NF792R Series

User's Manual

NO. G03-NF792R-F

Revision: 1.0

Release date: June 6, 2022

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
1.0	First Edition	June 6, 2022

Item Checklist

- ☑ Motherboard
- ☑ Cable(s)

Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- Intel® Braswell series SoC Processor, with low power consumption never denies high performance
- Support DDR3L-1600, 2 * SO-DIMM slot, up to 8GB memory
- Integrated with HD Audio Codec
- Integrated with 2 * Realtek RTL8119I Giga LAN
- Support 1 * SATA III (6Gb/s) & 1 * M.2 (M key 2242/2260)
- Support HDMI/VGA/LVDS, triple displays
- 2 * External COM and 2 * internal COM

  COM1 supports RS232/422/485

  COM1/COM4 supports function select
- 3 * External USB 3.0 & 1 * External USB 2.0 & 4 * Internal USB 2.0
- 1 * Parallel port
- 1 * Mini-PCIe slot
- 1 * PCI slot
- 1 * SIM Card Holder
- ATX power
- Support Watchdog function
- Support TPM function (optional)

1-2 Specification

Spec	Description
CPU	● Intel® Braswell ***SoC*** CPU **CPU model varies from different IPC options. Please consult your dealer for more information of onboard CPU.*
Memory	● 2* DDR3L (Dual channel) 1600MHz SO-DIMM slot up to 8GB
Expansion Slot	● 1* Full-size Mini PCIe slot***(MPE***) ● 1* SIM Card Holder ● 1* PCIx1 Slot
Storage	● 1* SATA III 6G/s Connector ● 1* M.2 Socket 3 slot(Socket 3, M-key, support type 2242/2260 SATA SSD)
LAN Chip	● 2* Realtek RTL8119I PCI-E Gigabit LAN chips ● Support Fast Ethernet LAN function of providing 10/100/1000Mbps Ethernet data transfer rate
Audio Chip	● HD Audio Codec integrated ● Audio driver and utility included
BIOS	● AMI Flash ROM
Rear I/O	● 1* Parallel port ● 1* HDMI ● 1* VGA ● 2* RJ-45, 10/100/1000 Mbps ● 3* USB 3.0, 1* USB2.0 port ● 2* COM port (COM1/2, COM1 support RS232/RS422/RS485) ● 1* MIC, Line-in, Line-out port
Internal I/O	● 1 *24-pin ATX power connector ● 1* CPU fan connector & 1* System fan connector ● 1* Front panel header ● 1* Speaker & Power LED header ● 2* LAN activity LED header ● 2* RS232 Serial port header (COM3/4) ● 1* Front panel audio header

	● 2* 9-pin USB 2.0 header (Expansible to 4* USB 2.0 ports) ● 1* 8 bit GPIO_CON header ● 1* PS/2 keyboard & mouse header ● 1* SMBUS header ● 1* 24-bit dual channel LVDS header or 2-Lane eDP (one of them) ● 1* LVDS/EDP inverter ● 1* Chassis Intrusion ● 1* AT_ATX Mode ● 1* TPM (onboard option)

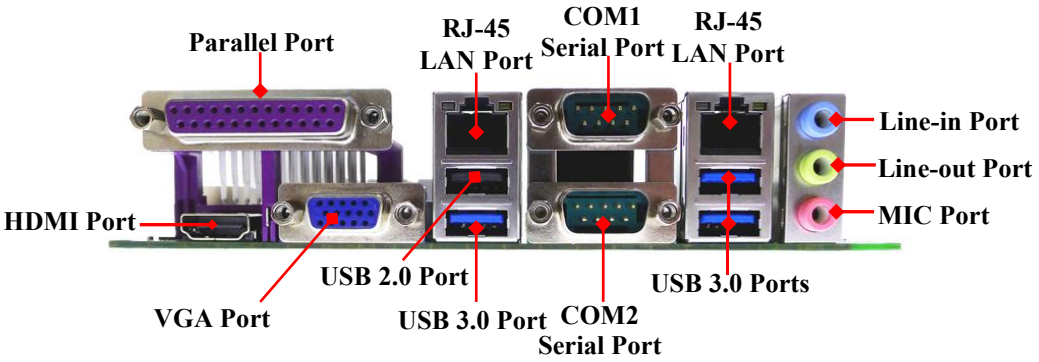
Note:

1. *The module for **SODIMM1** and **SODIMM2** should be **DDR3L 1.35V** SODIMM and **not exceeding 8GB total capacity**.*

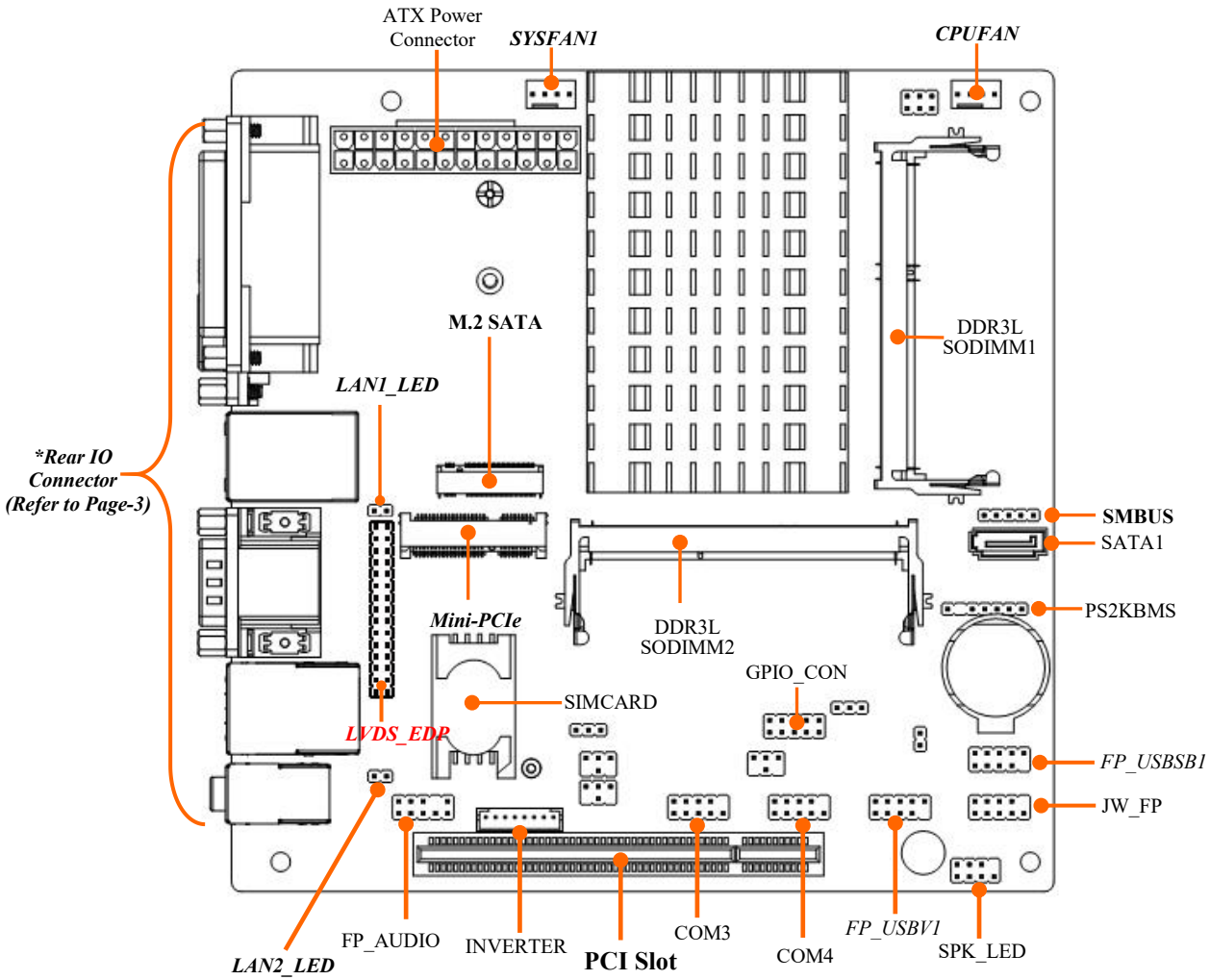
***2**. The SODIMM installed should be of or above the memory clock the model supported, otherwise the board will not start.*

