

## FCC Information and Copyright

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### Dichiarazione di conformità sintetica

Ai sensi dell'art. 2 comma 3 del D.M. 275 del 30/10/2002

Si dichiara che questo prodotto è conforme alle normative vigenti e soddisfa i requisiti essenziali richiesti dalle direttive 2004/108/CE, 2006/95/CE e 1999/05/CE quando ad esso applicabili

### Short Declaration of conformity

We declare this product is complying with the laws in force and meeting all the essential requirements as specified by the directives 2004/108/CE, 2006/95/CE and 1999/05/CE whenever these laws may be applied

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# Chapter 1: Introduction

## 1.1 Before You Start

Thank you for choosing our product. Before you start installing the motherboard, please make sure you follow the instructions below:

- Prepare a dry and stable working environment with sufficient lighting.
  - Always disconnect the computer from power outlet before operation.
  - Before you take the motherboard out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use grounded wrist strap to remove the static charge.
  - Avoid touching the components on motherboard or the rear side of the board unless necessary. Hold the board on the edge, do not try to bend or flex the board.
  - Do not leave any unfastened small parts inside the case after installation. Loose parts will cause short circuits which may damage the equipment.
  - Keep the computer from dangerous area, such as heat source, humid air and water.
  - The operating temperatures of the computer should be 0 to 45 degrees Celsius.
  - To avoid injury, be careful of:
    - Sharp pins on headers and connectors
    - Rough edges and sharp corners on the chassis
    - Damage to wires that could cause a short circuit
- 

### Note

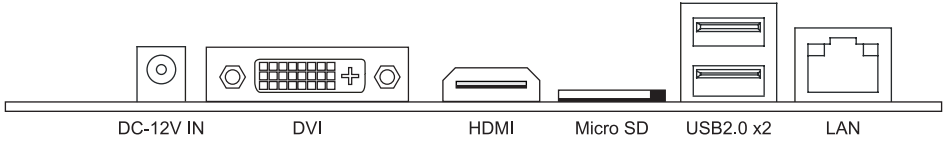
- » *The package contents may be different due to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.*
-

## 1.2 Specifications

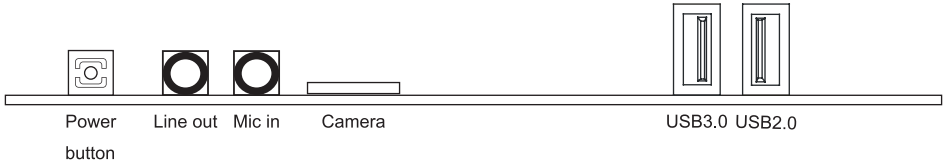
CPU	Intel® Atom™ Quad core x5-Z8350 Processor (2M Cache, up to 1.92 GHz)
Graphic	Integrated Intel® HD Graphics engine Dual independent displays (Extended mode) as below two: -- Integrated DVI-D -- Integrated HDMI
Main Memory	DDR3L 1600MHz SO-DIMM / 2GB/4GB, single channel ,1.35V *Registered DIMM or ECC DIMM is not supported
Storage	1x Built-in 32/64GB eMMC Flash Onboard 1x Built-in Micro SD connector
Networking	LAN: Realtek RTL8152B 10 / 100 Mb/s auto negotiation, Half / Full duplex capability Wireless: AMPAK AP6212 SIP Module (BCM43438) support 802.11 b/g/n, BT V4.0(colay AP6255, BCM43455)
Sound Codec	Realtek Codec ALC5645, supports Line-out/Mic-in
USB	Intel® Atom™ x5-Z8350 Processor supports 3xUSB 2.0 Port and USB 3.0 OTG: 3x Super Speed (SS) ports (Backward Compatible of USB 2.0 HS/FS/LS) Built-in 1x GL854 (1 to 7 port USB 2.0 Hub IC): 1x USB 3.0 OTG on the front/rear IO Type A connector(with 5V standby and The current is 900mA) 3x USB 2.0 Bus on the front/Rear IO Type A connector(with 5V and The current is 500mA) 1x USB 2.0 Bus internal header 2x5 pins 2.54mm(with 5V and The current is 500mA) 1x USB 2.0 bus for M.2 socket (3G Module) from SOC 1x USB 2.0 bus for S/IC CHIP 10/100M LAN/RTL8152B for LAN Port 1x USB 2.0 bus for USB2.0 to 4 x UART IC(Fintek F81534)
Rear Panel I/O	1x DC12V Jack connector 1x DVI-I connector (Digital signal only) 1x HDMI Type A connector 2x USB 2.0 connector (with 5V and The current is 500mA) 1x RJ45 LAN connector (10/100 Mb/s) 1x micro SD connector
Front Panel I/O	1x USB 3.0 connector (with 5V standby and The current is 900mA) 1x USB 2.0 connector(with 5V standby and The current is 500mA) 2x Audio Jack(Line-out & Mic-in) 1x Power Button(co-lay header) 1x 25pin FPC connector Integrated MIPI CSI 8M CAMERA connector
Internal I/O	1x M.2 B KEY socket for 3G Module 1x M.2 E KEY socket for 802.11b/g/n WIFI /BT Module 1x SIM connector 1x USB 2.0 Bus internal header 2x5 pins 2.54mm(with 5V and The current is 500mA) 1x 1*3 pins header, Clear CMOS Jumper setting 1x 1*2 pins header, Power button header 2x 1*2 pins wafer for Codec AL5645 class D 2.5Watt/Channel Amp Speaker 1x Antenna connector 4 x 2*5 pins wafer,COM Port 3x 1*3 pins COM port mode selection
Board Size	105 mm (W) x 146 mm (L), 3.5" SBC
Operation Temperature	0°C ~ 40°C
Storage Temperature	-40°C ~ 60°C
Relative Humidity	10% ~ 90% (non-condensing)
Certification	CE / FCC Pre-scan
OS Driver Support	Windows 10 (64 bits) OS , Ubuntu 16.04
RoHS Compliant	Yes

