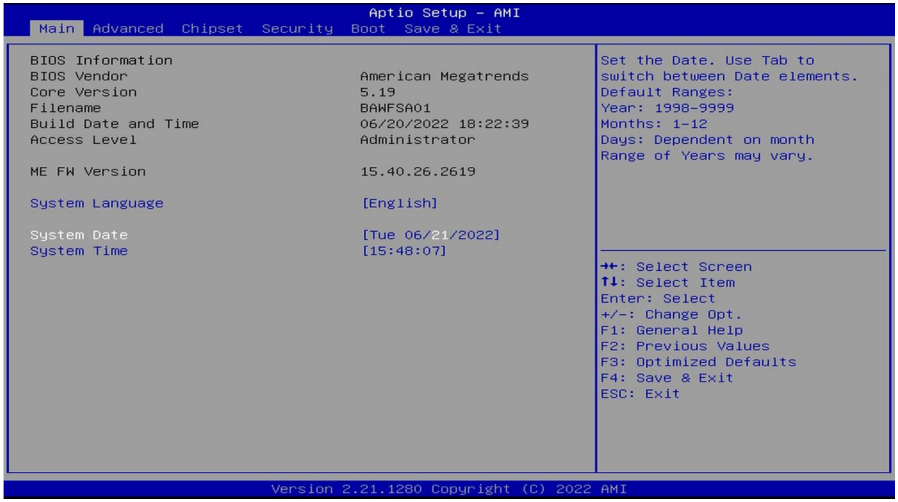
There are six menu bars on top of BIOS screen:

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

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

3-6 Main Menu

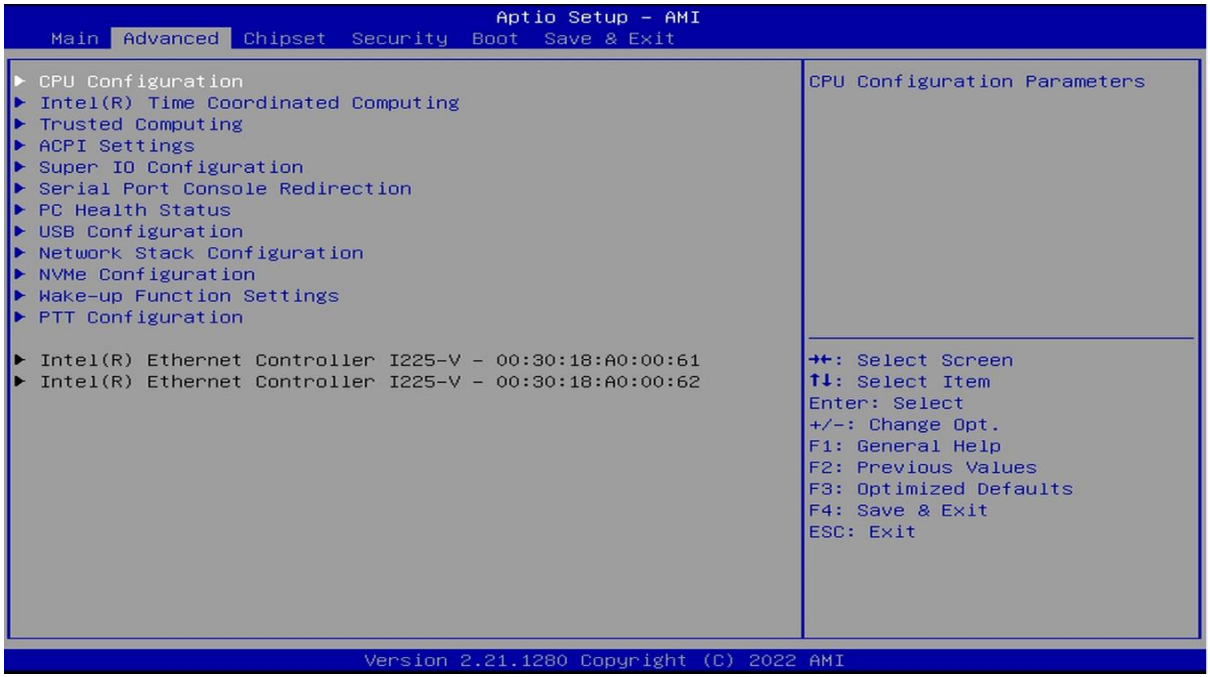
Main menu screen includes some basic system information. Highlight the item and then use the **<+>** or **<->** and numerical keyboard keys to select the value you want in each item.