1-3 Layout Diagram

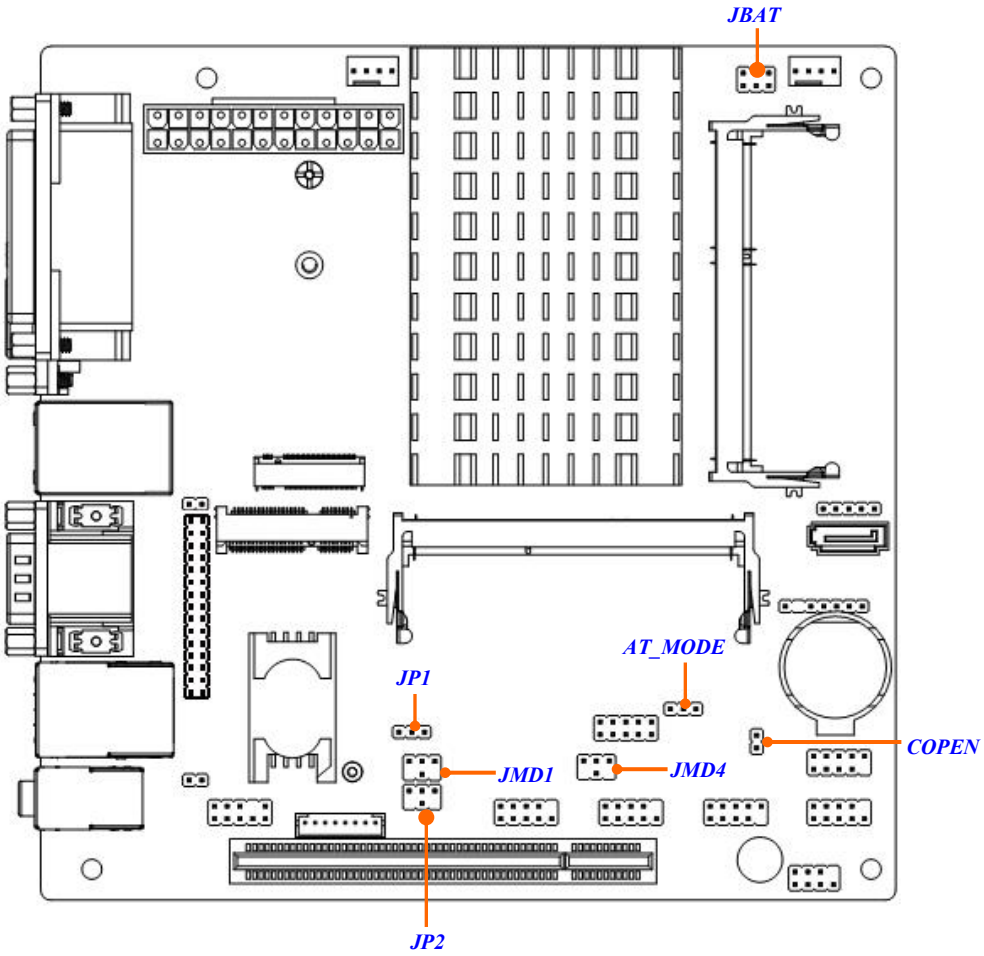
Rear IO Panel Diagram:



Motherboard Internal Diagram:



Jumper Positions:



Jumper

Jumper	Name	Description
JMD1	COM1 Port Pin9 Function Select	4-pin Block
JMD4	COM4 Header Pin9 Function Select	4-pin Block
JP1	LVDS/eDP INVERTER Backlight 5V/12V Select	3-pin Block
JP2	LVDS/eDP LCD Panel VCC 3.3V/5V/12V Select	4-pin Block
AT_MODE	ATX Mode / AT Mode Select	3-Pin Block
COPEN	Case Open Message Display Function	2-Pin Block
JBAT	**Pin 1&2**：Clear CMOS RAM **Pin 3&4**：RTC Reset **Pin 5&6**：Flash Override	6-pin Block

Connectors

Connector	Name
LPT	Parallel Port Connector
HDMI	High-Definition Multimedia Interface Connector
VGA1	CRT VGA Port Connector
UL1	***Top:*** *RJ-45 LAN Port Connector* ***Middle:*** *USB 2.0 Port Connector* ***Bottom:*** *USB 3.0 Port Connector*
UL2	***Top:*** *RJ-45 LAN Port Connector* ***Middle:*** *USB 3.0 Port Connector* ***Bottom:*** *USB 3.0 Port Connector*
COM1	RS232/422/485 Serial Port Connector
COM2	RS232 Serial Port Connector
AUDIO	***Top:*** *Audio Line-in Port Connector* ***Middle:*** *Audio Line-out Port Connector*

	***Bottom:** Audio MIC Connector*
ATXPWR	ATX Power Connector
SATA1	SATAIII Port Connector
CPUFAN	CPU Fan Connector
SYSFAN1	System Fan Connector

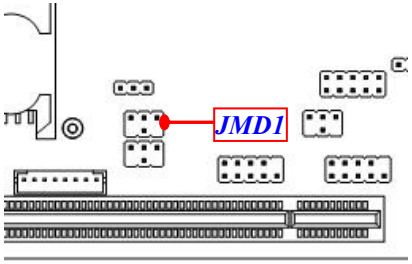
Headers

Header	Name	Description
JW_FP	Front Panel Header (PWR LED/ HDD LED/ Power Button /Reset)	9-pin Block
SPK-LED	Power LED & Speaker Header	7-pin Block
LAN1_LED/ LAN2_LED	LAN Activity LED Header	2-pin Block
COM3/ COM4	RS232 Serial Port Header	9-pin Block
FP_AUDIO	Front Panel Audio Header	9-pin Block
F_USBV1/ F_USBSB1	USB 2.0 Header	9-pin Block
GPIO_CON	GPIO Header	10-pin Block
PS2KBMS	PS/2 Keyboard & Mouse Header	6-pin Block
SMBUS	SMBUS Header	5-pin Block
LVDS_EDP	LVDS/EDP Combo Header	30-pin Block
INVERTER	LVDS/EDP INVERTER Header	8-pin Block

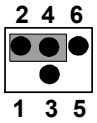
Chapter 2
Hardware Installation

2-1 Jumper Setting

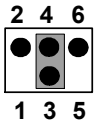
(1) JMD1 (4-pin): COM1 Port Pin9 Function Select



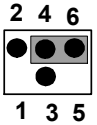
JMD1→COM1 Port Pin-9



2-4 Closed:
RING(Default);

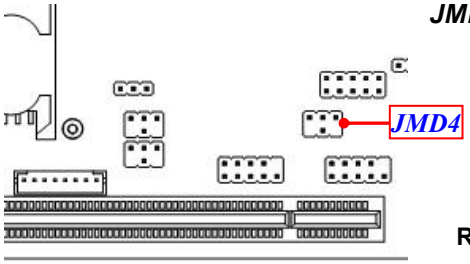


3-4 Closed:
5V;

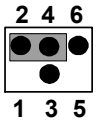


4-6 Closed:
12V.

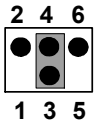
(2) JMD4 (4-pin): COM4 Header Pin9 Function Select



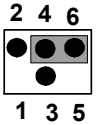
JMD4→COM4 Header Pin-9



2-4 Closed:
RING(Default);

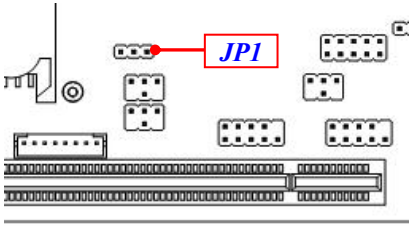


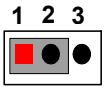
3-4 Closed:
5V;



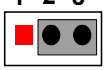
4-6 Closed:
12V.

(3) JP1 (3-pin):LVDS/eDP Inverter Backlight VCC 5V/12V Select



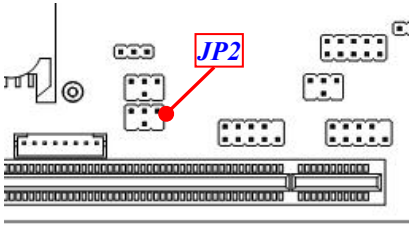


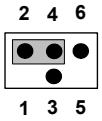
1-2 Closed:
5V (Default);



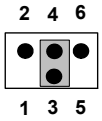
2-3 Closed:
12V.

(4) JP2 (4-pin): LVDS/eDP LCD Panel VCC 3.3V/5V/12V Select

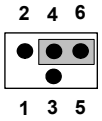




2-4 Closed:
VCC=3.3V;
(Default);

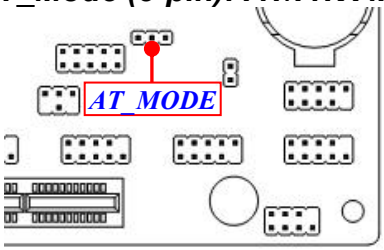


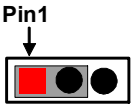
3-4 Closed:
VCC= 5V;



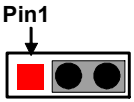
4-6 Closed:
VCC= 12V.

(5) AT_Mode (3-pin): AT/ATX Mode Function Select





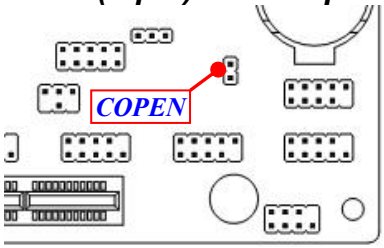
1-2 Closed:
ATX Mode
(Default);

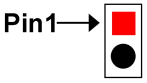


2-3 Closed:
AT Mode.

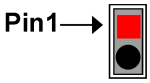
***ATX Mode Selected**: *Press power button to power on after power input ready;*
AT Mode Selected: *Directly power on as power input ready.*

(6) COPEN (2-pin): Case Open Message Display Function Select





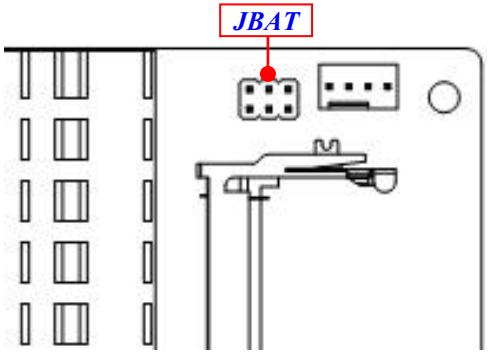
1-2 Open：
Normal (Default);



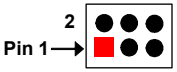
1-2 Short：
Case Open.

