

***TECHNICAL MANUAL***

***Of***

***Intel H61 Express Chipset***

***Based Mini-ITX M/B***

**NO. G03-NF9F-F**

**Revision: 2.0**

**Release date: October 1, 2019**

**Trademark:**

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

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## Environmental Protection Announcement

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



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## Environmental Safety Instruction

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- 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.

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## USER'S NOTICE

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### Manual Revision Information

Reversion	Revision History	Date
2.0	Second Edition	October 1, 2019

### Item Checklist

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

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# Chapter 1

## Introduction of the Motherboard

### 1-1 Feature of Motherboard

- Intel® H61 express chipset
- Support LGA 1155 CPU socket Intel® Core™ i7 processors / Intel® Core™ i5 processors / Intel® Core™ i3 processors
- Support DDRIII 1066-1333 SO-DIMM up to 16GB and dual channel function
- Integrated with Realtek RTL8111EVL Gigabit Ethernet LAN chip
- Integrated with RealTek ALC662-GR 6-channel HD Audio Codec
- Support USB 2.0 data transport demands.
- Support PCIE 2.0 x16 by 16 Lane slot and Mini PCI-E slot
- Support TPM 1.2 function
- Support CPU Smart FAN
- Supports ACPI S3 Function
- Compliance with ErP Standard
- Support Watchdog Timer Technology

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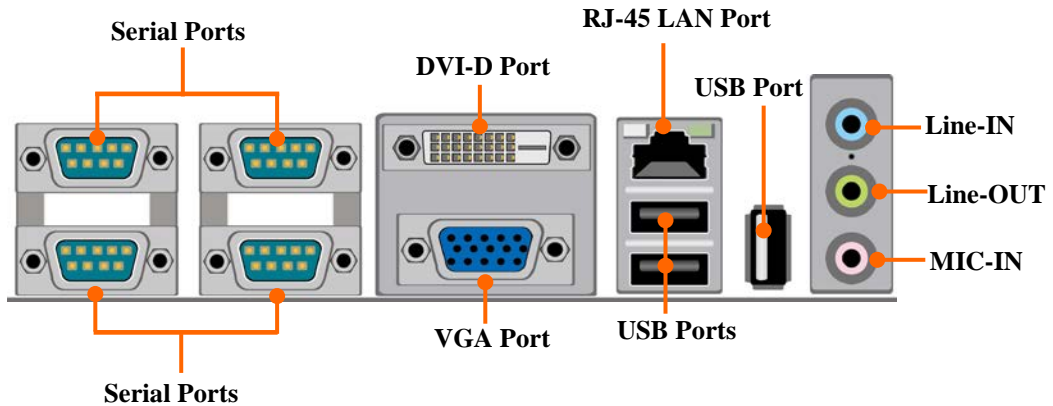
## 1-2 Specification

<b>Spec</b>	<b>Description</b>
<b>Design</b>	<ul style="list-style-type: none"><li>● Mini-ITX form factor 6 layers ; PCB size: 17.0x17.0cm</li></ul>
<b>Chipset</b>	<ul style="list-style-type: none"><li>● Intel H61 Express Chipset</li></ul>
<b>CPU Socket</b>	<ul style="list-style-type: none"><li>● Support Intel® Core™ i7 Processor, Intel® Core™ i5 Processor, Intel® Core™ i3 Processor in the LGA 1155 Socket</li></ul> <p><i>* for detailed CPU support information please visit our website</i></p>
<b>Memory Slot</b>	<ul style="list-style-type: none"><li>● DDRIII SO-DIMM slot x 2</li><li>● Support DDRIII 1066/1333 MHz SO-DIMM expandable to 16GB</li><li>● Support dual channel function</li></ul>
<b>Expansion Slot</b>	<ul style="list-style-type: none"><li>● PCIE 2.0 x16 by 16 lane slot x1</li><li>● Mini-PCIE slot x1</li></ul>
<b>Gigabit LAN Chip</b>	<ul style="list-style-type: none"><li>● Integrated with Realtek RTL8111EVL PCI-E Gigabit LAN chips</li><li>● Support Fast Ethernet LAN function of providing 10/100/1000 Mbps Ethernet data transfer rate</li></ul>
<b>Audio Chip</b>	<ul style="list-style-type: none"><li>● Realtek ALC662-GR 6-channel Audio Codec integrated</li><li>● Audio driver and utility included</li></ul>
<b>BIOS</b>	<ul style="list-style-type: none"><li>● 32M DIP Flash ROM</li></ul>
<b>Multi I/O</b>	<ul style="list-style-type: none"><li>● COM port connector x 4</li><li>● DVI-D port connector x1</li><li>● VGA port connector x1</li><li>● RJ-45 LAN connector x1</li><li>● USB 2.0 port connector x 3</li><li>● Audio connector x1 (Line-in, Line-out, MIC)</li><li>● SATAII Connector x4</li><li>● Front panel audio header x1</li></ul>

- Parallel port header x1
- PS/2 keyboard & mouse header x1
- GPIO header x1
- TPM 1.2 header x1
- Serial port header x2
- RS422/RS485 header x1
- 9-pin USB 2.0 header x2
- CIR header x1
- Speaker header x1
- PWRLED header x1
- Front panel header x1
- HDMI\_SPDIF header x1