System Language
Choose the system default language.

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



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

Boot Performance Mode
Use this item to select the performance state that the BIOS will set starting from reset vector.
The optional settings: [Max Battery]; [Max Non-Turbo Performance]; [Turbo Performance]
Intel(R) SpeedStep(tm)
This item allows more than two frequency ranges to be supported.
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following sub-items shall appear:
Turbo Mode
Use this item to enable or disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enable.
The optional settings: [Disabled]; [Enabled].
C states
Use this item to enable or disable CPU Power Management. When set as [Enabled], it allows CPU to go to C states when it's not 100% utilized.
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following sub-items shall appear:
Enhanced C-states
Use this item to enable or disable C1E. When set as [Enable], CPU will switch to minimum speed when all cores enter C-State.
The optional settings: [Disabled]; [Enabled].
Package C State Limit
Use this item to set maximum package C State limit. When set as [CPU default], it leaves to Factory default value. When set as [Auto], it initializes to deepest available package C State Limit.
The optional settings: [C0/C1]; [C2]; [C3]; [C6]; [C7]; [C7S]; [C8]; [C9]; [C10]; [CPU Default]; [Auto].
Power Limit1 Override
Use this item to enable/disable Power Limit1 override. If this option is disabled, BIOS will program the default values for Power Limit1 and Power Limit1 time

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

Power Limit1

Power Limit1 in Milli Watts. BIOS will round to the nearest 1/8W when programming. 0= no custom override. For 12.50W, enter 12500. Overclocking SKU:Value must be between Max and min Power Limits (specified by PACKAGE_POWER_SKU_MSR). Other SKUs: This value must be between Min Power Limit and TDP Limit. If value is 0, BIOS will program TDP value.

Power Limit1 Time Window

Power Limit1 Time Window value in seconds. The value (28 sec for Mobile and 8 sec for Desktop). Defines time window which TDP value should be maintained.
The optional settings: [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 Limit2 Override

Use this item to enable/disable power Limit2 override. If this option is disabled, BIOS will program the default values for power Limit2
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following sub-items shall appear:

Power Limit2

Power Limit2 value in Milli Watts. BIOS will round to the nearest 1/8W when programming. If the value is 0, BIOS will program this value as 1.25*TDP. For 12.50W, enter 12500. Processor applies control policies such that the package power does not exceed this limit.

- **Intel® Time Coordinated Computing**

Use this item to Intel(R) Time Coordinated Computing (Intel(R) TCC) options
Press [Enter] to choose Intel® TCC options and make settings for the following sub-items:

Intel® TCC mode

Use this item to enable or disable Intel® TCC mode. When set as [Enable], this will modify system settings to improve real-time performance and display the full

list of settings and their current state are displayed below when Intel® TCC mode is enabled.
The optional settings: [Disabled]; [Enabled].

Intel® TCC Authentication

Use this item to enable or disable Authentication of Intel® TCC configuration date.
The optional settings: [Disabled]; [Enabled].
When Intel® TCC mode set as **[Disabled]**, the following sub-items shall appear:

IO Fabric Low Latency

Use this item to enable or disable IO Fabric Low Latency. This will turn off some power management in the PCH IO fabrics. This option provides the most aggressive IO Fabric performance setting S3 state is NOT supported.
The optional settings: [Disabled]; [Enabled].

GT CLOS

Use this item to enable or disable Graphics Technology(GT) Class of Service. Enable will reduce Gfx LLC allocation to minimize impact of Gfx workload on LLC.
The optional settings: [Disabled]; [Enabled].

- **Trusted Computing**

Press [Enter] to view current status information, or make further settings in the following sub-items:
TPM 2.0 Device Found

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]**, user can make further settings in the following items:
Active PCR Banks
Available PCR Banks

SHA-1 PCR Bank

Use this item to enable or disable SHA-1 PCR Bank.