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

Pin 1&2 of JBAT (6-pin): Clear CMOS Setting



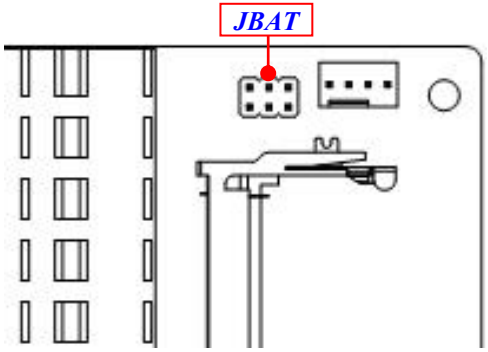
Pin 1&2 of JBAT→ Clear CMOS Setting



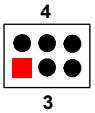
1-2 Open: Normal;

1-2 Closed: Clear CMOS.

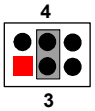
Pin 3&4 of JBAT (6-pin):RTC Reset



Pin 3&4 of JBAT→ RTC Reset

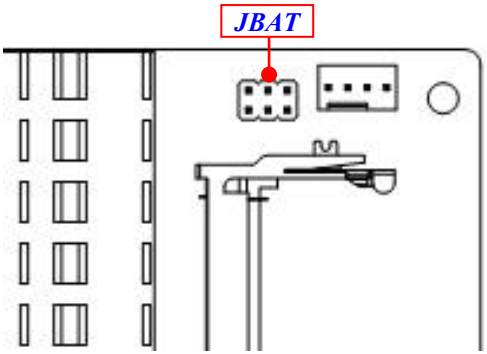


3-4 Open:Normal;

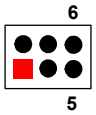


3-4 Closed: RTC Reset.

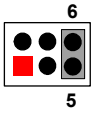
Pin 5&6 of JBAT (6-pin): Flash Override



Pin 5&6 of JBAT→ Flash Override



5-6 Open:Enable Security Measures in the Flash Descriptor(Default);

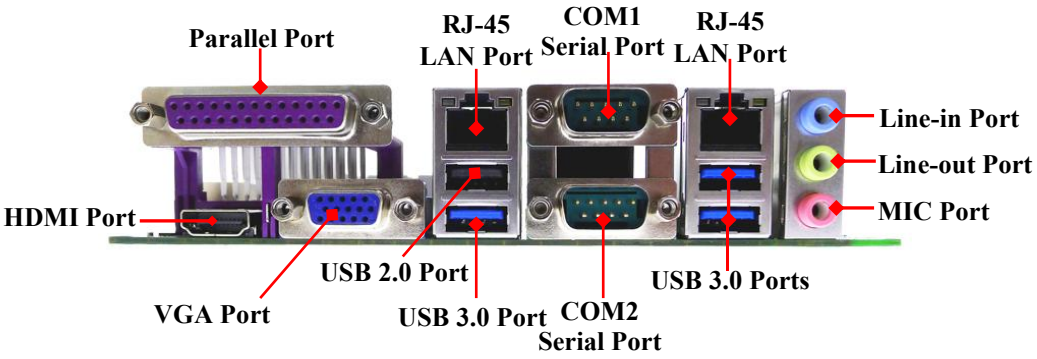


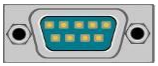
5-6 Closed: Disable Security Measures in the Flash Descriptor(Override).

2-2 Connectors and Headers

2-2-1 Connectors

(1) Rear I/O Connectors

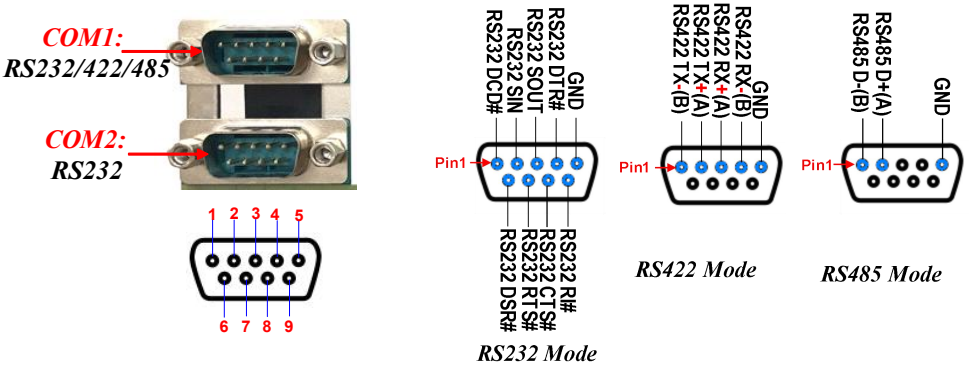


Icon	Name	Function
	**Parallel Port**	Also called LPT connector. Mostly for user to connect printer or scanner with parallel interface.
	**HDMI Port**	To connect display device that support HDMI specification.
	**VGA Port**	To connect display device that support VGA specification.
	**RJ-45 LAN Port**	This connector is standard RJ-45 LAN jack for Network connection.
	**USB 2.0 Port**	To connect USB keyboard, mouse or other devices compatible with USB specification.
	**USB 3.0 Port**	To connect USB keyboard, mouse or other devices compatible with USB specification. USB 3.0 ports supports up to 5Gbps data transfer rate.
	**COM Port**	Mainly for user to connect external MODEM or other devices that supports Serial Communications Interface.
	**Audio Connectors**	**BLUE :** Line-in Connector **GREEN :** Line-out Connector **PINK :** MIC Connector

(2) COM1_COM2(9-pin Block): Serial Port

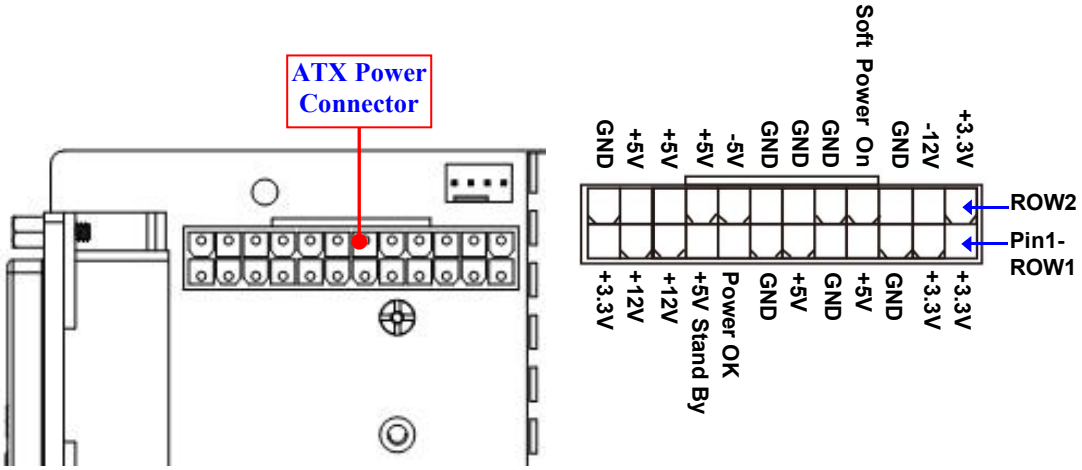
***COM1**: RS232/422/485 Serial Port; **COM2:** RS232 Serial Port only.*

The pin assignment for RS-232/ 422/ 485 is listed as follows:



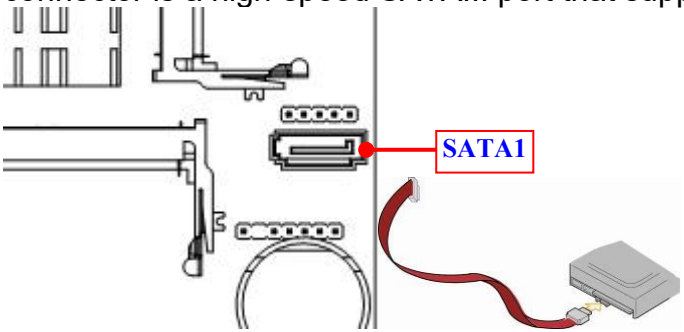
COM1 port can function as RS232/422/485 port. In normal settings COM1 functions as RS232 port. With compatible COM cable COM1 can function as RS422 or RS 485 port. User also needs to go to BIOS to set **'Transmission Mode Select'** for COM1 at first, before using specialized cable to connect different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

(3) ATXPWR (24-pin Block): ATX Power Connector



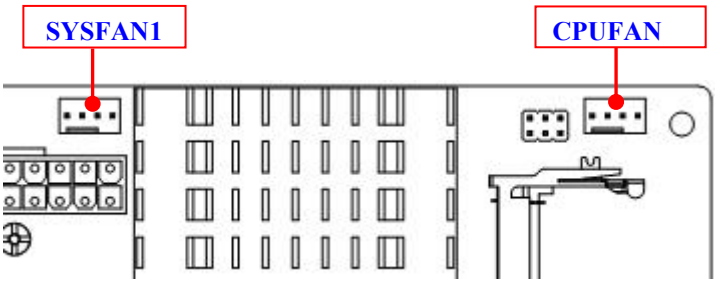
(4) SATA1 (7-pin block):SATAIII Port connector

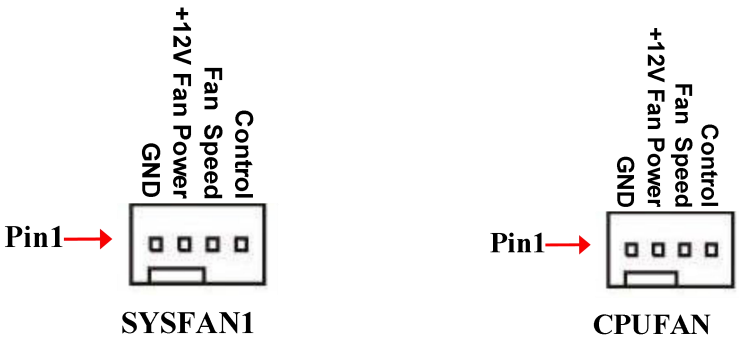
This connector is a high-speed SATAIII port that supports 6 GB/s transfer rate.