### 1.3 Rear / Front Panel Connectors

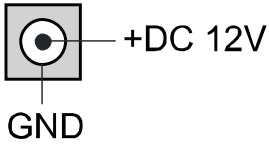
#### Rear



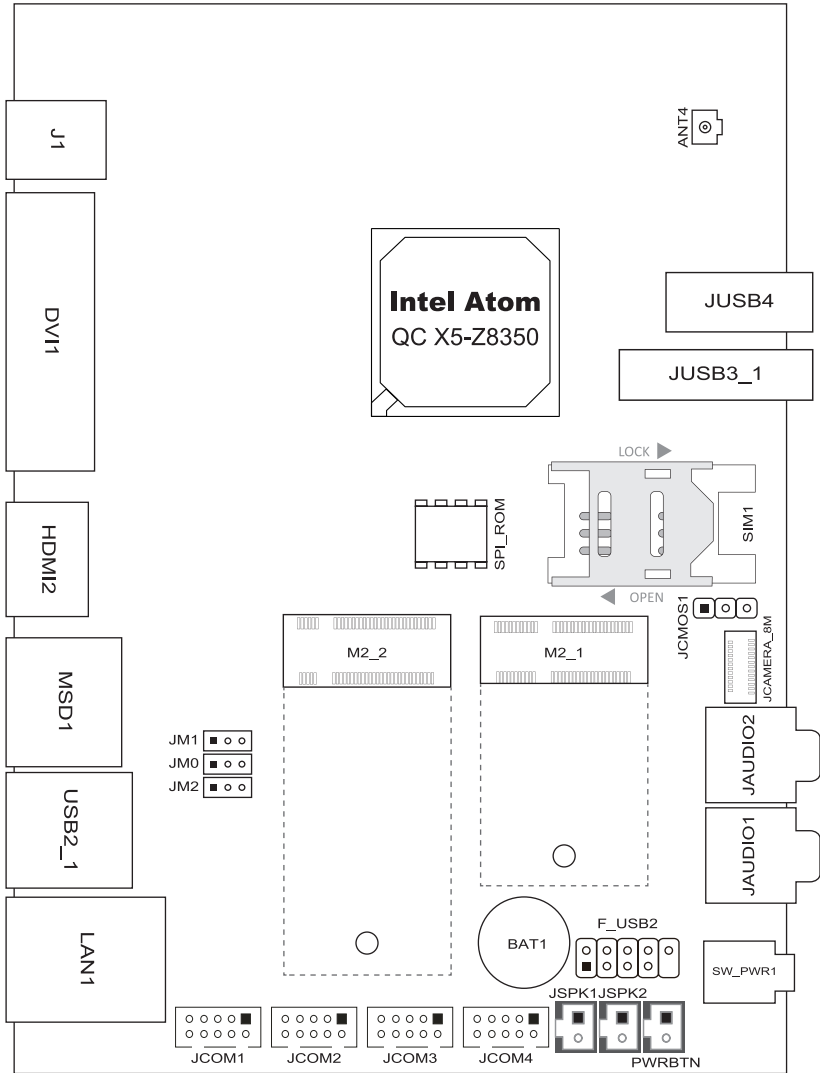
#### Front



J1: DC-12V IN Power Jack



## 1.4 Motherboard Layout



» ■ represents the 1st pin.

## Chapter 2: Hardware installation

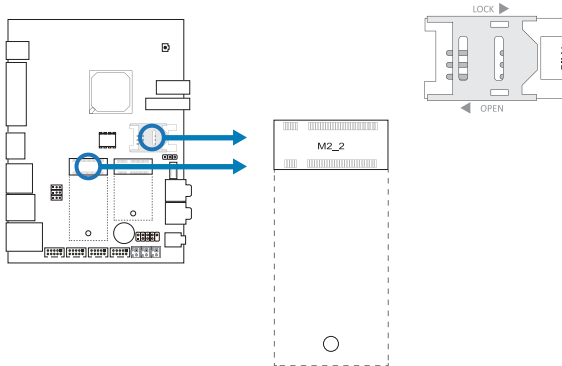
### 2.1 Central Processing Unit (CPU)

The mainboard includes an Intel® Celeron processor, and a cooler has been installed to provide sufficient cooling.

### 2.2 Jumpers / Slot / Headers / Connectors

#### M2\_2: Half-size mPCIe Slot

#### SIM1: SIM card socket



## Jumper Setting

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.

Pin opened



Pin closed

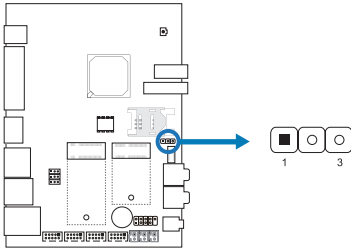


Pin 1-2 closed



## JCMOS1: Clear CMOS Jumper

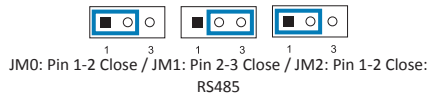
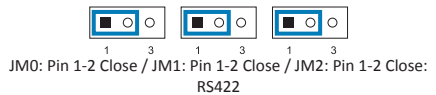
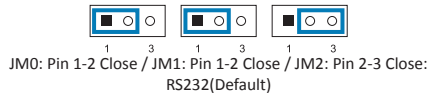
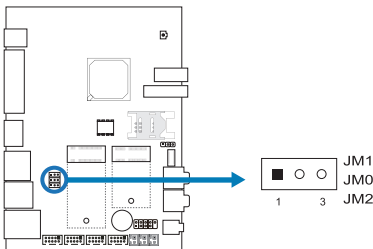
Placing the jumper on pin-2-3 allows user to restore the BIOS safe setting and the CMOS data. Please carefully follow the procedures to avoid damaging the motherboard.



### Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to “Pin 2-3 close”.
3. Wait for five seconds.
4. Set the jumper to “Pin 1-2 close”.
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

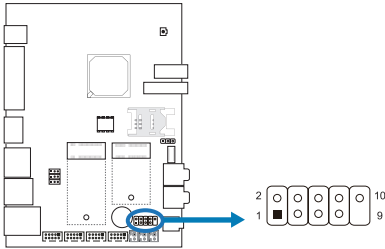
### JM0 / JM1 / JM2: COM port mode selection





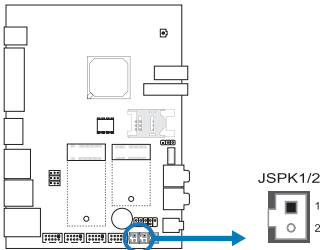
## F\_USB2: USB 2.0 Connectors

This header allows you to connect additional USB 2.0 port.



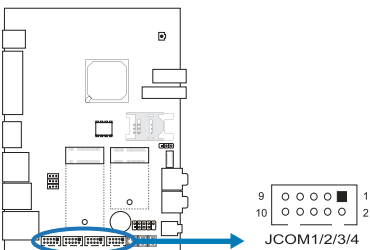
Pin	Assignment
1	USB_VCC
2	USB_VCC
3	DM2
4	DM1
5	DP2
6	DP1
7	GND
8	GND

## JSPK1/2: Audio Connector



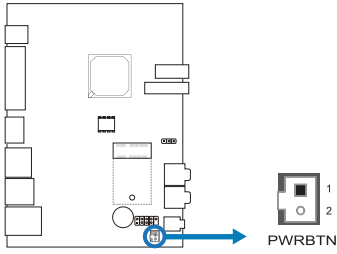
Left Speaker (JSPK1)	
Pin	Assignment
1	SPKRP
2	SPKPN
Right Speaker (JSPK2)	
Pin	Assignment
1	SPKLP
2	SPKLN

## JCOM1/2/3/4: COM Port Connector



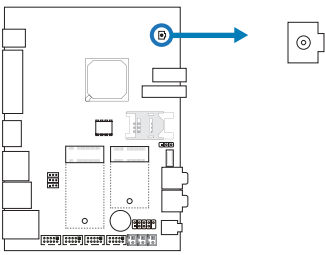
Pin	Assignment	Pin	Assignment
1	-PDCD	2	PSIN
3	PSOUT	3	-PDTR
5	GND	6	-PDSR
7	-PRTS	8	-PCTS
9	RI	10	NA

### PWRBTN: Power Button



Pin	Assignment
1	GND
2	PWRBTN

### ANT4: WIFI+BT Antenna



## Chapter 3: BIOS Setup

### Introduction

The purpose of this manual is to describe the settings in the AMI UEFI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to NVRAM.