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

SHA256 PCR Bank

Use this item to enable or disable SHA256 PCR Bank.

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

SHA384 PCR Bank

Use this item to enable or disable SHA384 PCR Bank.

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

When PTT configuration > TPM Device Selection set as [PTT] , user can make

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: [None]; [TPM Clear].

- **ACPI Settings**

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

ACPI Settings

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

The optional settings: [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 1 Configuration

Serial Port

Use this item to enable or disable Serial Port (COM).

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

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

Device Settings

Change Settings

Use this item to select an optimal setting for Super IO Device.

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

Transmission Mode Select

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

Mode Speed Select

Use this item to select 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 2 Configuration

Serial Port

Use this item to enable or disable Serial Port (COM).

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

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

Device Settings

Change Settings

Use this item to select an optimal setting for Super IO Device.

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

► **Serial Port 3/ 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].

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

Device Settings

Change Settings
Use this item to select an optimal setting for Super IO Device.
The optional settings: [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/ 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].
When set as **[Enabled]**, user can make further settings in the following items:
Device Settings
Change Settings
Use this item to select an optimal setting for Super IO Device.
The optional settings: [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 select Energy-Related Products function. This item should be set as [Disabled] if you wish to have all active wake-up functions.
The optional settings: [Disabled]; [Enable].
Case Open Detect
Use this item to detect case has already open or not, show message in POST.
When set as [Enabled], system will detect if COPEN has been short or not (refer to ***JPCLR*** jumper setting for Case Open Detection; if **Pin 7&8** of jumper ***JPCLR*** are short, system will show Case Open Message during POST).
WatchDog Reset Timer
Use this item to enable or disable WDT reset function.
The optional settings: [Disabled]; [Enable].
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: [Sec.]; [Min.].

WatchDog Wake-up Timer

Use this item to enable or disable WDT wake-up function.

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

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

WatchDog Wake-up Timer Value

User can select a value in the range of [10] to [4095] seconds when 'WatchDog Reset Timer Unit' set as [Sec]; or in the range of [1] to [4095] minutes when 'WatchDog Reset Timer Unit' set as [Min].

WatchDog Wake-up Timer Unit

The optional settings: [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 AT_MODE jumper setting Pin 1&2 of for ATX Mode & Pin 2&3 of AT Mode Select).

- **Serial Port Console Redirection**

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 following items:

- **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.

COM1

Console Redirection Settings

Terminal Type

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

Emulation: **[ANSI]:** Extended ASCII char set; **[VT100]:** ASCII char set; **[VT100+]:** 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.

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 FunctionKey and KeyPad on Putty.
The optional settings: [VT100]; [LINUX]; [XTERMR6]; [SCO]; [ESCN]; [VT400].

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]**, 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

Terminal Type EMS
The optional settings: [VT100]; [VT100+]; [VT-UTF8]; [ANSI].
[VT-UTF8] is the preferred terminal type for out-of-band management. The next best choice is [VT100+] and them [VT100]. See above, in Console Redirection

Settings page, for more help with Terminal Type/Emulation.

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.*

- **PC Health Status**

Press [Enter] to view current hardware health status, make further settings in ‘**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 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 boot support will not be available.
  The optional settings: [Disabled]; [Enabled].
  PXE Boot Wait Time
  Use this item to set wait time to press [ESC] key to abort the PXE boot.
  Use either [+] / [-] or numeric keys to set the value.
  Media Detect Count
  Use this item to set number of times presence of media will be checked.
  Use either [+] / [-] or numeric keys to set the value.

- **NVMe Configuration**

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

- **Wake-up Function Settings**

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

Wake-up System With Fixed Time
Use this item to enable or disable System wake on alarm event.
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following items shall 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.
When **Wake-up System With Fixed Time** set as **[Disabled]**, the following items shall appear:
Wake-up System with Dynamic Time
Use this item to enable or disable System wake on alarm event.
System will wake on the current time + Increase minute(s).
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following items shall appear:
Wake-up Time Increase
Use this item to select 1-60 minute(s).
USB Power Gating S4-S5
Use this item to USB Wake-up is affected by ERP function in S4
The optional settings: [Disabled]; [Enabled].
**Note: This function is supported when 'ERP Support' is set as [Disabled].*
PCIe Wake-up from S3-S5
The optional settings: [Disabled]; [Enabled].