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

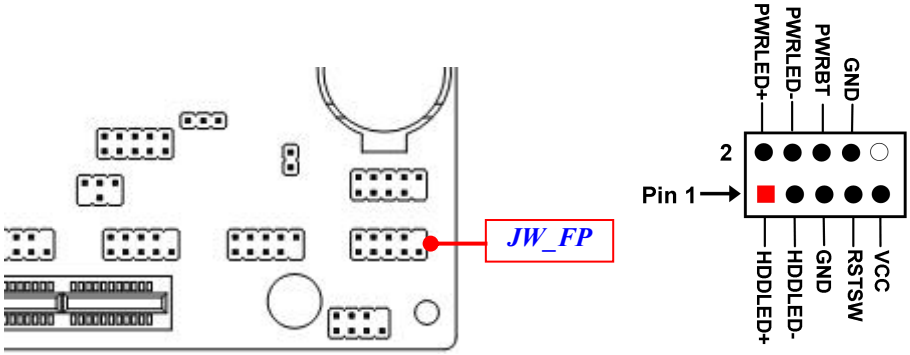
(5) SYSFAN1/ CPUFAN (4-pin): FAN Connector



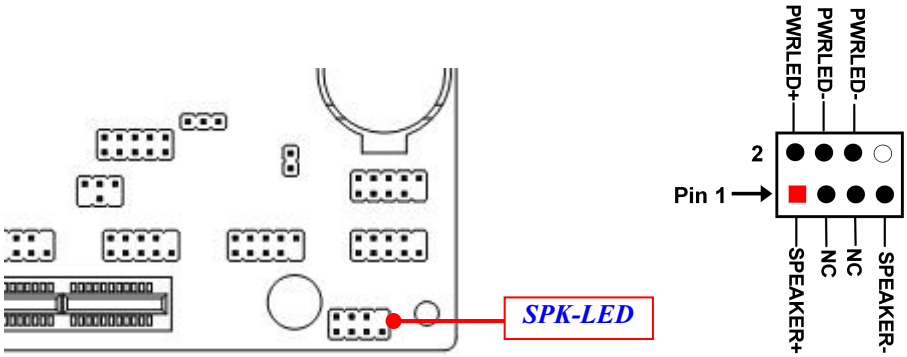


2-2-2 Headers

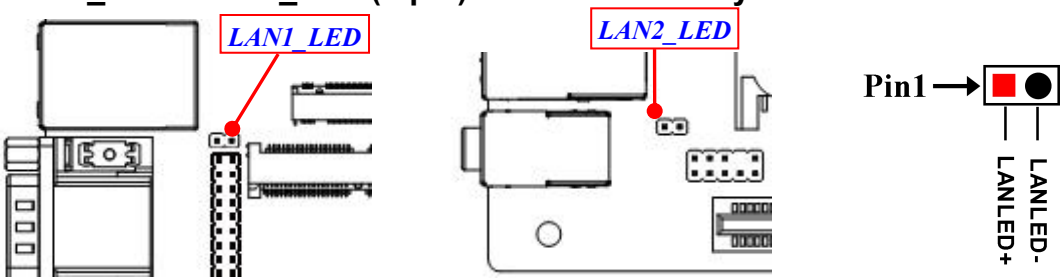
(1) JW_FP (9-pin): Front Panel Header



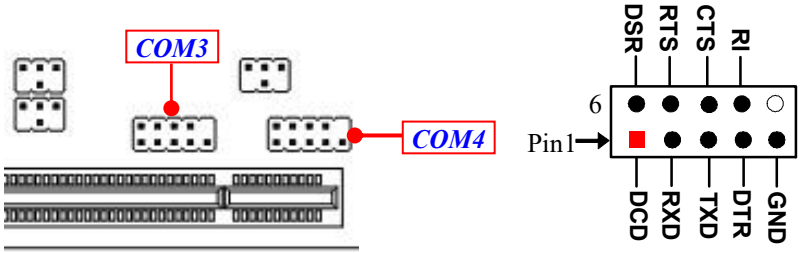
(2) SPK-LED(7-pin): SPEAKER and PWRLED Header



(3) LAN1_LED / LAN2_LED (2-pin): LAN LED Activity Function Select

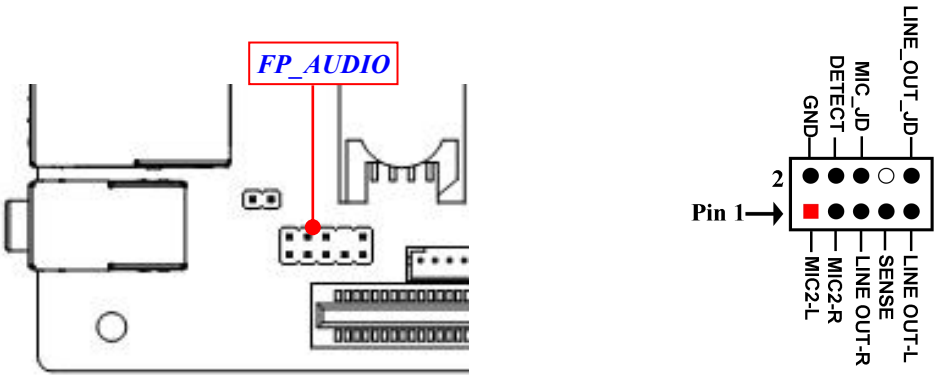


(4) COM3 / COM4 (9-pin): RS232 Serial Port Header



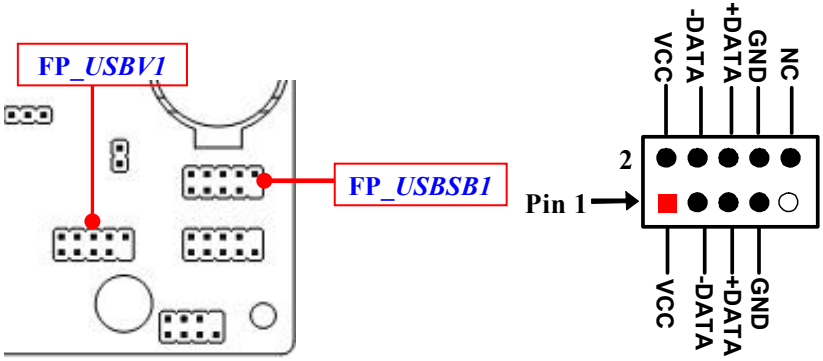
(5) FP_AUDIO (9-pin): Line-Out, MIC-In Header

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



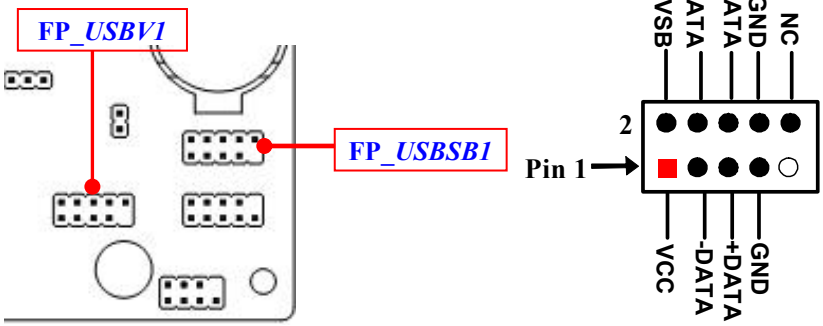
(6) FP_USBV1 (9-pin): USB 2.0 Port Header

POWER: NORMAL POWER (VCC5V) without wake up function

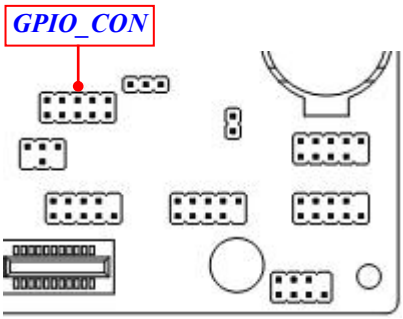


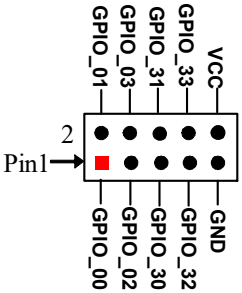
(7) FP_USBSB1 (9-pin): USB 2.0 Port Header