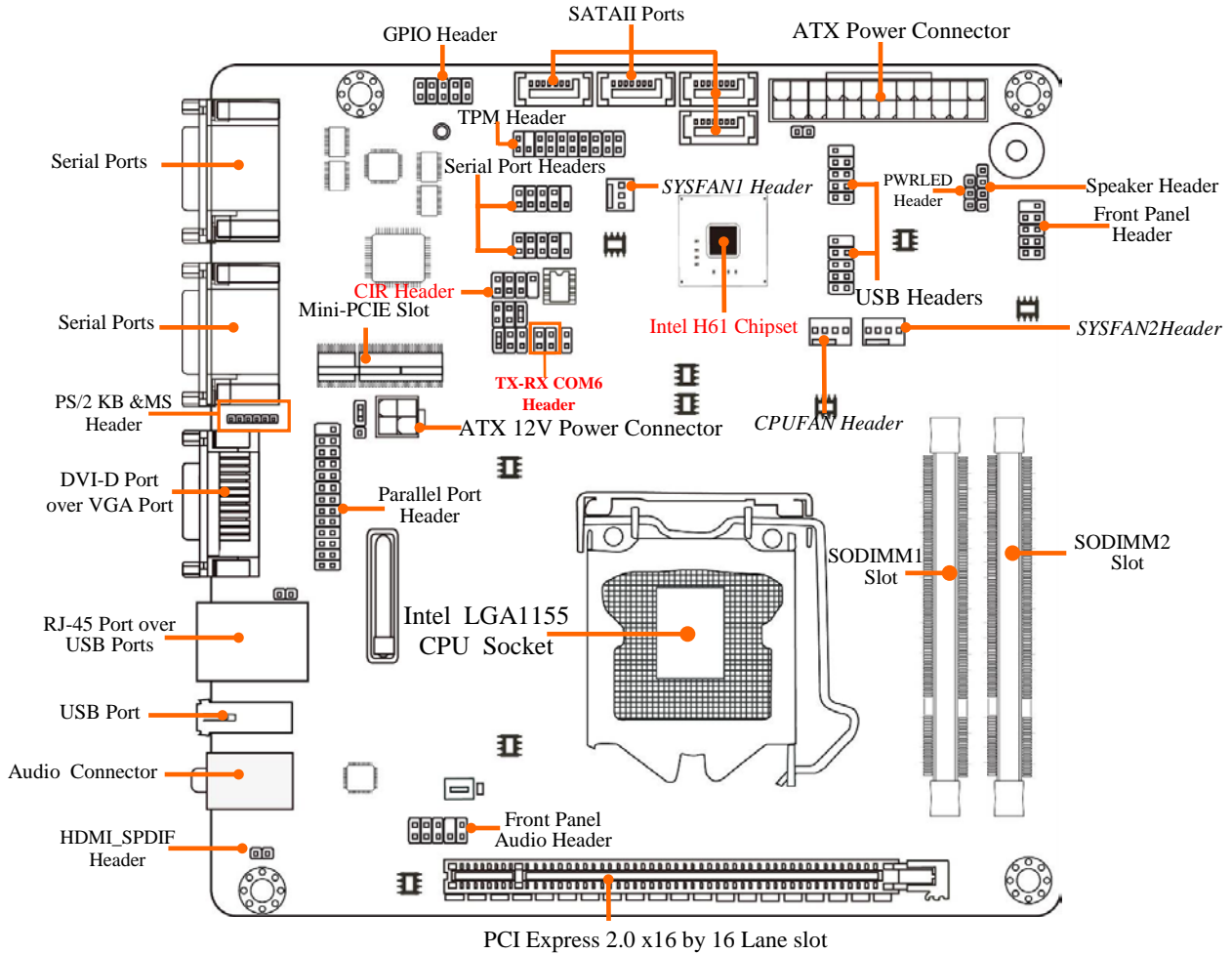
## 1-3 Layout Diagram

### *Rear IO Diagram*



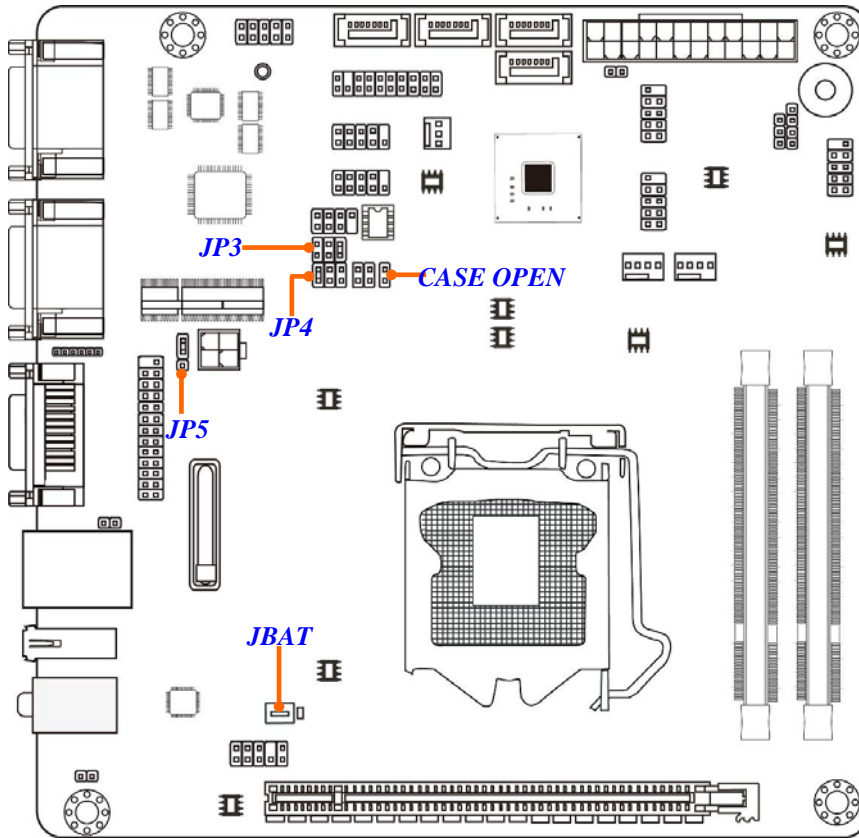


# Motherboard Internal Diagram



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## Motherboard Jumper Position



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## ***Jumper***

<b>Jumper</b>	<b>Name</b>	<b>Description</b>
JBAT	CMOS RAM Clear Function Setting	3-pin Block
JP3	COM6 Header RS232/485/422 Function Select	6-pin Block
JP4	COM1 Header RS232 Power Select	6-pin Block
JP5	MINIPCI-E VCC 3.3V/SB 3.3VSelect	3-pin Block
CASE OPEN	Case Open Message Display Function	2-pin Block

## ***Connectors***

<b>Connector</b>	<b>Name</b>	<b>Description</b>
ATXPWR	ATX Power Connector	24-pin Block
ATX12V	ATX 12V Power Connector	4-pin Connector
COM3,COM4 & COM1, COM2	Serial Port Connector	9-pin Connector
DVI-D	DVI-D Port Connector	24-pin Connector
VGA1	Video Graphic Attach Connector	15-pin Female
RJ-45 (from LAN 1)	RJ-45 LAN Connector	8-pin Connector
USB (from UL1,USB3)	USB 2.0 Port Connector	4-pin Connector
AUDIO1	Line In/ Line Out /MIC Audio Connector	3 -phone Jack
SATA1/SATA2/ SATA3/SATA4/	SATAII Connector	7-pin Connectors

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## **Headers**

<b>Header</b>	<b>Name</b>	<b>Description</b>
FP_AUDIO	Front Panel Audio Header	9-pin block
COM5/COM6	Serial Port Header	9-pin Block
TX-RXCOM6	RS 232/422/485 port header	4-pin block
GPIO_CON	GPIO Header	10-pin Block
USB1/USB2	USB Header	9- pin Block
JW_FP	Front Panel Header(PWR LED/ HD LED/ /Power Button /Reset)	9-pin Block
PWR LED	Power LED	3-pin Block
SPEAK	Speaker Header	4-pin Block
SYSFAN1	FAN Speed Header	3-pin Block
CPU FAN/SYSFAN2	FAN Speed Header	4-pin Block
CIR	CIR Header	7-pin Block
KBMS	PS2 Keyboard & Mouse Header	6-pin Block
HDMI_SPDIF	SPDIF Out header	2-pin block
LANLED	LAN LED header	2-pin block
TPM	TPM 1.2 Header	19-pin Block
PARALLEL	Parallel Port Header	25-pin Block

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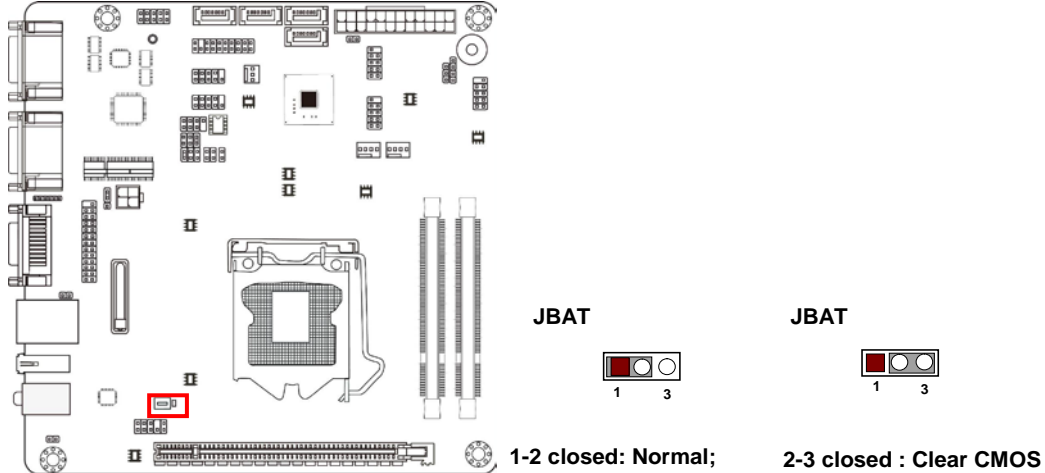
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# Chapter 2

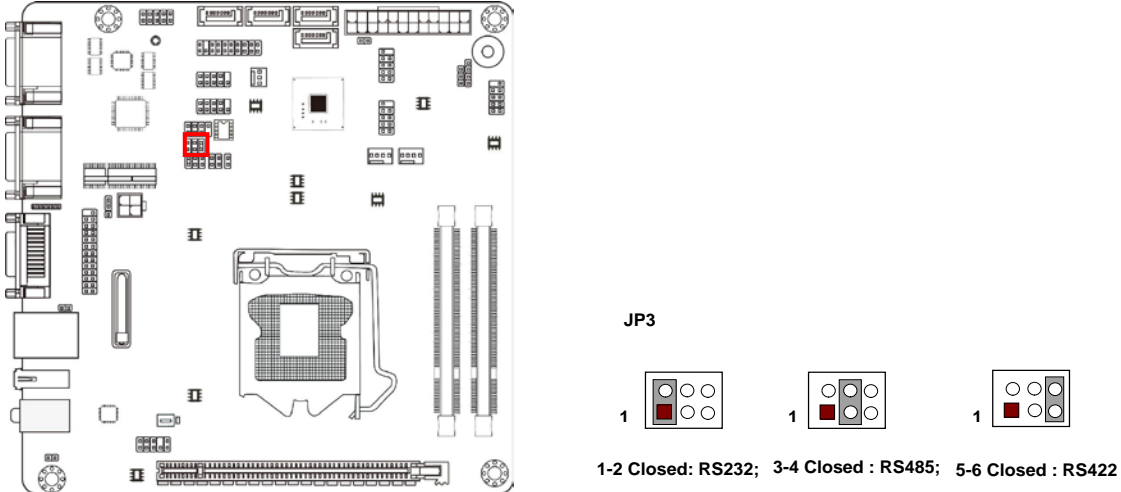
## Hardware Installation

### 2-1 Jumper Setting

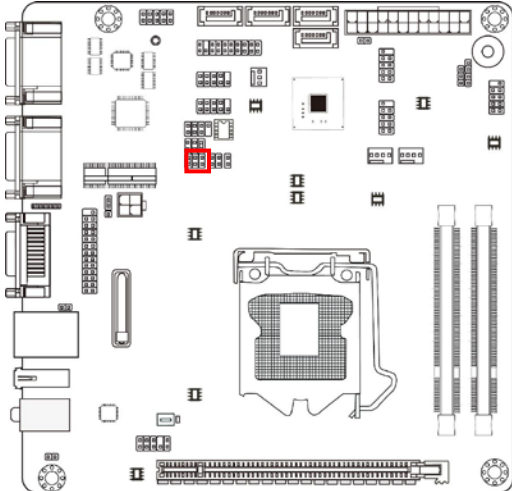
#### (1) JBAT (3-pin): Clear CMOS Function Setting