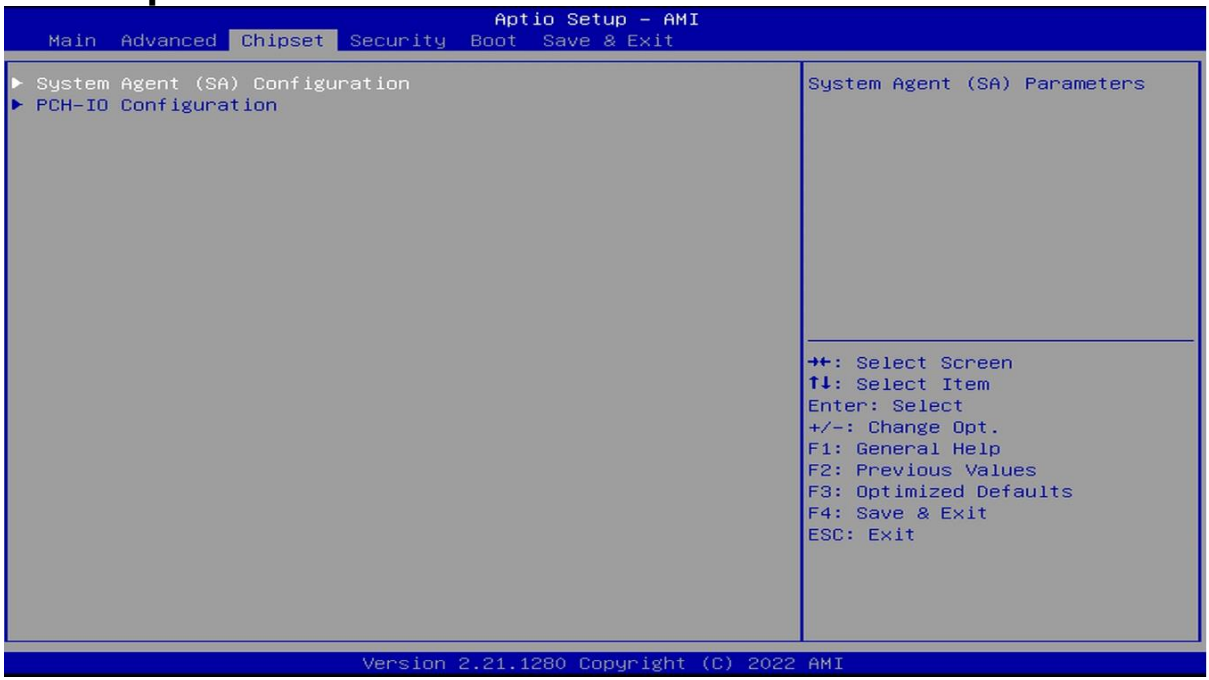
- **PTT Configuration**

Press [Enter] to make settings for the following sub-items:
TPM Device Selection
Use this item to selects TPM device.
The optional settings: [dTPM]; [PTT].
[PTT]: Enables PTT in SkuMgr;

[dTPM]: Disable PTT in SkuMgr.
Warning! PTT/dTPM will be disabled and all data saved on it will be lost.

- **Intel(R) Ethernet Controller I225-V-XX:XX:XX:XX:XX:XX**
- **Intel(R) Ethernet Controller I225-V-XX:XX:XX:XX:XX:XX**

3-8 Chipset Menu



- **System Agent (SA) Configuration**

Press [Enter] to make settings for the following sub-items:
System Agent (SA) Configuration
GTT Size
Use this item to select the GTT Size.

The optional settings: [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]; [4M]; [8M]; [12M]; [16M]; [20M]; [24M]; [28M]; [32M]; [36M]; [40M]; [44M]; [48M]; [52M]; [56M]; [60M]; [64M]; [96M]; [128M]; [160M]

DVMT Total Gfx Mem

Use this item to select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.