POWER: STANDBY POWER (5VSB) with wake up function

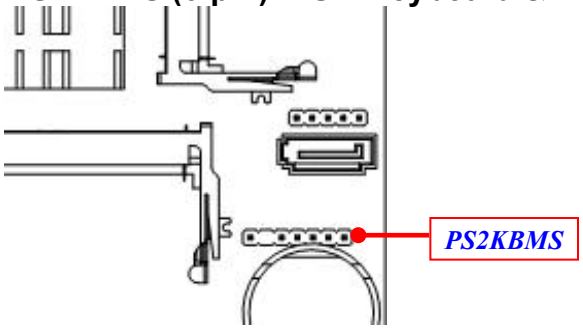


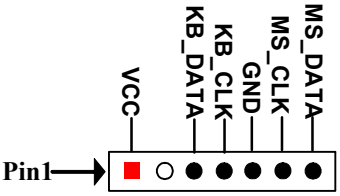
(8) GPIO_CON (10-pin): GPIO Header



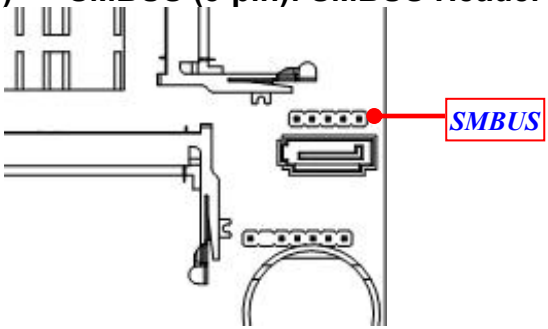


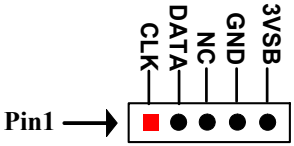
(9) PS2KBMS (6-pin): PS/2 Keyboard & Mouse Header





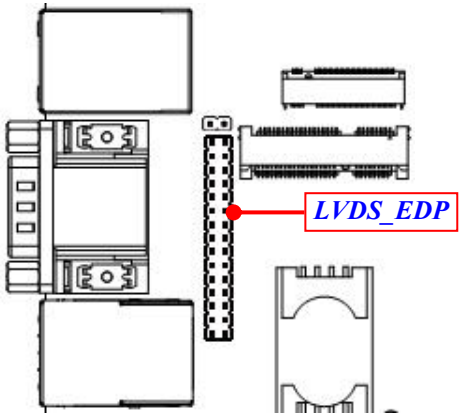
(10) SMBUS (5-pin): SMBUS Header

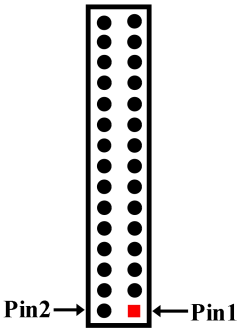




(11) LVDS_EDP (30-pin): 24-bit Dual Channel LVDS / 2- Lane EDP Header

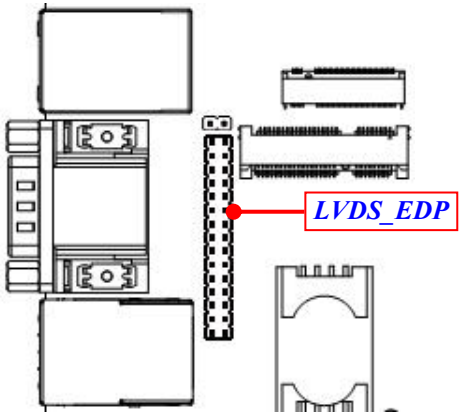
For LVDS Function:

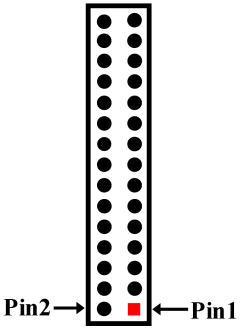




Pin Define	Pin NO.	Pin NO.	Pin Define
LVDSB_DATAP3	Pin 30	Pin 29	LVDSB_DATAN3
LVDS_CLKBP	Pin 28	Pin 27	LVDS_CLKBN
GND	Pin 26	Pin 25	GND
LVDSB_DATAP2	Pin 24	Pin 23	LVDSB_DATAN2
LVDSB_DATAP1	Pin 22	Pin 21	LVDSB_DATAN1
LVDSB_DATAP0	Pin 20	Pin 19	LVDSB_DATAN0
LVDSA_DATAP3	Pin 18	Pin 17	LVDSA_DATAN3
LVDS_CLKAP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

For EDP Function:

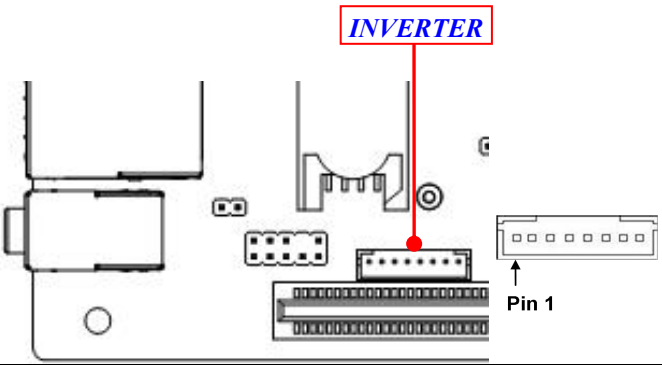




Pin Define	Pin NO.	Pin NO.	Pin Define
NC	Pin 29	Pin 30	NC
NC	Pin 27	Pin 28	NC
GND	Pin 25	Pin 26	GND
NC	Pin 23	Pin 24	NC
NC	Pin 21	Pin 22	NC
NC	Pin 19	Pin 20	NC
NC	Pin 17	Pin 18	NC
eDP_AUXN	Pin 15	Pin 16	eDP_AUXP
GND	Pin 13	Pin 14	NC
eDP_TX0N	Pin 11	Pin 12	eDP_TX0P
eDP_TX1N	Pin 9	Pin 10	eDP_TX1P
NC	Pin 7	Pin 8	NC
GND	Pin 5	Pin 6	GND
LCD_VCC	Pin 3	Pin 4	GND
LCD_VCC	Pin 1	Pin 2	LCD_VCC

***Note**：LVDS_EDP functions as LVDS and EDP Combo header . User aslo needs to go to BIOS to set '**LCD Panel Type**' (**refer to Page-43**)to before connecting compatible cable to the header.*

(12) INVERTER (8-pin): LVDS/EDP Inverter Connector



Pin No.	Definition
1	Backlight Enable
2	Backlight PWM
3	PVCC
4	PVCC
5	GND
6	GND
7	Backlight Up SW
8	Backlight Down SW

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!!*

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.

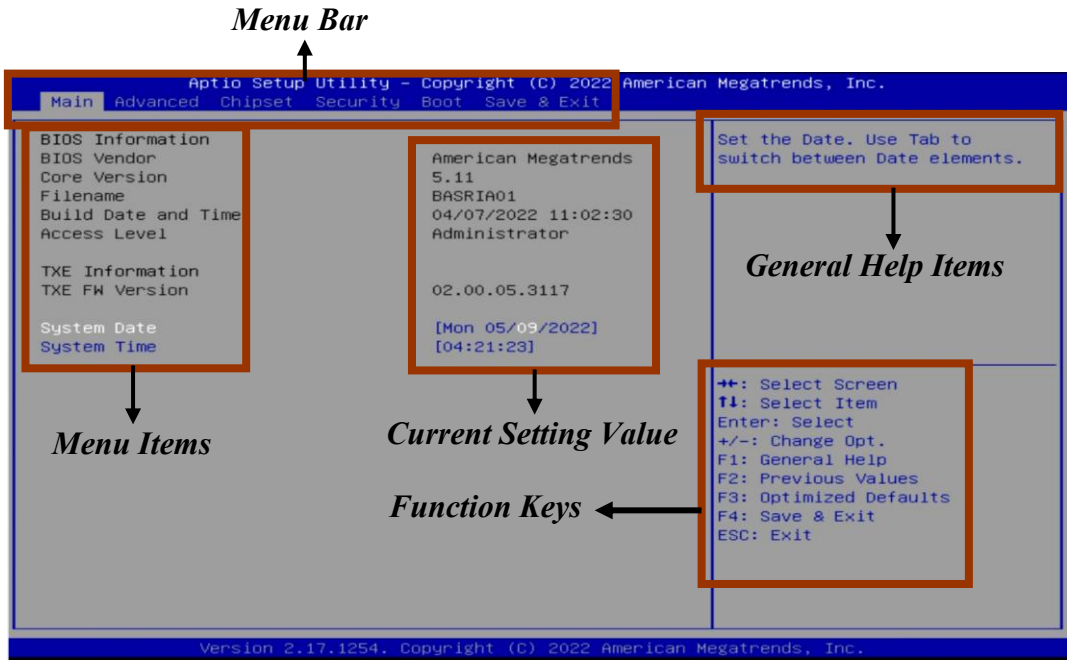
3-1 Entering Setup

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.