UEFI BIOS determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in UEFI BIOS.

The rest of this manual will to guide you through the options and settings in UEFI BIOS Setup.

### Plug and Play Support

This AMI UEFI BIOS supports the Plug and Play Version 1.0A specification.

### EPA Green PC Support

This AMI UEFI BIOS supports Version 1.03 of the EPA Green PC specification.

### ACPI Support

AMI ACPI UEFI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

### PCI Bus Support

This AMI UEFI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

### DRAM Support

DDR3 SDRAM (Double Data Rate III Synchronous DRAM) is supported.

### Supported CPUs

This AMI UEFI BIOS supports the latest CPU.

### Using Setup

When starting up the computer, press <Del> during the Power-On Self-Test (POST) to enter the UEFI BIOS setup utility. In the UEFI BIOS setup utility, you will see General Help description at the top right corner, and this is providing a brief description of the selected item. Navigation Keys for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

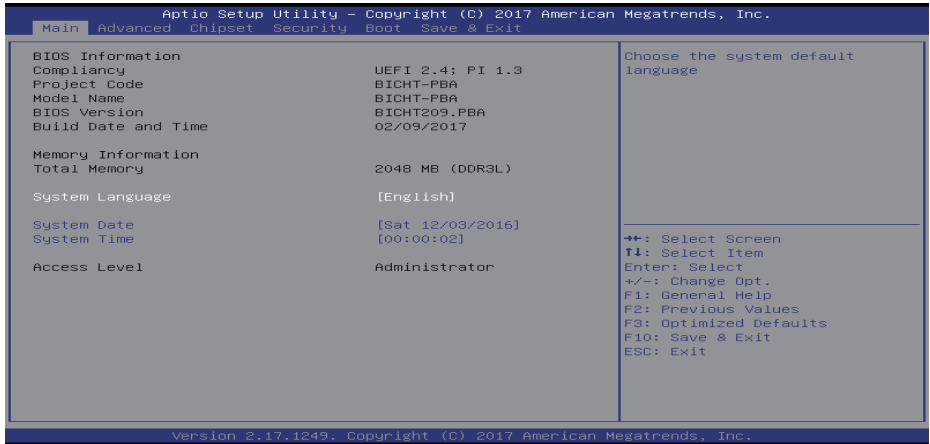
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#### » Note

- » *The default UEFI BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.*
  - » *For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described in this manual is for your reference only. The actual UEFI BIOS information and settings on board may be slightly different from this manual.*
  - » *The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.*
-

### 3.1 Main Menu

Once you enter AMI UEFI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.



#### BIOS Information

Shows system information including UEFI BIOS version, model name, marketing name, built date, etc.

#### Total Memory

Shows system memory size, VGA shard memory will be excluded.

#### System Language

Choose the system default language.

#### System Date

Set the system date. Note that the 'Day' automatically changes when you set the date.

#### System Time

Set the system internal clock.

#### Access Level

Shows the access level of current user.

## 3.2 Advanced Menu

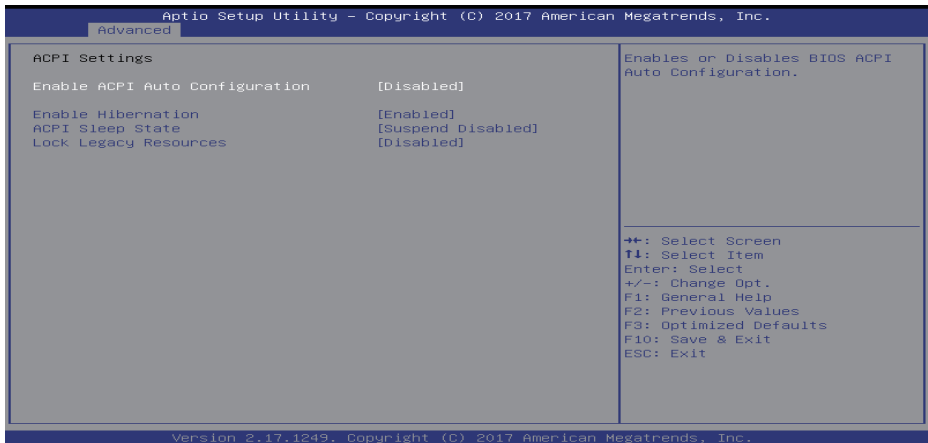
The Advanced Menu allows you to configure the settings of CPU, Power Management, and other system devices.

### Note

- » Beware of that setting inappropriate values in items of this menu may cause system to malfunction.
- » The options and default settings might be different by RAM or CPU models.



## ACPI Settings



### Enable ACPI Auto Configuration

This item enables or disables BIOS ACPI auto configuration function.

Options: Enabled (Default) / Disabled

- » The following items appear only when you set the Enable ACPI Auto Configuration function to [Disabled].

### Enable Hibernation

This item enables or disables system ability to hibernate (OS/S4 sleep state). This option may be not effective with some OSs.

Options: Enabled (Default) / Disabled

### ACPI Sleep State

This item selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

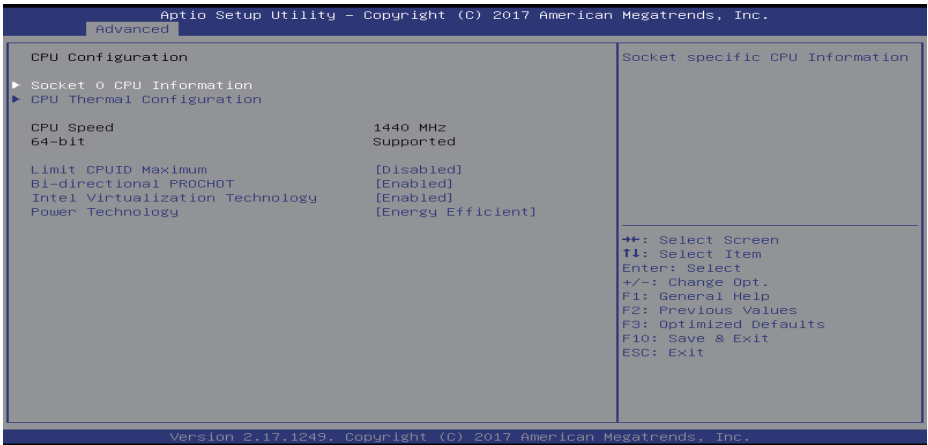
Options: Suspend Disabled (Default)