The optional settings: [128M]; [256M]; [MAX].

Active LFP

Use this item to select the active LFP configuration.

The optional settings: [LVDS]; [eDP].

*****NOTE***: When set as [LVDS], user can make further settings in following 'LVDS Panel Type'

LVDS 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 18-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].

Backlight Control

Use this item to control Back light setting.

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

Total Memory

► **PCH-IO Configuration**

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

PCH-IO Configuration

▸ **PCI Express Configuration**

Peer Memory Write Enable

Use this item to enable or disable peer memory write.
The optional settings: [Disabled]; [Enabled].

- **SATA Configuration**

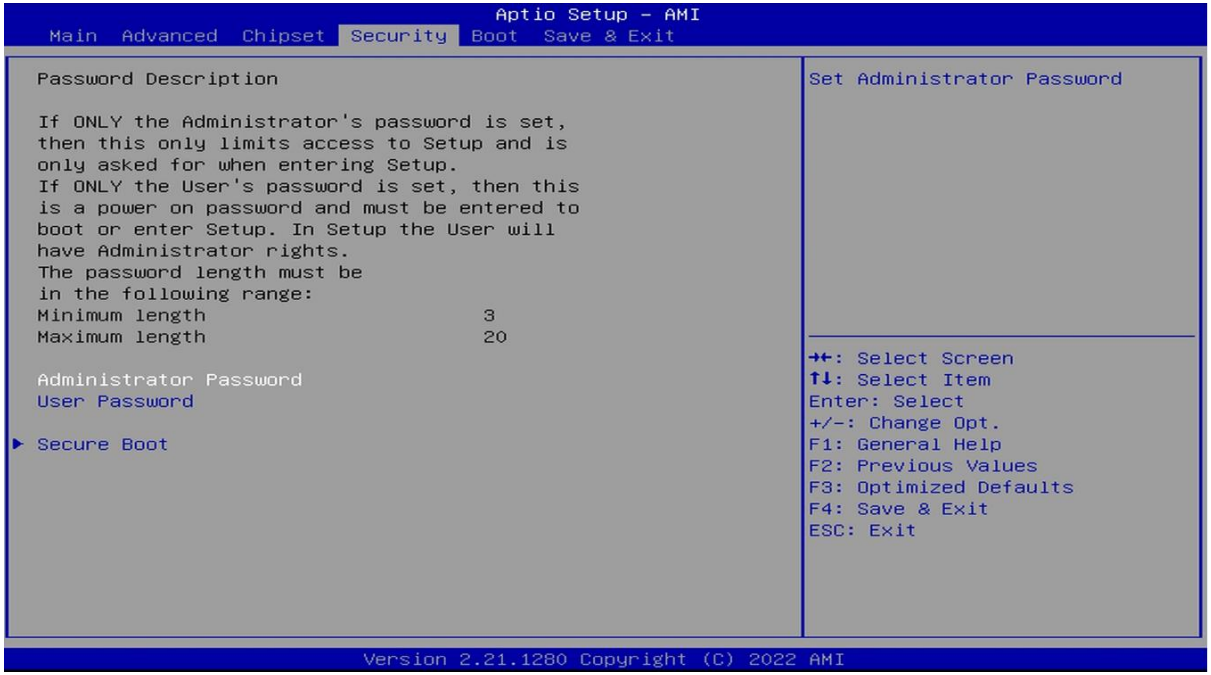
SATA Controller
Use this item to enable or disable SATA device.
The optional settings: [Disabled]; [Enabled].
When set as **[Enabled]**, the following sub-items shall appear:
SATA Mode Selection
This item determines how SATA controller(s) operate.
The optional settings: [AHCI].
SATA Port
SATA Port
The optional settings: [Disabled]; [Enabled].
Hot Plug
Use this item to designates this port as Hot Pluggable
The optional settings: [Disabled]; [Enabled]
M.2
M.2
The optional settings: [Disabled]; [Enabled].