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.
- **[F7]:** To enter pop-up boot menu to select boot device.
- 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

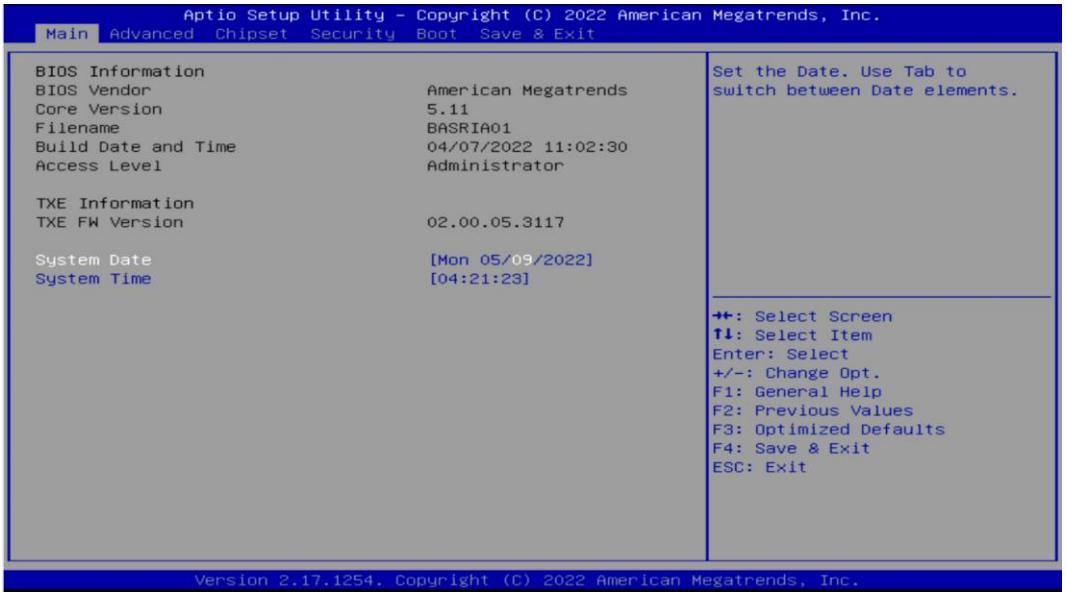
There are six menu bars on top of BIOS screen:

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.



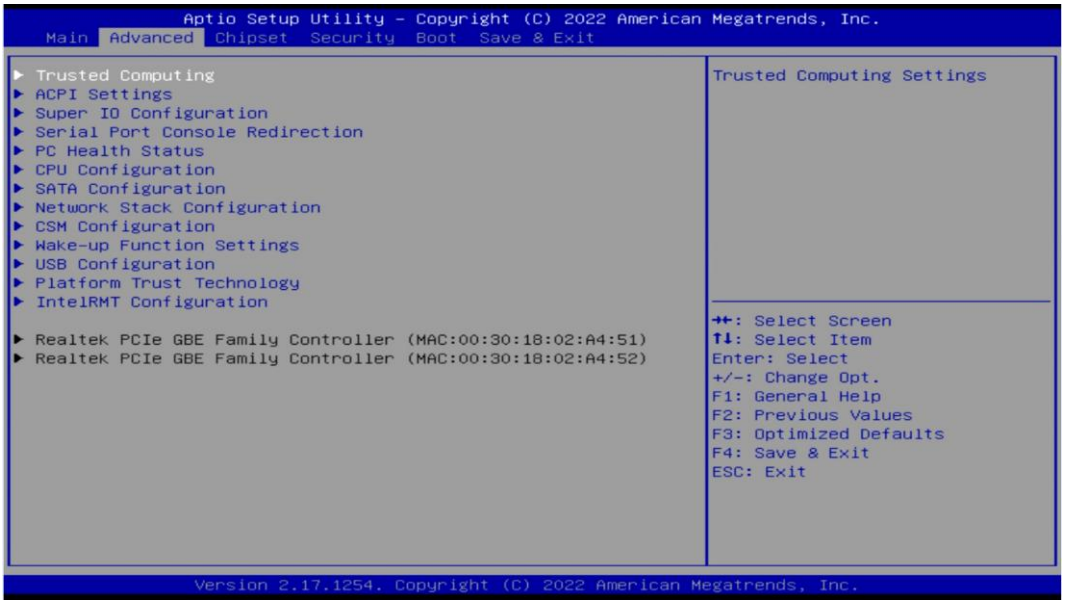
System Date

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



- **Trusted Computing**

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

  Configuration

  Security Device Support

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

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

  NO Security Device Found

- **ACPI Settings**

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

  ACPI Settings

  ACPI Sleep State

  Use this item to select the highest ACPI sleep state the system will enter when the

suspend button is pressed.
The optional settings are: [Suspend Disabled]; [S3 (Suspend to RAM)].

- **Super I/O 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).
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 are: [Auto]; [IO=3F8h; IRQ=4]; [IO=2F8h; IRQ=3]; [IO=3E8h; IRQ=4]; [IO=2E8h; IRQ=3].
Transmission Mode Select
The optional settings are: [RS422]; [RS232]; [RS485].
Mode Speed Select
The optional settings are: [RS232/RS422/RS485=250Kbps]; [RS232=1Mbps, RS422/RS485=10Mbps].
Serial Port FIFO Mode
The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

- **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).

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

Serial Port FIFO Mode

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

- **Serial Port 3 Configuration**

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

Serial Port 3 Configuration

Serial Port

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

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

Serial Port FIFO Mode

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

- **Serial Port 4 Configuration**

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

Serial Port 4 Configuration

Serial Port

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

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

Serial Port FIFO Mode

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

- **Parallel Port Configuration**

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

Parallel Port Configuration

Parallel Port

Use this item to enable or disable serial port (LPT/LPTE).
When set as [Enabled], user can make further settings in the following items:
The optional settings are: [Disabled]; [Enabled].

Device Settings

Change Settings

Use this item to select an optimal setting for super IO device.
The optional settings are: [Auto]; [IO=378h; IRQ=5]; [IO=378h; IRQ=5,6,7,9,10,11,12]; [IO=278h; IRQ=5,6,7,9,10,11,12]; [IO=3BCh; IRQ=5,6,7,9,10,11,12].

Device Mode

The optional settings are: [STD Printer Mode]; [SPP Mode]; [EPP-1.9 and SPP Mode]; [EPP-1.7 and SPP Mode]; [ECP Mode]; [ECP and EPP 1.9 Mode]; [ECP and EPP 1.7 Mode].

OS Select for Serial Port

Use this item to serial port support for Windows or Linux
The optional settings: [Windows]; [LINUX].

ERP Support
The optional settings: [Disabled]; [Enabled].
This item should be set as **[Disabled]** if you wish to have all active wake-up functions.

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* Pin 1&2 of ***COPEN*** *jumper setting for Case Open Detection*); if Pin 1&2 of ***COPEN*** is short, system will show Case Open Message during POST.

PS2 KB/MS Connect

Use this item to setting PS2 Connect Primary Devices
The optional settings are: [Keyboard First]; [Mouse First].

WatchDog Reset Timer
Use this item to support WDT reset function.
The optional settings: [Disabled]; [Enabled]
When set as [Enabled], the following sub-items shall appear:

WatchDog Reset Timer Value
User can set a value in the range of [10] to [255].

WatchDog Reset Timer Unit
The optional settings are: [Sec.]; [Min.].

WatchDog Wake-up Timer
Use this item to support WDT reset function.
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], the following sub-items shall appear:

WatchDog Wake-up Timer Value
The setting range is [10] ~ [4095] seconds, or [1] ~ [4095] minutes.

WatchDog Wake-up Timer Unit
The optional settings are: [Sec.]; [Min.].

ATX Power Emulate AT Power

This item support Emulate AT power function, MB power On/Off control by power supply. Use needs to select 'AT or ATX Mode' on MB jumper at first (refer to AT_MODE jumper setting Pin 1&2 of for ATX Mode & Pin 2&3 of AT Mode Select).

- **Serial Port Console Redirection**

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

COM1

Console Redirection

Use this item to enable or disable COM1 Console Redirection.

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

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

- **Console Redirection Settings**

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

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

COM1

Console Redirection

Terminal Type

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.

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

Bits per second

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

The optional settings are: [9600]; [19200]; [38400]; [57600]; [115200].

Data Bits
The optional settings are: [7]; [8].
Parity
A parity bit can be sent with the data bits to detect some transmission errors.
The optional settings: [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 are: [Disabled]; [Enabled].
Recorder Mode
With this mode enable only text will be sent. This is to capture Terminal data.
The optional settings are: [Disabled]; [Enabled].
Resolution 100x31
Use this item to enable or disable extended terminal resolution.
The optional settings are: [Disabled]; [Enabled].

Legacy OS Redirection Resolution
Use this item to On Legacy OS, the Number of Rows and Columns supported redirection
The optional settings are: [80x24]; [80x25].
Putty Keypad
Use this item to select Functionkey and KeyPad on Putty
The optional settings are: [VT100]; [LINUX]; [XTERMR6]; [SCO]; [ESCN]; [VT400].
Redirection After BIOS POST
The Settings specify if BootLoader is selected then Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legaacy console Redirection is enabled for Legacy OS.
The optional settings are: [Always Enable]; [BootLoader].