### Lock Legacy Resources

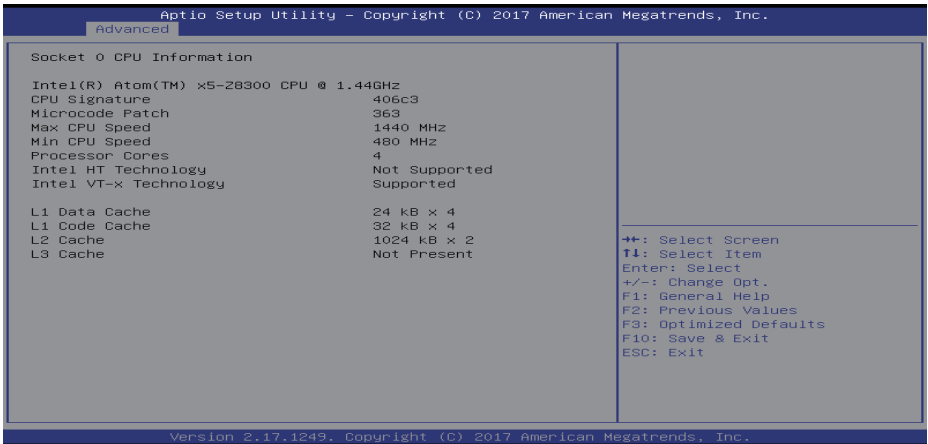
The item enables or disables Lock of Legacy Resources.

Options: Disabled (Default) / Enabled

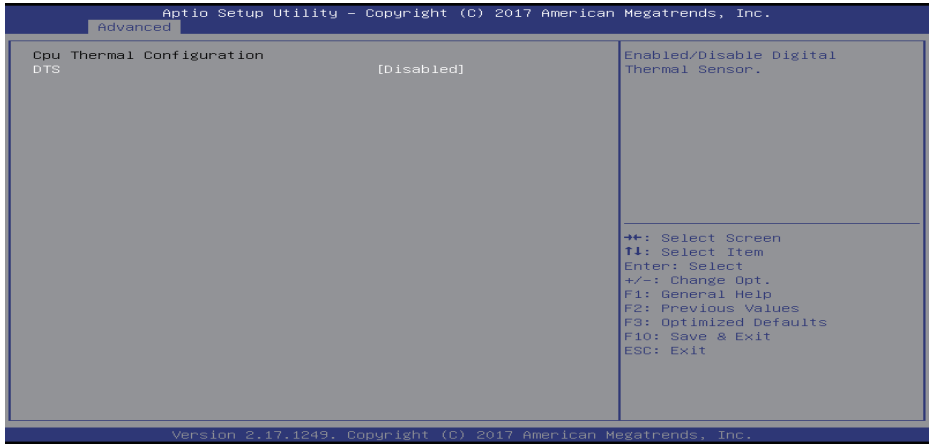
## CPU Configuration



## Socket 0 CPU Information



## CPU Thermal Configuration



### DTS

This item Enabled or Disable Digital Thermal Sensor.

Options: Disabled (Default) / Enabled

### Limit CPUID Maximum

This item disabled for Windows XP.

Options: Disabled (Default) / Enabled

### Bi-directional PROCHOT

When a processor thermal sensor trips (either core), the PROCHOT# will be driven. If bi-direction is enabled, external agents can drive PROCHOT# to throttle the processor.

Options: Enabled (Default) / Disabled

### Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Options: Enabled (Default) / Disabled

### Power Technology

This item enable the power management features.

Options: Energy Efficient (Default) / Disabled / Custom

» *The following items appear only when you set the Power Technology function to [Custom].*

### EIST

This item Enabled or Disabled Intel SpeedStep.

Options: Enabled (Default) / Disabled

### Turbo Mode

This item allows you to control the Turbo Mode.

Options: Enabled (Default) / Disabled

### P-STATE Coordination

This item allows you to change P-STATE Coordination type.

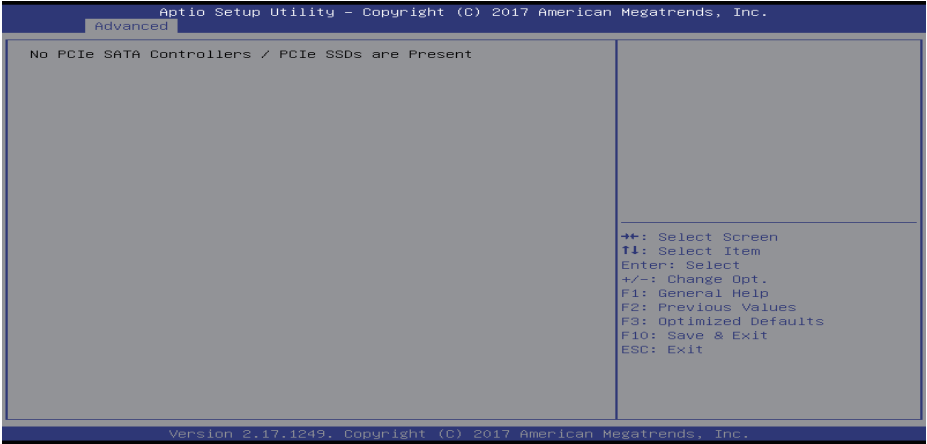
Options: HW\_ALL (Default) / SW\_ALL / SW\_ANY

### Package C State limit

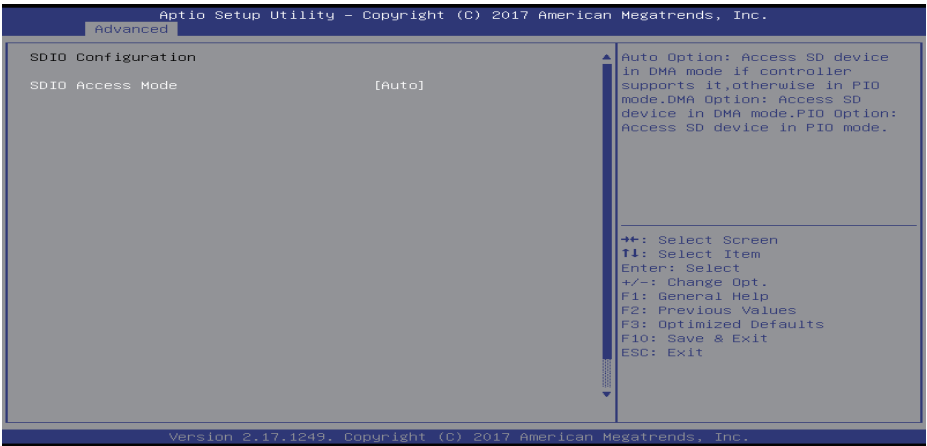
This item allows you to set Package C State limit.