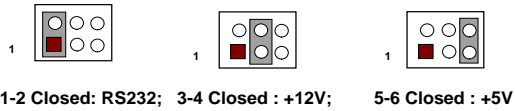
#### (2) JP3 (6-pin): COM6 Header RS232/485/422 Function Select



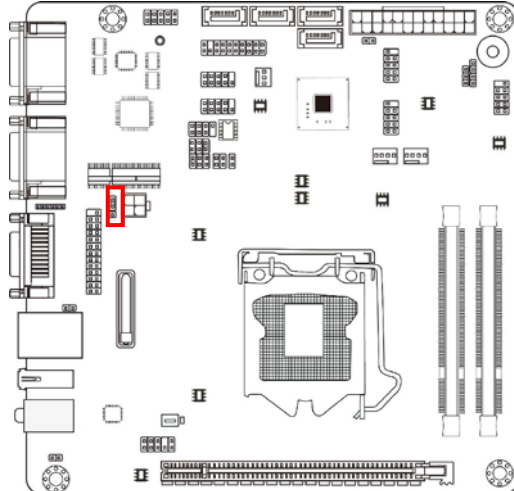
### (3) JP4 (6-pin): COM1 RS232 Power Select



JP4



### (4) JP5 (3-pin): Mini PCI-E VCC3.3V/ SB 3.3 V Select



JP5



1-2 Closed : MINI PCI-E VCC= 3.3V Select;

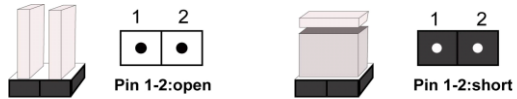
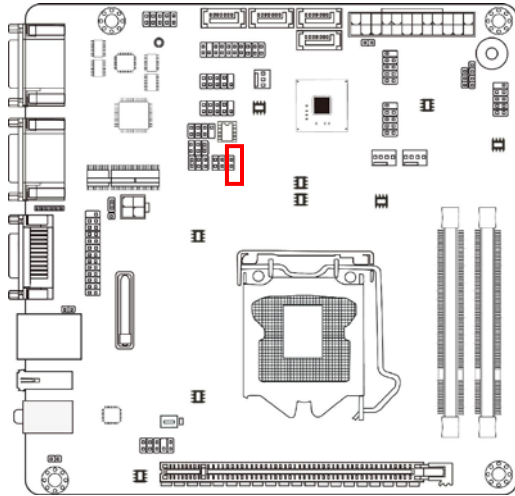
JP5



2-3 Closed : MINI PCI-E VCC= 3.3VSB Select

### (5) CASE OPEN (2-pin): Case Open Message Display Function Select

*Pin 1-2 shorted: Case open display function enabled. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.*



**CASE OPEN**

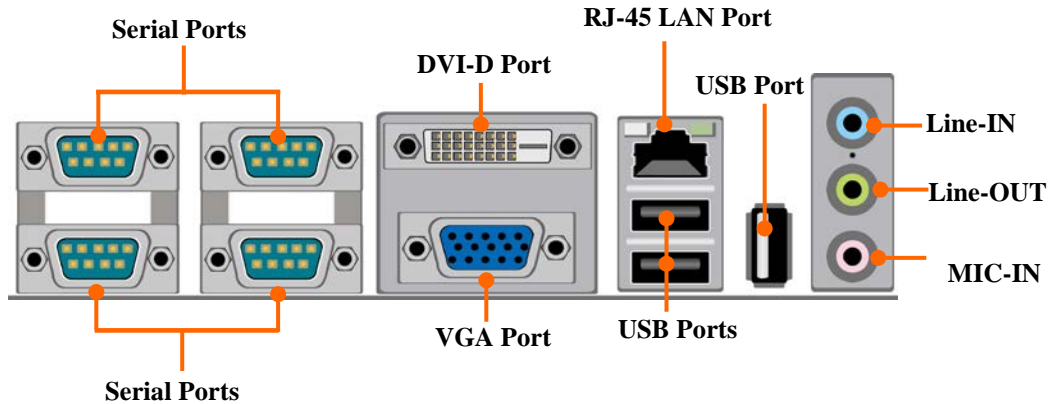
**1-2 Open: Normal    1-2 Short: Case Open Warning**

**Case Open Display Function Select**

## 2-2 Connectors and Headers

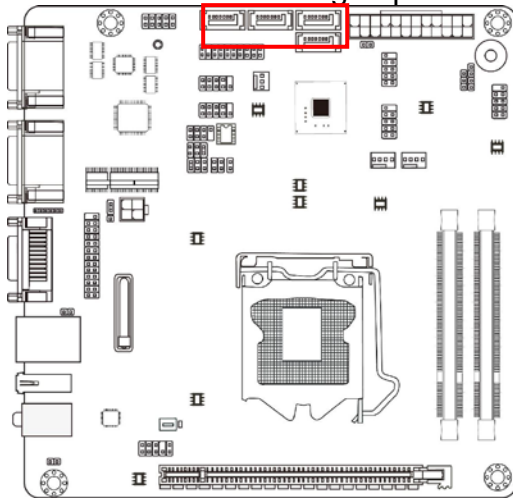
### 2-2-1 Connectors

#### (1) Rear Panel Connectors

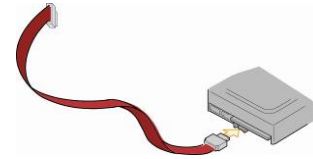


## (2) SATA II Port connector: SATA1/SATA2/SATA3/SATA4

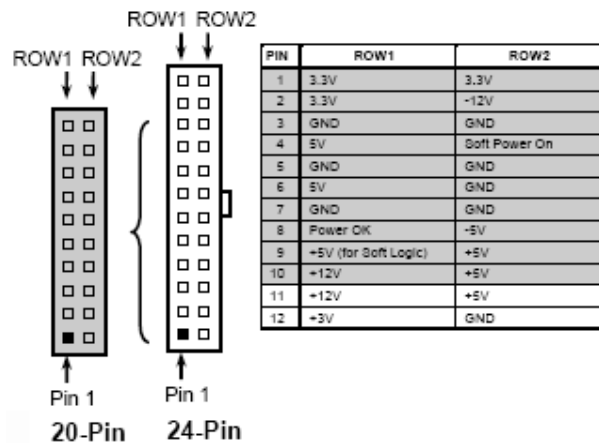
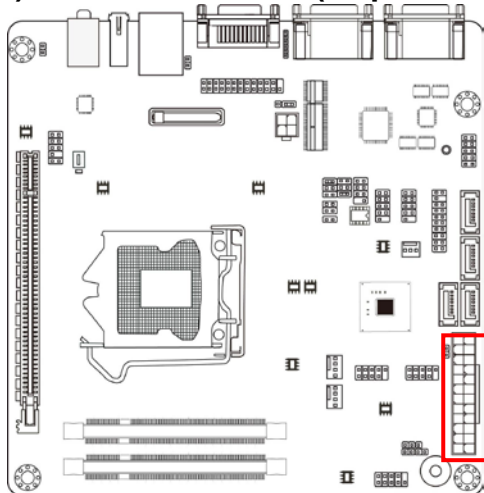
These connectors are high-speed SATAII ports that support 3 Gbps transfer rate.



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

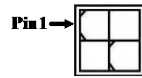
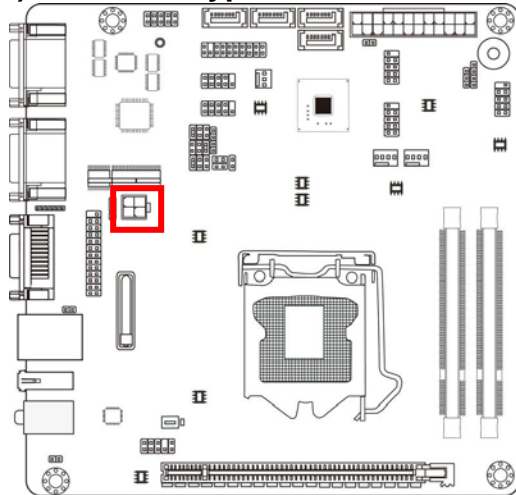