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

Console Redirection
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], user can make further settings in 'Console Redirection Settings':

- **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.
Out-of-Band Mgmt Port
The default setting is: [COM1].
Terminal Type
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
The optional settings are: [VT100]; [VT100+]; [VT-UTF8]; [ANSI].

Bits per second

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

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

Flow Control

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

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

Data Bits

The default setting is: [8].

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

Parity

The default setting is: [None].

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

Stop Bits

The default setting is: [1].

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

- **PC Health Status**

Press [Enter] to view current hardware health status, set shutdown temperature, or make further settings in '**SmartFAN Configuration**'.

- **SmartFAN Configuration**

Press [Enter] to make settings for SmartFAN Configuration:

CPUFAN/SYSFAN1 Smart Mode

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

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

CPUFAN/SYSFAN1 Full-Speed Temperature

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

CPUFAN/SYSFAN1 Full-Speed Duty
Use this item to set CPUFAN full speed duty. Fan will run at full speed when above the pre-set duty.
CPUFAN/SYSFAN1 Idle-Speed Temperature
Use this item to set CPUFAN idle speed temperature. Fan will run at idle speed when below the pre-set temperature.
CPUFAN/SYSFAN1 Idle-Speed Duty
Use this item to set CPUFAN idle speed duty. Fan will run at idle speed when below the pre-set duty.

Shutdown Temperature Configuration
Use this item to select system shutdown temperature.
The optional settings are: [Disabled]; [65°C/149°F]; [70°C/158°F]; [75°C/167°F]; [80°C/176°F]; [85°C/185°F].

- **CPU Configuration**

Press [Enter] to view current CPU configuration and make settings for the following sub-items:
Limit CPUID Maximum
The optional settings: [Disabled]; [Enabled].
This item should be set as [Disabled] for Windows XP.
EIST
The optional settings: [Disabled]; [Enabled].
Use this item to enable or disable Intel SpeedStep.
When set as [Enabled], the following sub-items shall appear:
Turbo Mode
Use this item to enable or disable CPU Turbo Mode.
The optional settings: [Disabled]; [Enabled].
CPU C State Report
Use this item to enable or disable CPU C state report to OS.
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], the following item shall appear:

Max CPU C-State
This item controls Max C-state that the processor will support.
The optional settings: [C7]; [C6]; [C1].

- **SATA Configuration**

Press [Enter] to make settings for the following sub-items:
SATA Configuration
SATA Controller
The optional settings are: [Enabled]; [Disabled].
When set as [Enabled], the following items shall appear:
SATA Mode Selection
Use this item to determines how SATA controller operate.
The default setting is: [AHCI].
SATA Interface Speed
The item is for user to set the maximum speed the SATA controller can support.
The optional settings are: [Gen1]; [Gen2]; [Gen3].

SATA Port

Not Present
Port
The optional settings are: [Enabled]; [Disabled].

M.2 SATA

Not Present
Port
The optional settings are: [Enabled]; [Disabled].

- **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].

- **CSM Configuration**

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

Compatibility Support Module Configuration

Boot Option Filter

This item controls Legacy/UEFI ROMs priority.

The optional settings are: [UEFI and Legacy]; [Legacy only]; [UEFI only].

Network

This item controls the execution of UEFI and legacy PXE OpROM.

The optional settings are: [Do not launch]; [UEFI]; [Legacy].

Storage

This item controls the execution of UEFI and Legacy Storage OpROM.

The optional settings are: [Do not launch]; [UEFI]; [Legacy].

Other PCI devices

This item determines OpROM execution policy for devices other than Network, storage or video.

The optional settings are: [Do not launch]; [UEFI]; [Legacy].

- **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-up by RTC alarm.

The optional settings: [Disabled]; [Enabled].
When set as [Enabled], system will wake on the hour/minute/second 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.

Wake-up System with Dynamic Time

Use this item to enable or disable system wake-up by RTC alarm.
The optional settings: [Disabled]; [Enabled].
When set as [Enabled], system will wake on the current time + increased minute(s).The settings range is from [1] ~ [60] minute(s).

Wake-up Time Increase

Use this item to 1 to 60 minute(s)

USB Wake-Up from S3-S4

The optional settings: [Disabled]; [Enabled].
**Note: USB wake-up function is affected by ERP function in S4. Please disable ERP before activating this function in S4.*
When set as [Enabled], the following items shall appear:

PS2 KB/MS Wake-Up from S3-S5

The optional settings: [Disabled]; [Enabled].
**Note: PS2 KB/MS wake-up function is affected by ERP function in S4-S5. Please disable ERP before activating this function in S4-S5.*

- **USB Configuration**

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

USB Configuration

Legacy USB Support

The optional settings are: [Enabled]; [Disabled]; [Auto].
[Enabled]: To enable legacy USB support.
[Disabled]: To keep USB devices available only for EFI specification,

[Auto]: To disable legacy support if no USB devices are connected.

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.

- **Platform Trust Technology**

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

  TPM Configuration

  fTPM

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

- **IntelRMT Configuration**

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

IntelRMT Configuration

Intel RMT Support

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

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

HW Notification

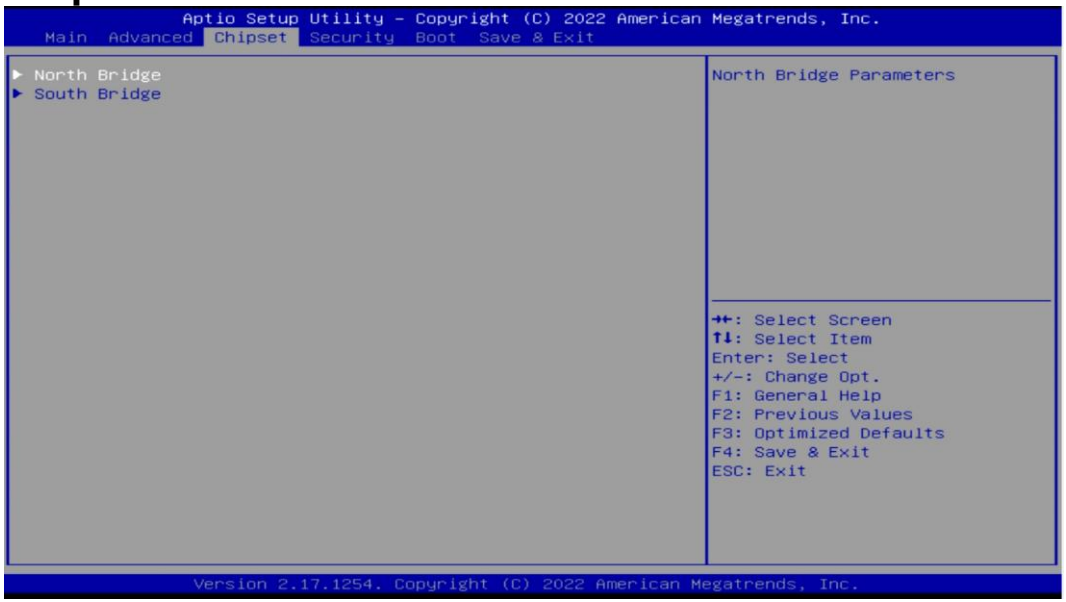
This item is for user to select hardware notification enabling status.

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

- **Realtek PCIe GBE Family Controller- XX:XX:XX:XX:XX:XX**
- **Realtek PCIe GBE Family Controller - XX:XX:XX:XX:XX:XX**

These items show current networks' information.

3-8 Chipset Menu



- **North Bridge**

Press [Enter] to view memory configurations or make settings for the following sub-items:

PAVC
Use this item to enable or disable protected audio video control.
The optional settings are: [Disabled]; [Enabled].
DVMT Pre-Allocated
Use this item to select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.
The optional settings are: [32M]; [64M]; [96M]; [128M]; [160M]; [192M]; [224M]; [256M]; [288M]; [320M]; [352M]; [384M]; [416M]; [448M]; [480M]; [512M].
DVMT Total Gfx Mem
Use this item to select DVMT 5.0 total graphics memory size used by the internal graphics device.
The optional settings are: [128M]; [256M]; [MAX].
Aperture Size
The optional settings are: [128MB]; [256MB]; [512MB].
GTT Size
The optional settings are: [2MB]; [4MB]; [8MB].
Primary IGFX Boot Display
The optional settings are: [Auto]; [CRT]; [HDMI] when '**Active LFP**' is set as [Disabled], or [Auto]; [CRT]; [LVDS]; [HDMI] when '**Active LFP**' is set as [Enabled].
Secondary IGFX Boot Display
The optional settings are: [Disabled]; [CRT]; [HDMI] when '**Active LFP**' is set as [Disabled], or [Disabled]; [CRT]; [LVDS]; [HDMI] when '**Active LFP**' is set as [Enabled].
Active LFP
The optional settings are: [Disabled]; [Enabled].
[**Disable**]: VBIOS does not enable LVDS.
[**Enable**]: VBIOS enable LVDS driver by integrated encoder.
The default setting is:* *[Disabled].***
When set as ***[Enable]****, user can make further settings in '****LCD Panel Type****' and '****Backlight Control****'.*

LCD Panel Type
Use this item to select LCD panel resolution used by internal graphics device by selecting the appropriate setup item.
The optional setting are: [800 x 480 1ch 18-bit]; [800x 600 1ch 18-bit]; [800x 600 1ch 24-bit]; [1024 x 600 1ch 18-bit]; [1024 x 768 1ch 18-bit]; [1024 x 768 1ch 24-bit]; [1280 x 768 1ch 24-bit]; [1280 x 800 1ch 18-bit]; [1280 x 800 1ch 24-bit]; [1366 x 768 1ch 18-bit]; [1366 x 768 1ch 24-bit]; [1440 x 900 2ch 18-bit]; [1440 x 900 2ch 24-bit]; [1280 x 1024 2ch 24-bit]; [1680 x 1050 2ch 24-bit]; [1920 x 1080 2ch 24-bit] ; [eDP].
Backlight Control
The optional settings are: [PWM Inverted]; [PWM Normal].
LVDS FW Protect
The optional settings are: [Enabled]; [Disabled].
Memory Information
Total Memory
Memory Slot1
Memory Slot2
Max T0LUD
Use this item to select he maximum value of T0LUD.
The optional settings are: [2GB]; [2.25GB]; [2.5GB]; [2.75GB]; [3GB].