Options: C1 (Default) / C3 / C6 / C7

## Offboard SATA Controller Configuration



## SDIO Configuration



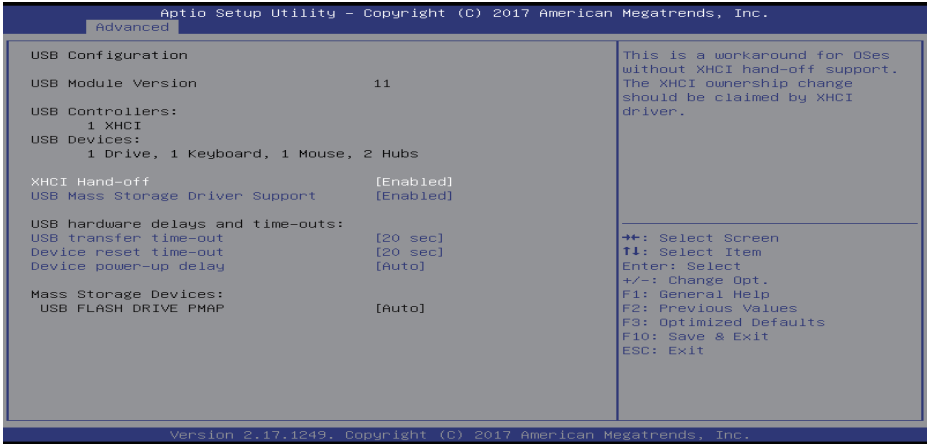
### SDIO Access Mode

This item allows you to control the SDIO Access Mode. Auto Option: Access SD device in DMA mode if controller supports it, otherwise in PIO mode. DMA Option: Access SD device in DMA mode. PIO Option: Access SD device in PIO mode.

Options: Auto (Default) / ADMA / SDMA / PIO



## USB Configuration



### XHCI Hand-Off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by EHCI driver.

Options: Enabled (Default) / Disabled

### USB Mass Storage Driver Support

This item enable/disable USB Mass Storage Driver Support.

Options: Enabled (Default) / Disabled

### USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

Options: 20 sec (Default) / 1 sec / 5 sec / 10 sec

### Device reset time-out

The item sets USB mass storage device Start Unit command time-out.

Options: 20 sec (Default) / 10 sec / 30 sec / 40 sec

### Device power-up delay

"Auto" uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

Options: Auto (Default) / Manual

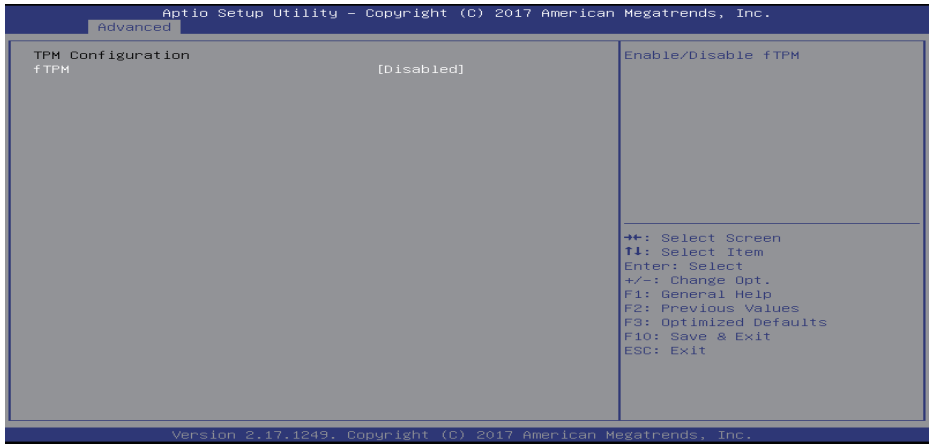
» *The following items appear only when you set the Device power-up delay function to [Manual].*

#### Device power-up delay in seconds

Delay range is 1 ~ 40 seconds, in one second increments.

Options: 5 (Default)

## Platform Trust Technology



### fTPM

This item enable/disable fTPM.

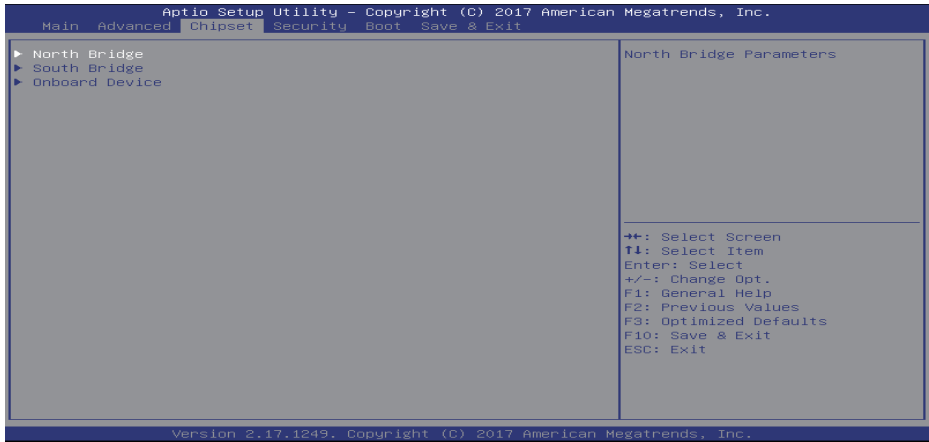
Options: Disabled (Default) / Enabled

### 3.3 Chipset Menu

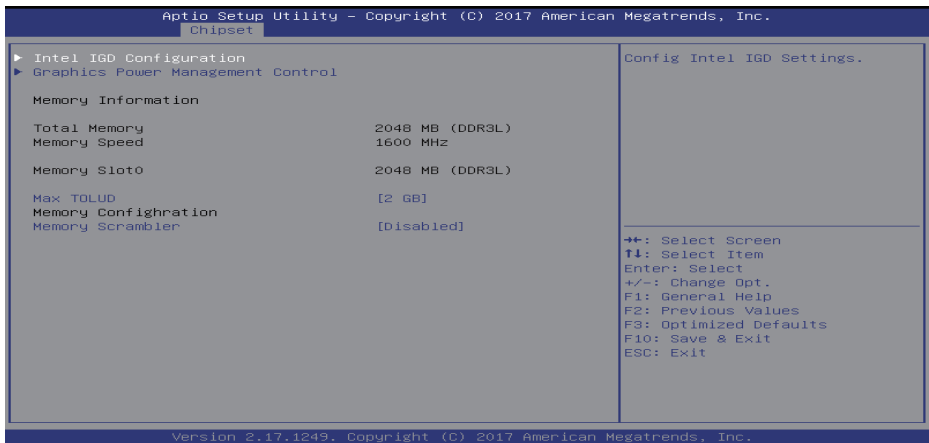
This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