## (3) Power Connector (24-pin block): ATXPWR

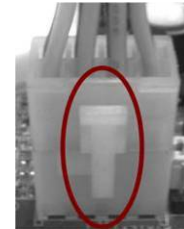




#### (4) ATX12V Type Power Connector (4-pin block):ATX12V



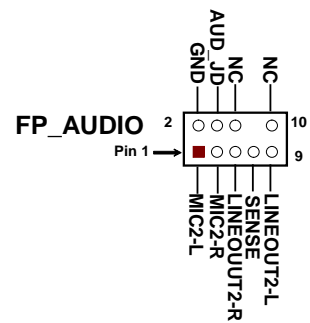
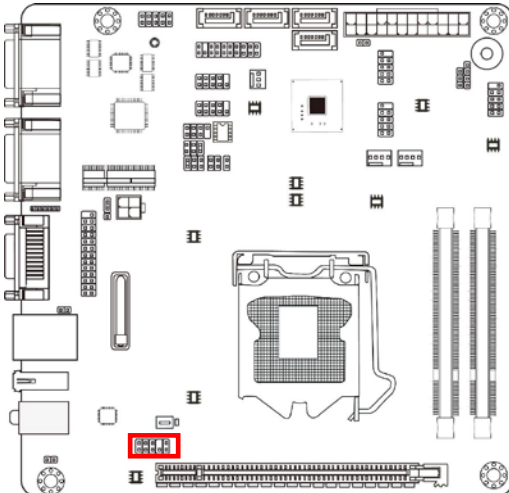
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V



## 2-2-2 Headers

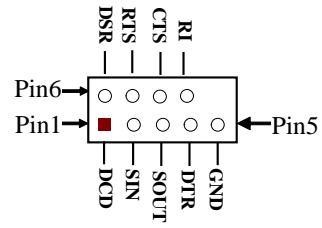
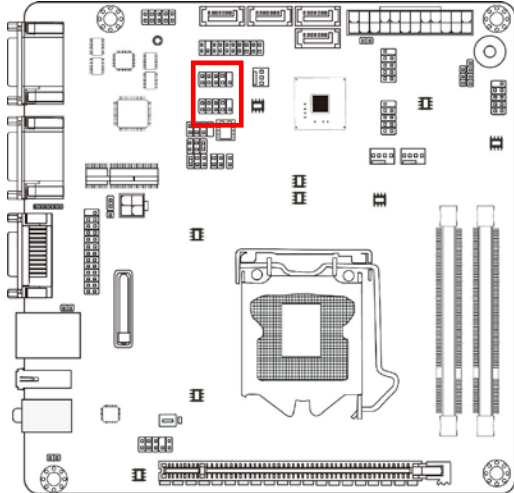
### (1) FP\_AUDIO (9-pin): Line-Out, MIC-In Header

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



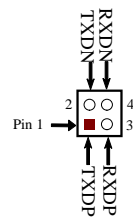
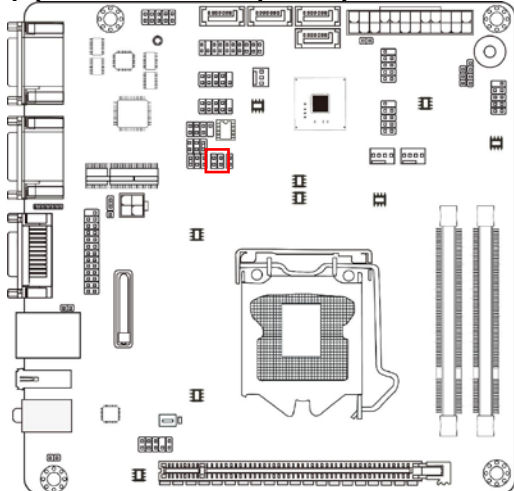
Line-Out, MIC Headers

## (2) COM5/COM6(9-Pin): Serial Port Header



COM Port 9-pin Block

## (3) TX-RXCOM6 (4-Pin): RS232/422/485 Header

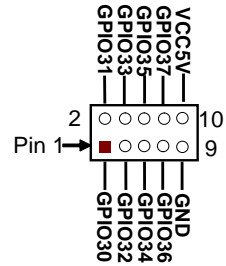
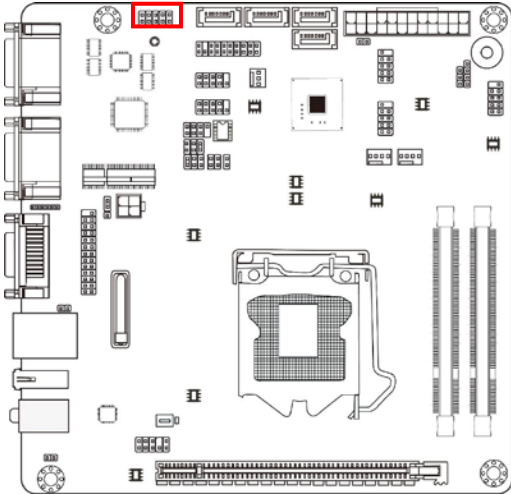


TX-RXCOM6 Header

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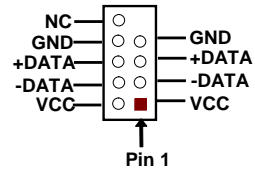
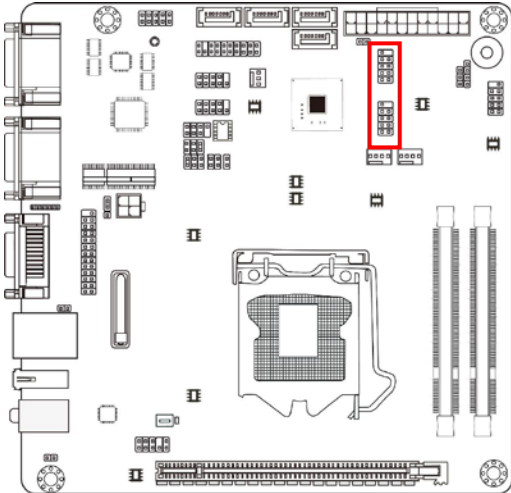
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#### (4) GPIO\_CON(10-pin): GPIO Header



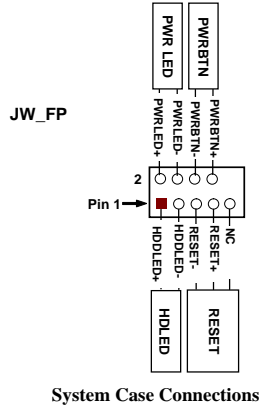
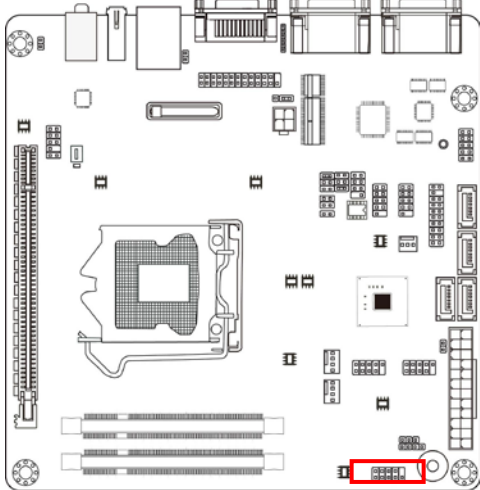
GPIO\_CON Header

#### (5) USB1/USB2 (9-pin): USB Port Headers



USB Port Header

**(6) JW-FP(9-pin): Front Panel Header**

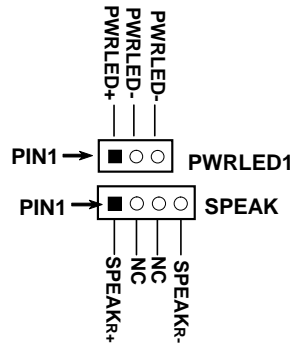
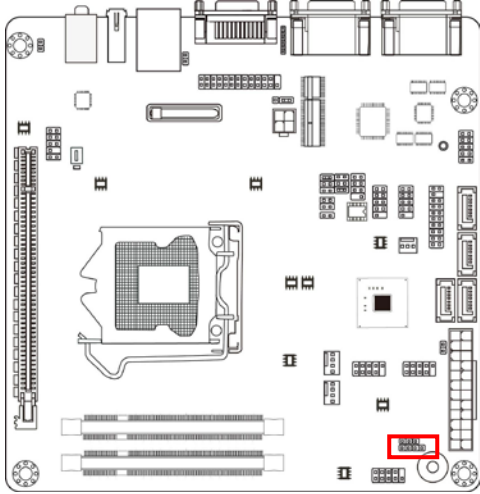


**(7) PWRLED (3-pin): Power LED Header**

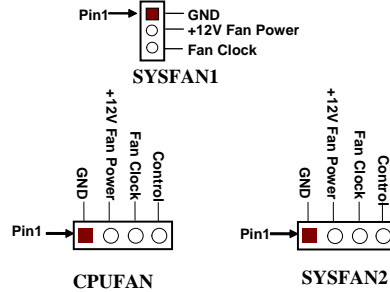
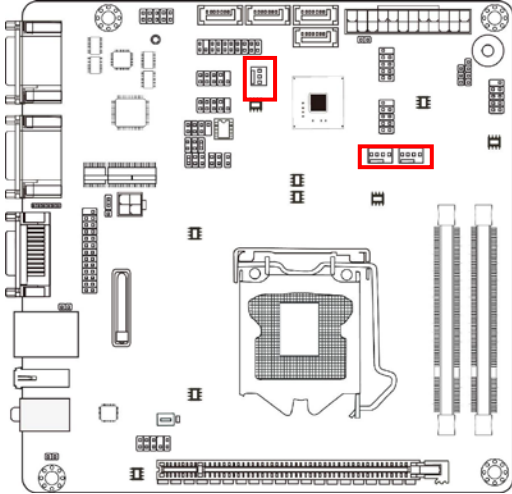
The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

**(8) SPEAK (4-pin): Speaker Header**

This 4-pin header connects to the case-mounted speaker. See the figure below.