HD-Audio Support
The optional settings: [Disabled]; [Enabled].
SCS eMMC Support
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].
PinCntrl Driver GPIO Scheme
Use this item to enable/disable PinCntrl Driver GPIO Scheme

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

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

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.

- **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 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.

  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, 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, 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.

- **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.

- **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).

Device Guard Ready

- **Remove 'UEFI CA' from DB**
- **Restore DB defaults**

Use this item to restore DB variable to factory defaults.

Secure Boot variable/Size/Keys/Key Source

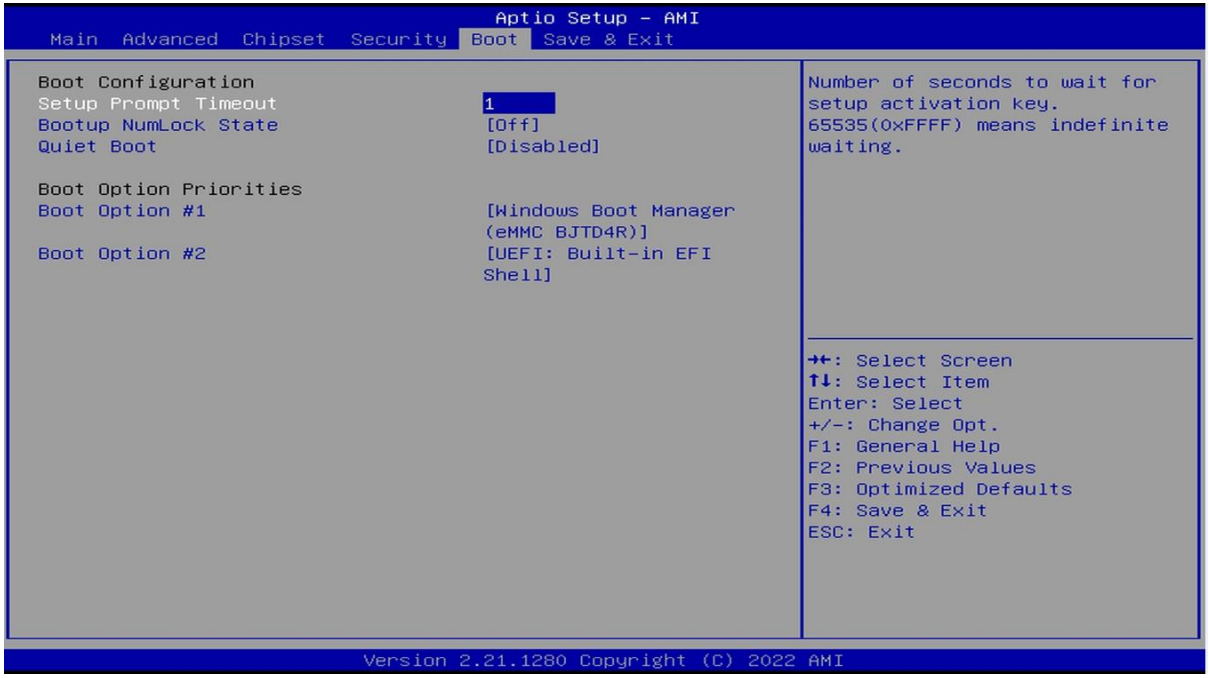
- **Platform Key(PK)/Key Exchange Keys/Authorized Signatures/Forbidden Signatures/ Authorized TimeStamps/OsRecovery Signatures**

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, External, Mixed.

3-10 Boot Menu



Boot Configuration

Setup Prompt Timeout

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

Bootup NumLock State

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

Quiet Boot

Use this item to enables or disable Quiet Boot option.
The optional settings: [Disabled]; [Enabled].

Boot Option Priorities

Use this item to set the system boot order.

Boot Option #1

The optional settings: [UEFI: Built-in EFI Shell]; [Disabled].

Boot Option #2

The optional settings: [Windows Boot Manager (eMMC BJTD4R)]; [UEFI: Built-in EFI Shell]: [Disabled]

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
Windows Boot Manager (eMMC BJTD4R)
UEFI: Built-in EFI Shell