- **South Bridge**

Press [Enter] for further settings in the following items:
Onboard PCIE LAN2
The optional settings are: [Enabled]; [Disabled].
PCI Slot
The optional settings are: [Enabled]; [Disabled].
Mini PCIE
The optional settings are: [Enabled]; [Disabled].
Mini PCIE Speed
The optional settings are: [Auto]; [Gen 2]; [Gen 1].

Audio Controller

Use this item to control detection of the Azalia device.

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

[**Disabled**]: Azalia will be unconditionally disabled;

[**Enabled**]: Azalia will be unconditionally enabled.

Azalia HDMI Codec

Use this item to enable or disable internal HDMI codec for Azalia.

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

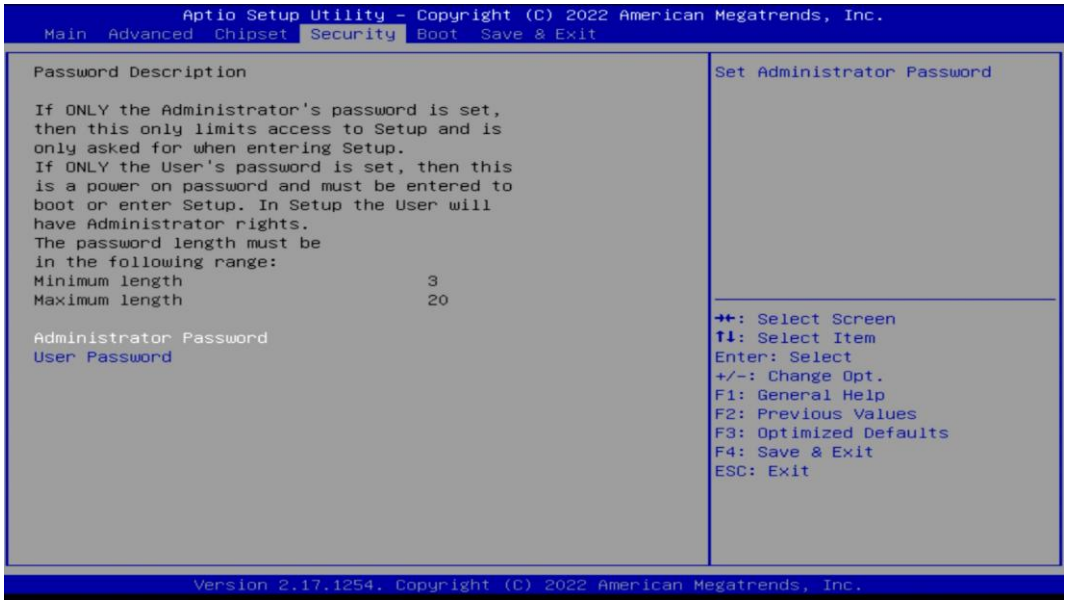
System State after Power Failure

Use this item to select system power state when AC power is re-applied after a power failure.

The optional settings are: [Always Off]; [Always On]; [Former State].

**__Note:__ The option [Always On] and [Former State] are affected by '__ERP Support__'. Please disable ERP to support [Always On] and [Former State] function.*

3-9 Security Menu



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

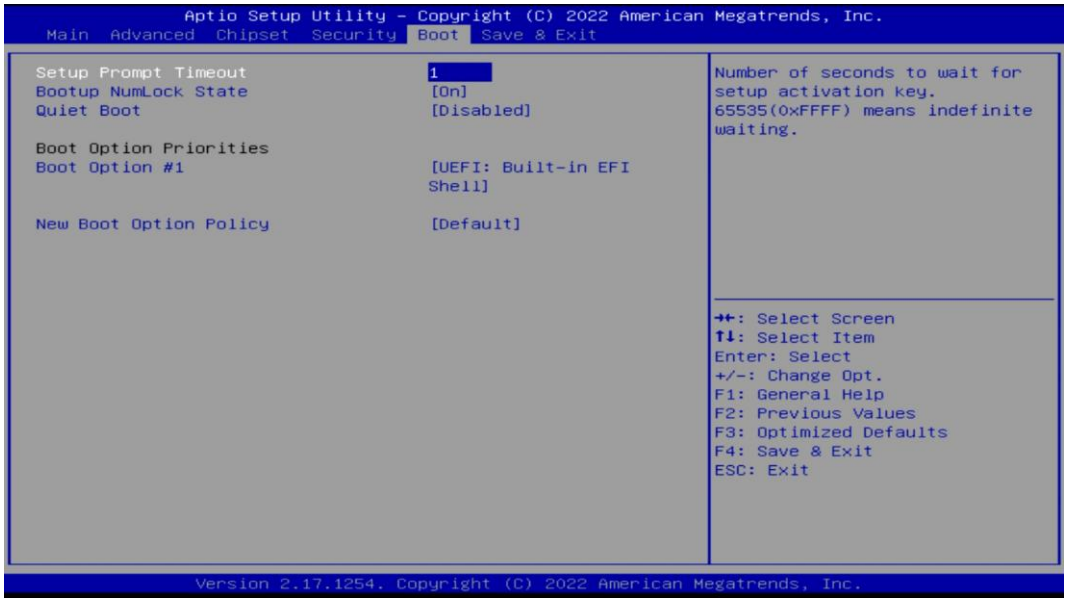
Administrator Password

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.

3-10 Boot Menu

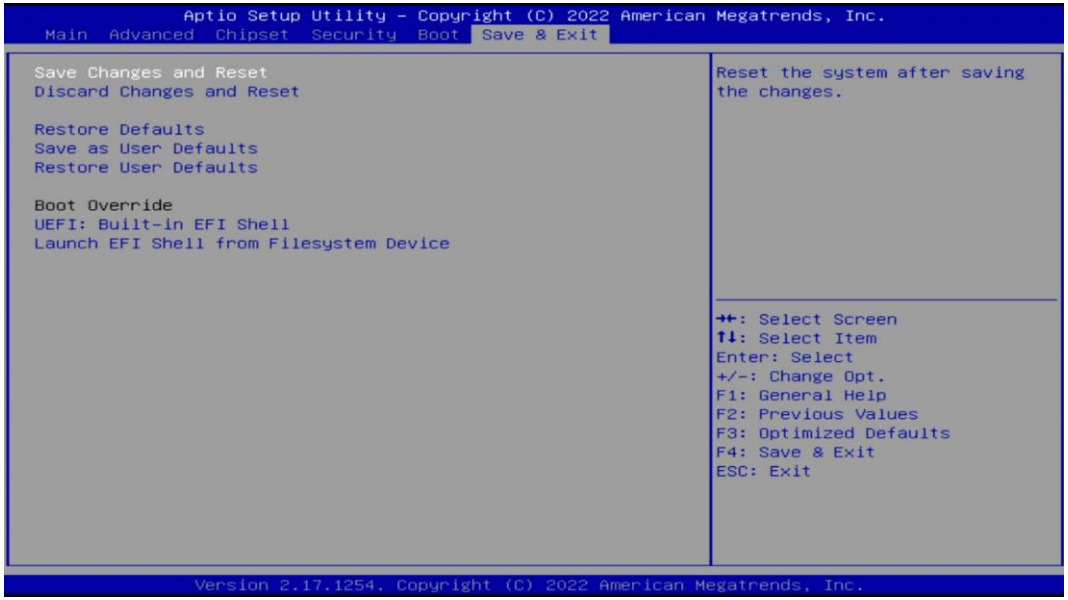


Setup Prompt Timeout
Use this item to set number of seconds to wait for setup activation key.
Bootup Numlock State
Use this item to select keyboard numlock state.
The optional settings are: [On]; [Off].
Quiet Boot
The optional settings are: [Disabled]; [Enabled].
Boot Option Priorities

Boot Option #1
The optional settings are: [UEFI:Built-in EFI Shell]; [Disabled].
Use this item to decide system boot order from available options.
New Boot Option Policy
This item controls the placement of newly detected UEFI boot options.

The optional settings are: [Default]; [Place First]; [Place Last].

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

Boot Override
UEFI: Built-in EFI Shell
Press this item to select the device as boot disk after save configuration and reset.

Launch EFI Shell from file system device
This item is used for attempts to launch EFI shell application from one of the available file system devices.