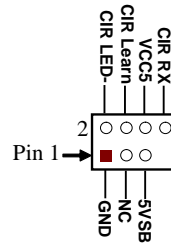
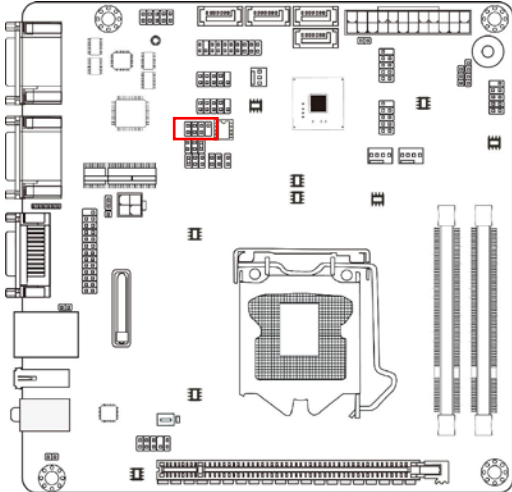


**(9) SYSFAN1 (3-pin), SYSFAN2 (4-pin), CPUFAN1 (4-pin): FAN Headers**



**FAN Headers**

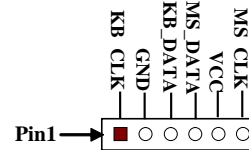
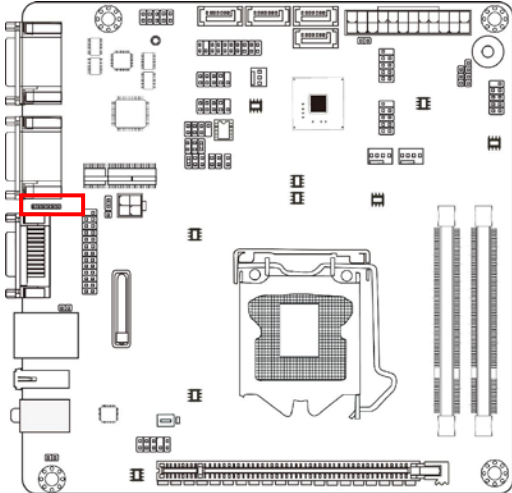
**(10) CIR (4-Pin): CIR Header**



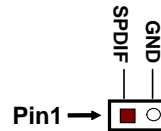
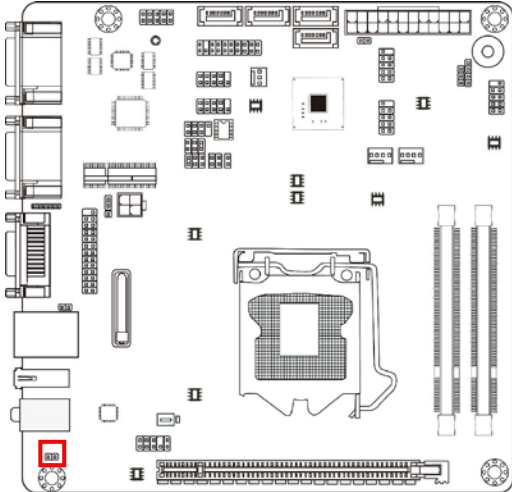
**CIR Header**

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**(11) KBMS (6-pin): PS/2 Keyboard & Mouse Header**

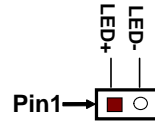
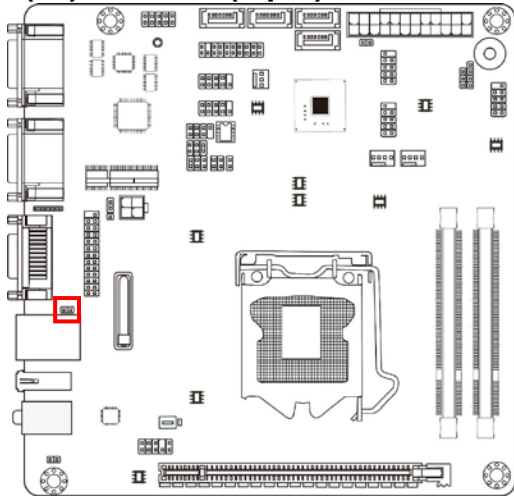


**(12) HDMI\_SPDIF (2-pin): HDMI-SPDIF Out header**



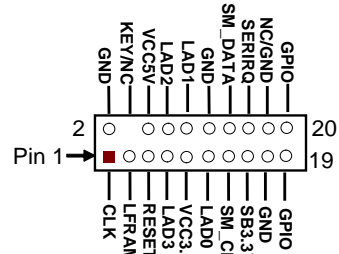
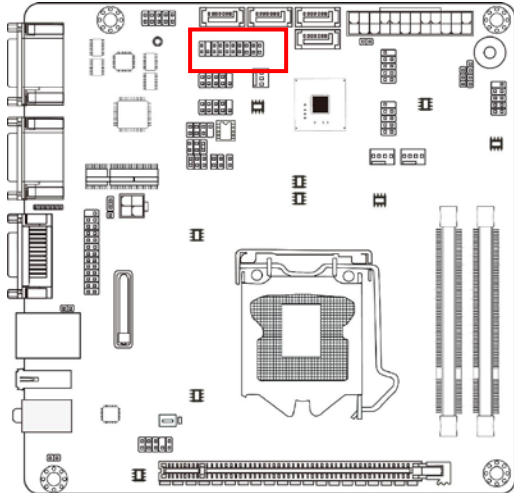
**HDMI\_SPDIF Header**

**(13) LANLED (2-pin): LANLED**



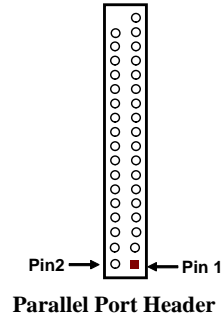
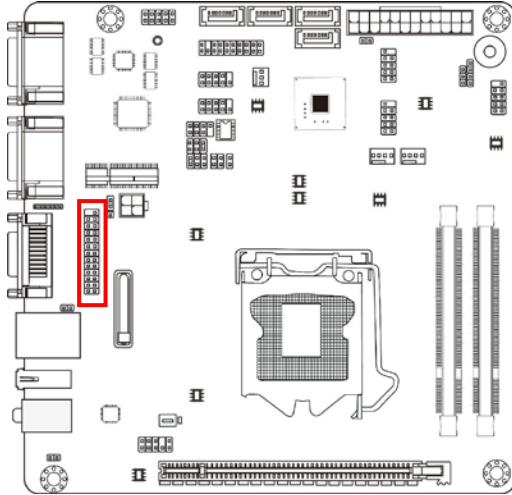
**LANLED Header**

**(14) TPM (19-pin): TPM Header**



**TPM Header**

## (15) PARALLEL (25-pin): Parallel Port Header



Pin NO.	Pin Definition	Pin NO.	Pin Definition
Pin 1	STB-	Pin 2	AFD-
Pin 3	PD0	Pin 4	ERR-
Pin 5	PD1	Pin 6	INIT-
Pin 7	PD2	Pin 8	SLIN-
Pin 9	PD3	Pin 10	GND
Pin 11	PD4	Pin 12	GND
Pin 13	PD5	Pin 14	GND
Pin 15	PD6	Pin 16	GND
Pin 17	PD7	Pin 18	GND
Pin 19	ACK-	Pin 20	GND
Pin 21	BUSY	Pin 22	GND
Pin 23	PE	Pin 24	GND
Pin 25	SLCT		



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# 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