#### Note

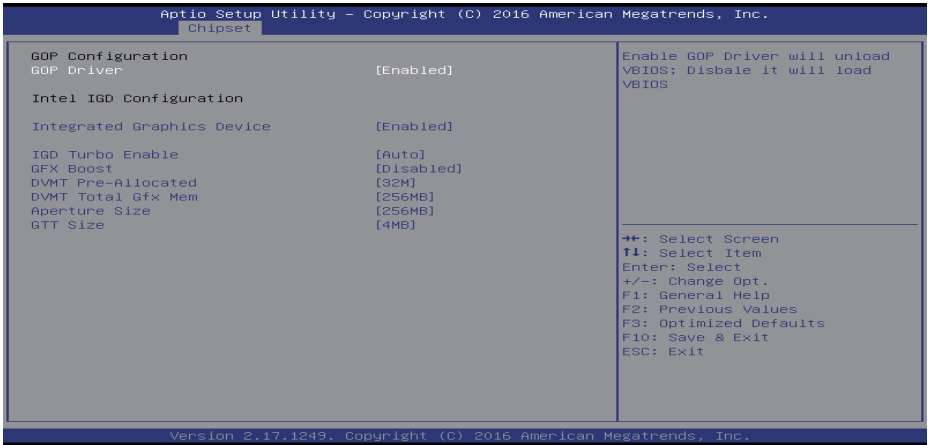
» Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



### North Bridge



## Intel IGD Configuration



### GOP Driver

This item enable GOP Driver will unload VBIOS, disbale it will load VBIOS.

Options: Enabled (Default) / Disabled

### Integrated Graphics Device

This item enable/disable Integrated Graghics Device.

Options: Enabled (Default) / Disabled

### IGD Turbo Enable

This item select the IGD Turbo feature, if Auto selected, IGD Turbo will only be enabled when SOC stepping is B0 or above.

Options: Auto (Default) / Disabled / Enabled

### GFX Boost

This item enable/disable GFX Boost.

Options: Disabled (Default) / Enabled

### DVMT Pre-Allocated

This item select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

Options: 32M (Default) / 64M / 96M / 128M / 160M / 192M / 224M / 256M / 288M / 320M / 352M / 384M / 416M / 448M / 480M / 512M

### DVMT Total Gfx Mem

This item select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.

Options: 256MB (Default) / 128MB / Max

### Aperture Size

This item select the Aperture Size.

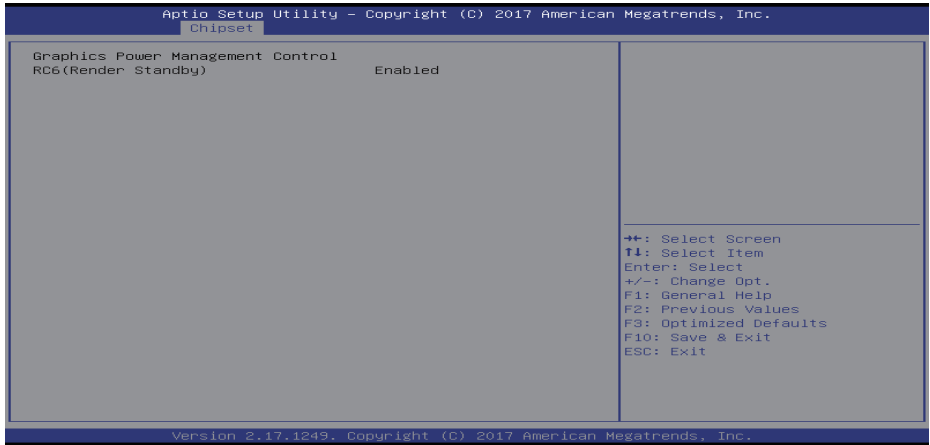
Options: 256MB (Default) / 128MB / 512MB

### GTT Size

This item select the GTT Size.

Options: 4MB (Default) / 2MB / 8MB

## Graphics Power Management Control



### Max TOLUD

This item sets Maximum Value of TOLUD.

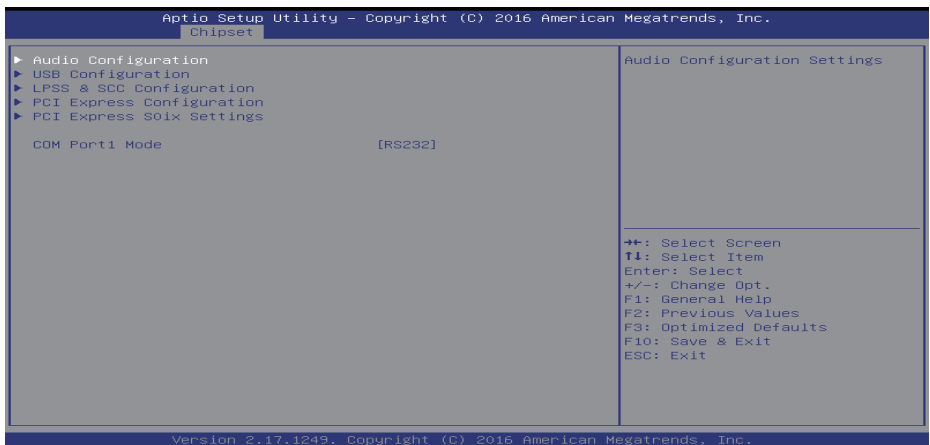
Options: 2 GB (Default) / Dynamic / 1 GB / 1.25 GB / 1.5 GB / 1.75 GB / 2.25 GB / 2.5 GB / 2.75 GB / 3 GB

### Memory Scrambler

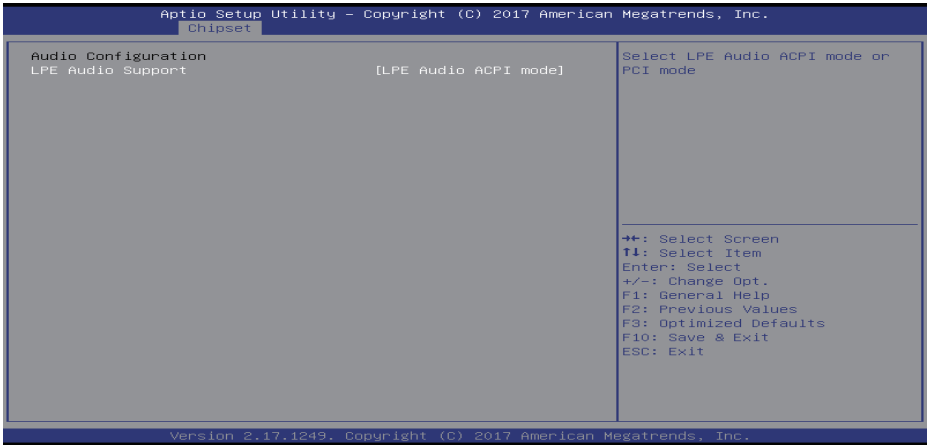
This item enables or disables memory scrambler support.