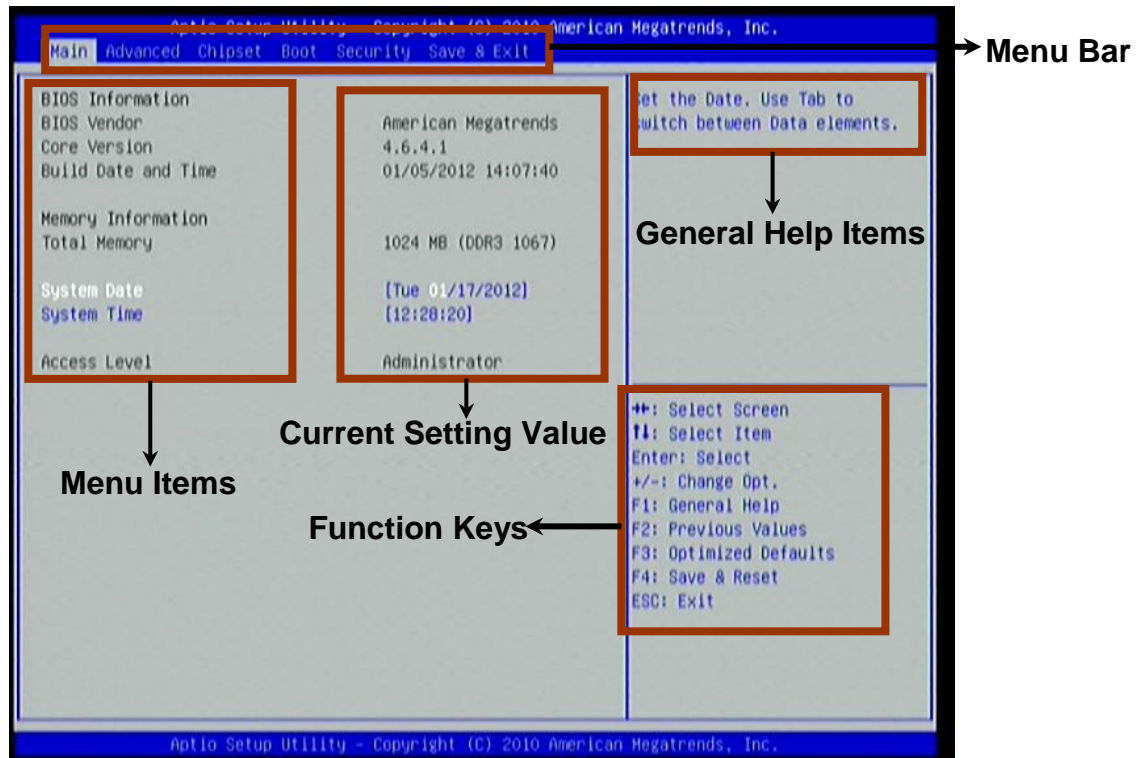
Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously 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:



BIOS Menu Screen

## 3-3 Function Key

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

- Press←→ (left, right) to select screen;

- 
- 
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
  - Press <Enter> to select.
  - Press <+>/<-> keys when you want to modify the BIOS parameters for the active option.
  - [F1]: General help.
  - [F2]: Previous value.
  - [F3]: Optimized defaults.
  - [F4]: Save & Reset.
  - Press <Esc> to quit the BIOS Setup.

## 3-4 Getting Help

### Main Menu

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

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

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

## 3-5 Menu Bar

There are six menu bars on top of BIOS screen:

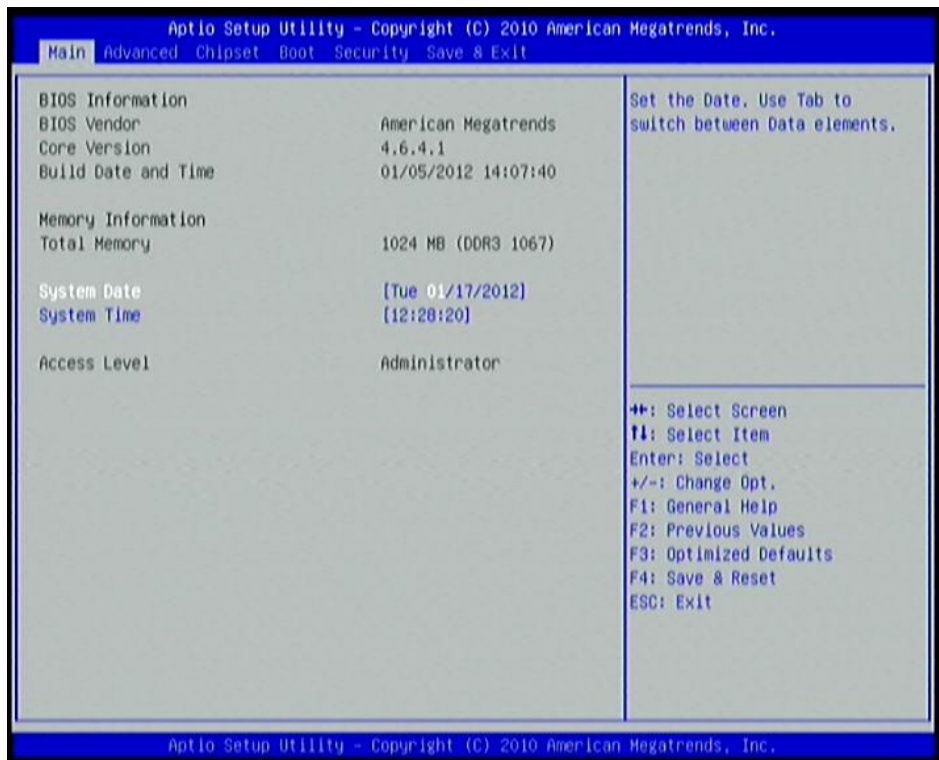
<b>Main</b>	To change system basic configuration
<b>Advanced</b>	To change system advanced configuration
<b>Chipset</b>	To change chipset configuration
<b>Boot</b>	To change boot settings
<b>Security</b>	Password settings
<b>Save &amp; Exit</b>	Save setting, loading and exit options.

---

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

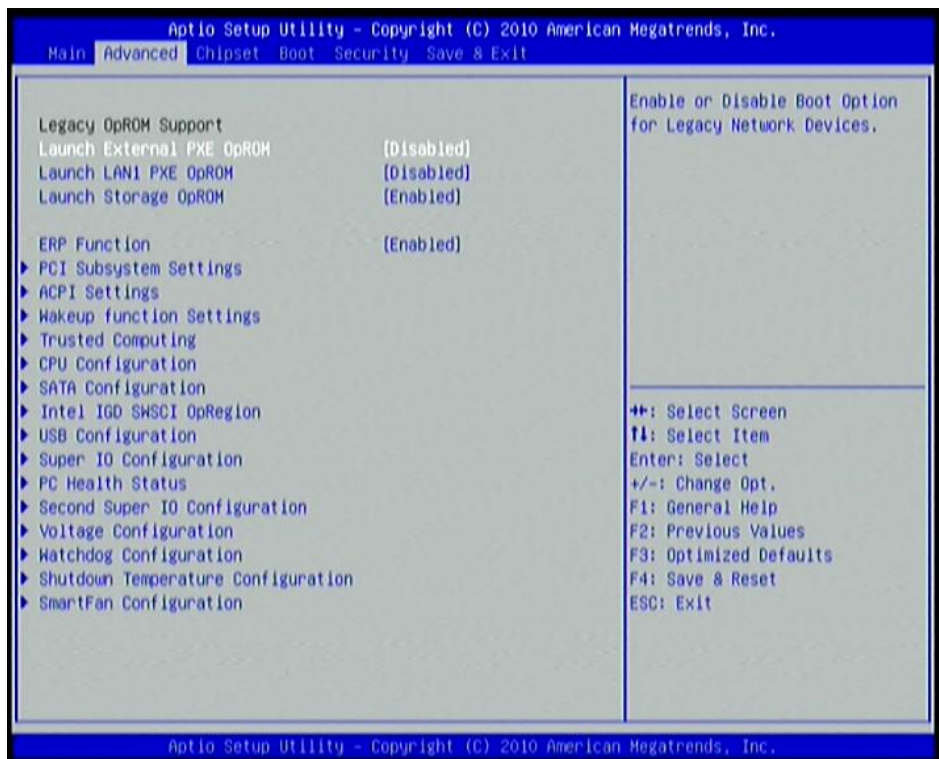
Set the date. Please use [TAB] to switch between data elements.

#### System Time

Set the time. Please use [TAB] to switch between time elements.

---

## 3-7 Advanced Menu



### Launch External PXE OpROM/Launch LAN1 PXE OpROM

Use this item to enable or disable boot option for legacy network devices.

### Launch Storage OpROM

Use this item to enable or disable boot option for legacy mass storage devices with option ROM.

### ERP Function

Use this item to enable or disable ERP function for this board. This item should be set as [Disabled] if you wish to have Active All Wakeup Function.

#### ► PCI Subsystem Settings

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Press [Enter] to enter and make settings for **PCI Express Settings** and **PCI Express GEN2 Settings**.

▶ **PCI Express Settings**

Press [Enter] to make settings for the following **PCI Express Device Register Settings**:

**Relaxed Ordering**

Use this item to enable or disable PCI express device relaxed ordering.

**Extended Tag**

If set as [Enabled] it will allow device to use 8-bit tag field as a requester.

**No Snoop**

Use this item to enable or disable PCI Express device No Snoop option.

**Maximum Payload**

Use this item to set maximum payload of PCI Express device or allow system BIOS to select the value.

**Maximum Read Request**

Use this item to set maximum read request size of PCI Express device or allow system BIOS to select the value.

**ASPM Support**

The optional settings: [Disabled]; [Auto]; [Force L0].

**Extended Synch**

If set as [Enabled] it will allow generation of extended synchronization patterns.

**Link Training Retry**

Use this item to define number of retry attempts software will take to restrain the link If previous training attempt was unsuccessful.

**Link Training Timeout(uS)**

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Use this item to define number of microseconds software will wait before polling 'Link Training' bit in link status register.

### **Unpopulated Links**

The optional settings are: [Keep Link On]; [Disable Link].

#### **► PCI Express GEN2 Settings**

**Press [Enter] to make settings for the following PCI Express GEN Devices Settings:**

#### ***PCI Express GEN2 Device Register Settings:***

##### **Completion Timeout**

The optional settings are: [Default]; [Shorter]; [Longer]; [Disabled].

##### **ARI Forwarding**

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

##### **AtomicOp Register Enable**

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

##### **AtomicOp Egress Blocking**

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

##### **ID0 Request Enable**

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

##### **ID0 Completion Enable**

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

##### **LTR Mechanism Enable**

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

##### **End-End TLP Prefix Blocking**

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

#### ***PCI Express GEN2 Link Register Settings***

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### **Target Link Speed**

The optional settings are: [Auto]; [Force to 2.5GT/s].

### **Selectable De-emphasis**

The optional settings are: [-3.5 dB]; [-6.0dB].

### **Clock Power Management**

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

### **Compliance SOS**

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

### **Hardware Autonomous Width**

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

### **Hardware Autonomous Speed**

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

## ▶ **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: [S1(CPU Stop Clock)]; [S3(Suspend to RAM)].

## ▶ **Wakeup Function Settings**

### **Wake System with Fixed Time**

Use this item to enable or disable system wake on alarm event. When set as [Enabled], system will wake on the hour/min/sec specified.

### **CIR Wakeup**

Use this item to enable or disable CIR wakeup.

### **PS2 KB/MS Wakeup**

Use this item to enable or disable PS2 KB/MS wakeup function.



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## **USB S3/S4 Wakeup**

Use this item to enable or disable USB S3/S4 wakeup function.

### ▶ **Trusted Computing**

**Press [Enter] to set TPM Configuration**

#### **TPM Support**

The optional settings are: [Disabled]; [Enabled]. Use this item to enable or disable TPM support. When set as [Enable], user can make settings for TPM State.

### ▶ **CPU Configuration**

#### **Socket 0 CPU Information**

**Press [Enter] to view detailed CPU information.**

#### **Active Processor Cores**

Use this item to select number of cores to enable in each processor package.

#### **Limit CPUID Maximum**

This item should be set as [Disabled] for Windows XP.

#### **Execute Disable Bit**

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

#### **Hardware Prefetcher**

Use this item to turn on/off the Mid Level Cache (L2) streamer prefetcher.

#### **Adjacent Cache Line Prefetch**

Use this item to turn on/off prefetching of adjacent cache lines.

#### **Intel Virtualization Technology**

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

When set as [Enabled], a VHM can utilize the additional hardware capabilities provided by Vanderpool Technology.

#### **Power Technology**

---

Use this item to enable power management features.

The optional settings are: [Disabled]; [Energy Efficient]; [Custom].

▶ **SATA Configuration**

**SATA Mode**

The optional settings are: [Disabled]; [IDE Mode]; [AHCI Mode].

**Serial-ATA Controller 0**

The optional settings are: [Disabled]; [Enhanced]; [Compatible].

**Serial-ATA Controller 1**

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

▶ **Intel IGD SWSCI OpRegion**

**IGD-Boot Type**

Use this item to select the video device which will be activated during POST. This has no effect if external graphics present.

The optional settings are: [VBIOS Default]; [CRT].

▶ **USB Configuration**

**Legacy USB Support**

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

**EHCI Hand-off**

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

**USB Transfer time-out**

Use this item to set the time-out value for control, bulk, and interrupt transfers.

**Device reset time-out**

Use this item to set USB mass storage device start unit command time-out.

**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

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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.

▶ **Super IO Configuration**

▶ **COM1 Port Configuration**

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

**Serial Port**

Use this item to enable or disable serial port.

**Change Settings**

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

▶ **COM2 Port Configuration**

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

**Serial Port**

Use this item to enable or disable serial port.

**Change Settings**

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

▶ **Parallel Port Configuration**

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

**Parallel Port**

Use this item to enable or disable parallel port(LPT/LPE).

**Change Settings**

Use this item to change the printer port mode.

**Device Mode**

Use this item to set serial port as RS232 or RS422/485.

---

## **CIR Controller**

Use this item to enable or disable CIR controller.

## **Case Open Detect**

Use this item to detect case has already open or not, show message in POST.

### ▶ **PC Health Status**

Press [Enter] to view hardware health status.

### ▶ **Second Super I/O Configuration**

#### ▶ **COM3 Port Configuration**

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

#### **Serial Port**

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

#### **Change Settings**

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

#### ▶ **COM4 Port Configuration**

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

#### **Serial Port**

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

#### **Change Settings**

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

#### ▶ **COM5 Port Configuration**

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

#### **Serial Port**

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

#### **Change Settings**

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

#### ▶ **COM6 Port Configuration**

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

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## **Serial Port**

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

## **Change Settings**

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

## **Serial Port Mode Select**

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

### ▶ **Voltage Configuration**

#### **DIMM Voltage**

The optional settings are: [1.50V]; [1.55V]; [1.60V]; [1.65V].

### ▶ **WatchDog Configuration**

#### **WatchDog Timer Control**

Use this item to enable or disable WatchDog Timer Control. When set as Enabled, the following sub-items shall appear:

#### **WatchDog Timer Value**

User can set a value in the range of 4 to 255.

#### **WatchDog Timer Unit**

The optional settings are: [Second];[Minute].

### ▶ **Shutdown Temperature Configuration**

Use this item to select system shutdown temperature.

### ▶ **SmartFan Configuration**

#### **SYSTEM FAN2 3/4 Pin Fan Select**

The optional settings are: [3 Pin]; [4 Pin].

#### **CPUFAN / SYSFAN1/SYSFAN2 SmartFan Mode**

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

#### **CPUFAN / SYSFAN1/SYSFAN2 Full Speed Temp**

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Use this item to set a degree for CPU/System fan1/ System fan2 FAN will run at full speed when above the specific temperature set.

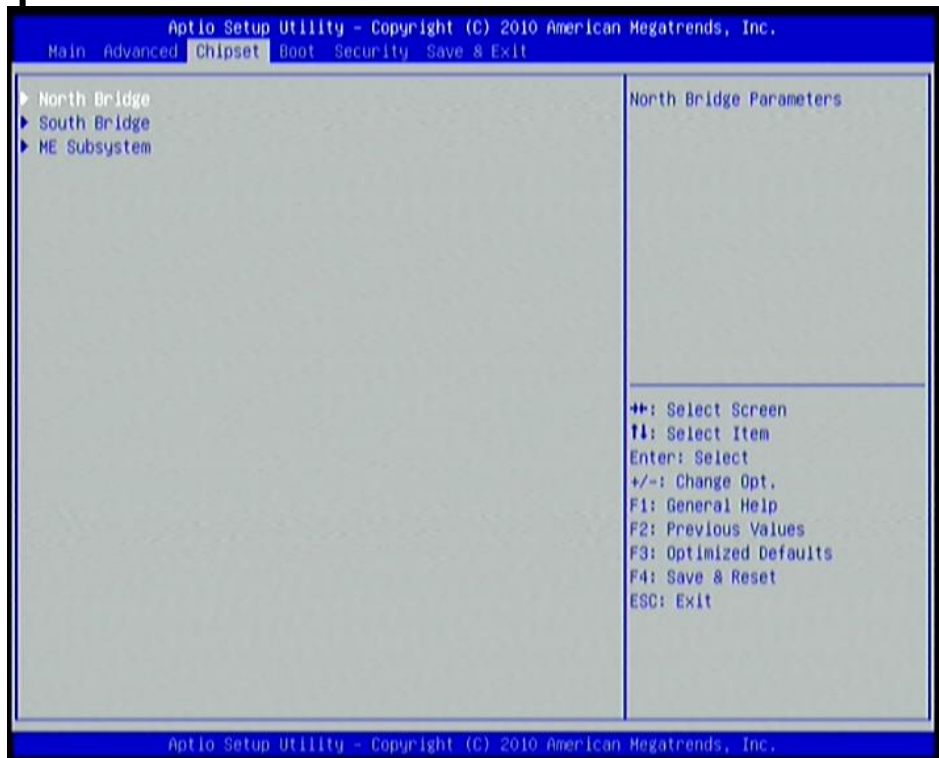
### **CPUFAN / SYSFAN1/SYSFAN2 Idle Temp**

Use this item to set a degree for CPU/System fan1/ System fan2. FAN will idle speed when below this temperature.

### **CPUFAN / SYSFAN1/SYSFAN2 Stop Temp**

Use this item to set a degree for CPU/System fan1/ System fan2. CPU FAN will stop when below this temperature.

## **3-8 Chipset Menu**



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▶ **North Bridge**

**LOW MMIO Align**

The optional settings are: [64M]; [1024M].