Options: Disabled (Default) / Enabled

## South Bridge



## Audio Configuration

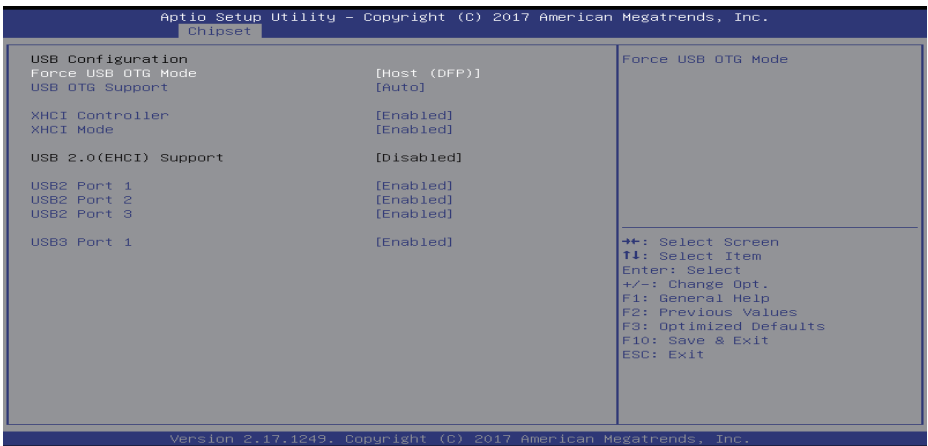


### LPE Audio Support

This item select LPE Audio ACPI mode or PCI mode.

Options: LPE Audio ACPI mode (Default) / Disabled / LPE Audio PCI mode

## USB Configuration



### Force USB OTG Mode

This item Force USB Mode.

Options: Host (DFP) (Default) / Slave (UDP)

### USB OTG Support

This item enable/disable USB OTG Support.

Options: Auto (Default) / ACPI mode / PCI mode / Disabled

### XHCI Controller

This item enable/disable XHCI Controller.

Options: Enabled (Default) / Disabled

**XHCI Mode**

This item Mode of operation of XHCI Controller.

Options: Enabled (Default) / Auto / Disabled / Smart Auto

**USB 2.0(EHCI) Support**

Options: Disabled (Default)

**USB2 Port 1/2/3**

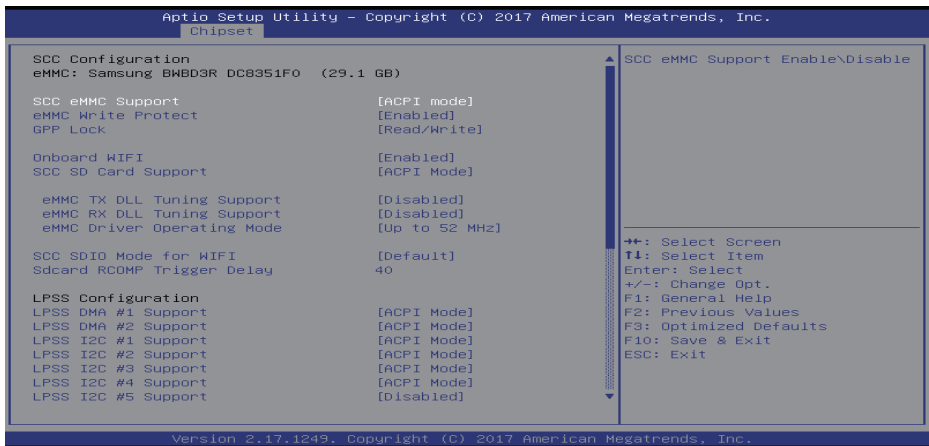
This item enable/disable USB Port 1/2/3

Options: Enabled (Default) / Disabled

**USB3 Port 1**

This item enable/disable USB Port 1

Options: Enabled (Default) / Disabled

**LPSS & SCC Configuration****SCC eMMC Support**

This item enable/disable SCC eMMC Support.

Options: ACPI mode (Default) / PCI mode / Disabled

**eMMC Write Protect**

This item enable/disable eMMC Write Protect.

Options: Enabled (Default) / Disabled

**GPP Lock**

This item enable GPP Lock.

Options: Read/Write (Default) / Read Only

**Onboard WIFI**

This item allows you to control Onboard WIFI.

Options: Enabled (Default) / Disabled

**SCC SD Card Support**

This item enable/disable SCC SD Card Support.

Options: ACPI Mode (Default) / PCI Mode / Disabled

**eMMC TX DLL Tuning Support**

This item enable/disable eMMC TX DLL Tuning Support.

Options: Disabled (Default) / Enabled

### **eMMC RX DLL Tuning Support**

This item enable/disable eMMC RX DLL Tuning Support.

Options: Disabled (Default) / Enabled

### **eMMC Driver Operating Mode**

This item selects the operating frequency in eMMC Driver.

Options: Up to 52 MHz (Default) / Auto Detect / Up to 26 MHz / Basic Frequency

### **SCC SDIO Mode for WIFI**

This item selects SDIO mode for WIFI.

Options: Default (Default) / DDR50

### **Sdcard RCOMP Trigger Delay**

This item selects RCOMP Trigger Delay.

Options: 40 (Default)

### **LPSS DMA #1/#2 Support**

This item enable/disable LPSS DMA #1/#2 Support.

Options: ACPI Mode (Default) / PCI Mode / Disabled

### **LPSS I2C #1/#2/#3/#4/#7 Support**

This item enable/disable LPSS I2C #1/#2/#3/#4/#7 Support.

Options: ACPI Mode (Default) / PCI Mode / Disabled

### **LPSS I2C #5/#6 Support**

This item enable/disable LPSS I2C #5/#6 Support.

Options: Disabled (Default) / ACPI Mode / PCI Mode

### **Onboard Bluetooth**

This item allows you to control Onboard Bluetooth.

Options: Enabled (Default) / Disabled

### **LPSS HSUART #2 Support**

This item enable/disable LPSS HSUART #2 Support.

Options: Disabled (Default) / ACPI Mode / PCI Mode

### **LPSS PWM #1 Support**

This item enable/disable LPSS PWM #1 Support.

Options: ACPI Mode (Default) / PCI Mode / Disabled

### **LPSS PWM #2 Support**

This item enable/disable LPSS PWM #2 Support.

Options: Disabled (Default) / ACPI Mode / PCI Mode

### **LPSS SPISupport**

This item enable/disable LPSS SPISupport.

Options: ACPI Mode (Default) / PCI Mode / Disabled

### **Bluetooth Module Selection**

This item sets Bluetooth Module Selection.