**VT-d**

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

**Initiate Graphics Adapter**

Select which graphics controller to use as the primary boot device. The optional settings are:[ IGD]; [PCI/IGD]; [PCI/PEG]; [PEG/IGD]; [PEG/PCI].

**IGD Memory**

Use this item to set IGD share memory size.

**IGD Multi-Monitor**

Use this item to enable or disable IGD multi-monitor by internal graphics device.

**PCI Express Port**

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

**PEG Force Gen1**

Use this item to enable or disable PCI Express port Force Gen1.

**Detect Non-Compliance Device**

Use this item to enable or disable Non-Compliance PCI Express device in PEG.

▶ **South Bridge**

***SB Chipset Configuration***

**Onboard Lan1 Device**

Use this item to enable or disable the PCI Express port in the chipset.

**Restore AC Power Loss**

Use this item to specify what state to go to when power is re-applied after a power failure (G3 State). The optional settings are: [Power Off]; [Power On]; [Last State].

---

### **SLP\_S4 Assertion Stretch Enable**

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

### **Deep Sx**

The optional settings are: [Disabled]; [Enabled in S5]; [Enabled in S4 and S5].

### ***Audio Configuration***

#### **Azalia HD Audio**

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

#### **Azalia Internal HDMI Codec**

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

### **High Precision Timer**

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

#### **▶ USB Configuration**

Press [Enter] to further setting USB port configuration.

#### **▶ ME subsystem**

##### **ME Subsystem**

Use this item to enable or disable ME subsystem.

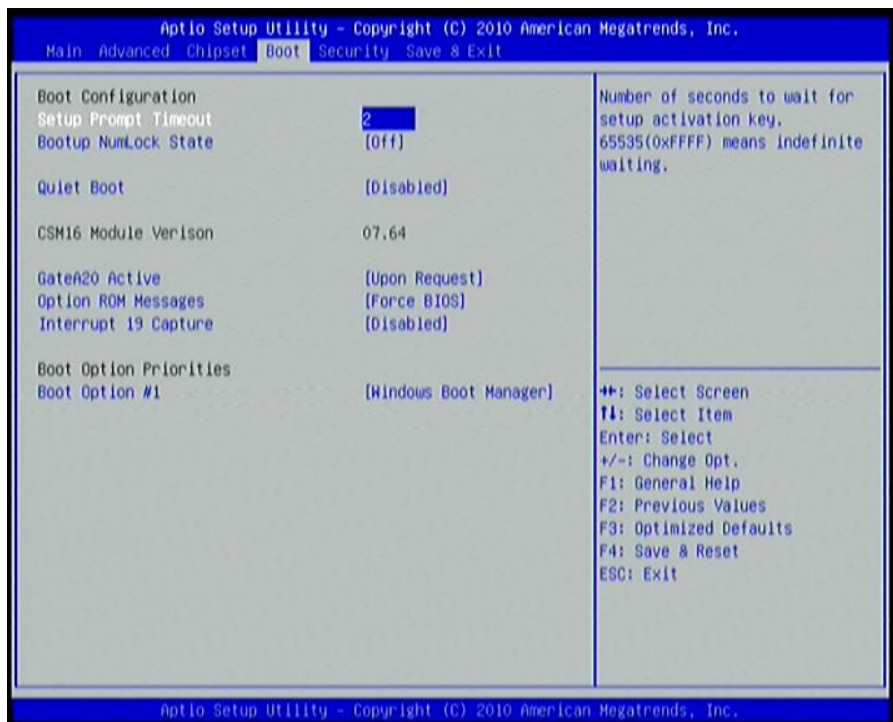
##### **ME Temporary Disable**

Use this item to enable or disable ME temporary disable help.



---

## 3-9 Boot Menu



### ***Boot Configuration***

#### **Setup Prompt Timeout**

Use this item to set number of seconds to wait for setup activation key.

#### **Bootup Numlock State**

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

#### **Quiet Boot**

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

#### **Gate A20 Active**

The optional settings are: [Upon Request]; [Always].

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## Option ROM Message

Use this item to set display mode for option ROM. The optional settings are: [Force BIOS]; [Keep Current].

## Interrupt 19 Capture

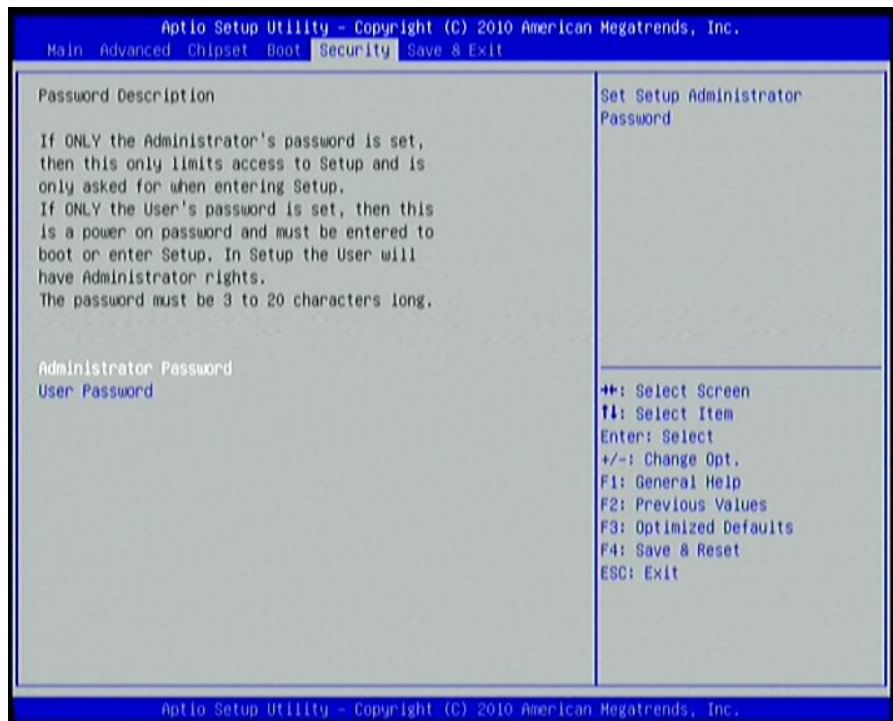
The optional settings are: [Enabled]; [Disabled].

## Boot Option Priorities

### Boot Option #1

The optional settings are: [Windows Boot Manager]; [Disabled].

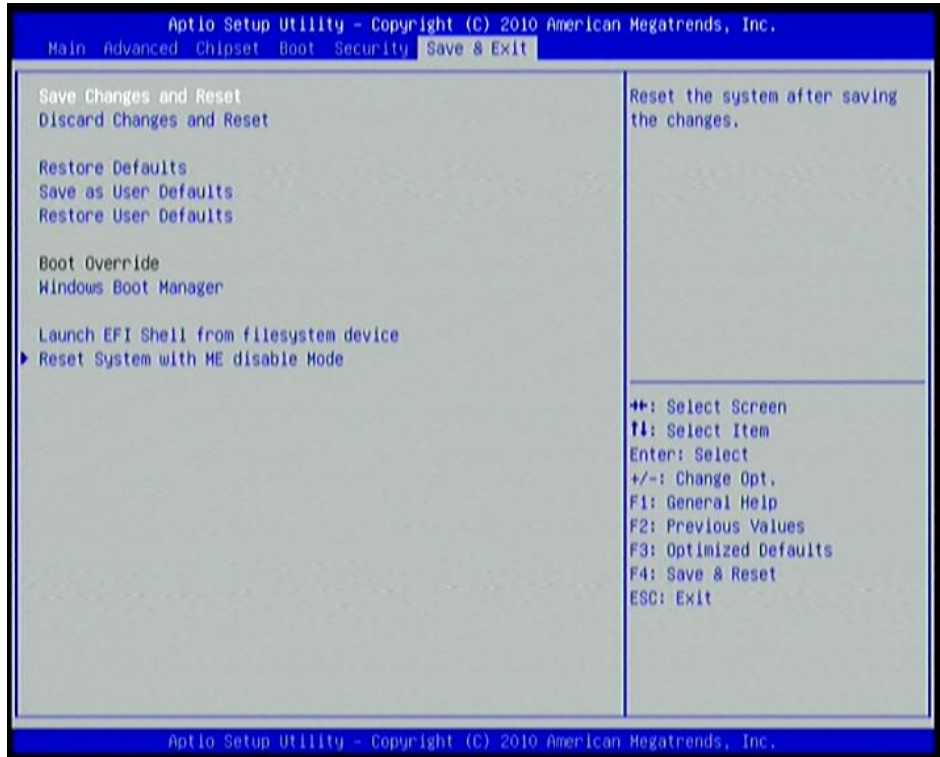
## 3-10 Security Menu



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

### 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.

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**Save as User Defaults**

Use this item to save the changes done so far as user defaults.

**Restore User Defaults**

Use this item to restore defaults to all the setup options.

**Launch EFI Shell from filesystem device**

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

**Reset System with ME disable Mode**

ME will run into the temporary disable mode. Ignore if ME Ignition FW.