Options: BCM (Default) / STP / LNP

### **Bluetooth Devices**

This item sets Bluetooth Devices.

Options: BCM2E7B (Default) / BCM2E64 / BCM2E3A

### **RVP Camera Selection**

This item select Camera Device.

Options: Cynthiana\_2B (Default) / Cynthiana\_2B\_CR



**MRD Front Camera Selection**

This item select MRD Front Camera Device.

Options: OV2680 (Default) / GC0310

**MRD Rear Camera Selection**

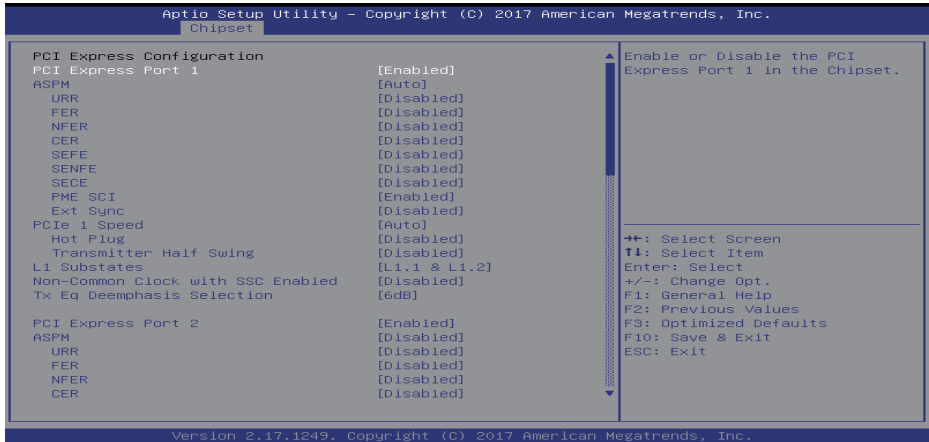
This item select MRD Front Camera Device.

Options: OV8858 (Default) / HM5040

**GPS**

This item enable/disable GPS.

Options: Enabled (Default) / Disabled

**PCI Express Configuration****PCI Express Port 1/2/3/4**

This item enable or disable the PCI Express Port 1 in the Chipset.

Options: Enabled (Default) / Disabled

**[PCI Express Port 1] - ASPM**

This item set the ASPM Level.

Options: Auto (Default) / Disabled / L0s / L1 / L0sL1

**[PCI Express Port 2/3/4] - ASPM**

This item set the ASPM Level.

Options: Disabled (Default) / Auto / L0s / L1 / L0sL1

**[PCI Express Port 1/2/3/4] - URR**

This item enable/disable PCI Express Unsupported Request Reporting.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - FER**

This item enable/disable PCI Express Device Fatal Error Reporting.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - NFER**

This item enable/disable PCI Express Device Non-Fatal Error Reporting.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - CER**

This item enable/disable PCI Express Device Correctable Error Reporting.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - SEFE**

This item enable/disable Root PCI Express System Error on Fatal Error.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - SENFE**

This item enable/disable Root PCI Express System Error on Non-Fatal Error.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - SECE**

This item enable/disable Root PCI Express System Error on Correctable Error.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - PME SCI**

This item enable/disable PCI Express PME SCI.

Options: Enabled (Default) / Disabled

**[PCI Express Port 1/2/3/4] - Ext Sync**

This item enable/disable PCI Express Ext Sync.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - PCIe 1 Speed**

This item Configure PCIe Port 1 Speed.

Options: Auto (Default) / Gen 2 / Gen 1

**[PCI Express Port 1/2/3/4] - Hot Plug**

This item enable/disable PCI Express Hot Plug.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - Transmitter Half Swing**

This item enable/disable Transmitter Half Swing.

Options: Disabled (Default) / Enabled

**[PCI Express Port 1] - L1 Substates**

This item sets PCI Express L1 Substates.

Options: L1.1 & L1.2 (Default) / Disabled / L1.1 / L1.2

**[PCI Express Port 2/3/4] - L1 Substates**

This item sets PCI Express L1 Substates.

Options: Disabled (Default) / L1.1 & L1.2 / L1.1 / L1.2

**[PCI Express Port 1/2/3/4] - Non-Common Clock with SSC Enabled**

Assume the root port is operating at non-common clock with SSC enabled.

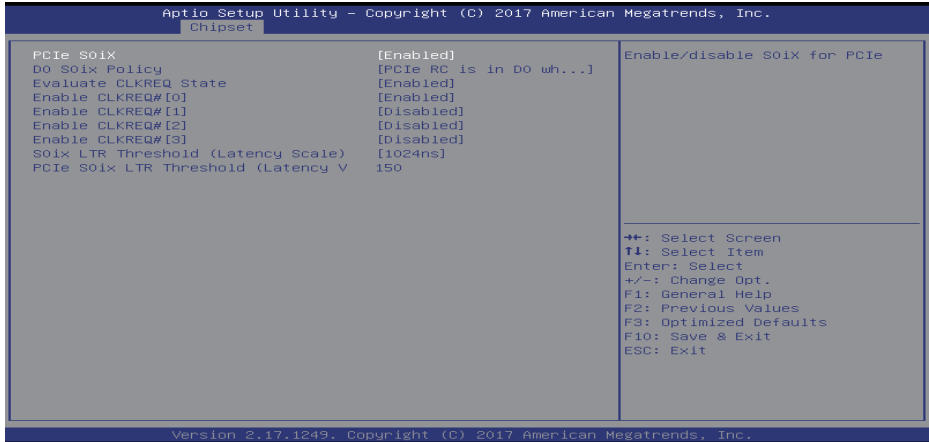
Options: Disabled (Default) / Enabled

**[PCI Express Port 1/2/3/4] - Tx Eq Deemphasis Selection**

This item select the level of de-emphasis for an upstream component.

Options: 6dB (Default) / 3.5dB

## PCI Express S0ix Settings



### PCIe S0ix

This item enable/disable S0ix for PCIe.

Options: Enabled (Default) / Disabled

### D0 S0ix Policy

This item PCIe D0 S0ix Policy.

Options: PCIe RC is in D0 when entering S0IX (Default) / PCIe RC shall be in D3 / S0i1 is the deepest S0ix state / Reserved

### Evaluate CLKREQ State

This item enable/disable evaluation of CLKREQ state.

Options: Enabled (Default) / Disabled

### Enable CLKREQ#[0]

This item CLKREQ#[X] shall be evaluated during PCIe in D0 S0ix entry and exit criteria checking.

Options: Enabled (Default) / Disabled

### Enable CLKREQ#[1/2/3]

This item CLKREQ#[X] shall be evaluated during PCIe in D0 S0ix entry and exit criteria checking.

Options: Disabled (Default) / Enabled

### S0ix LTR Threshold (Latency Scale)

This item PCIe S0ix LTR Threshold : Latency Scale.

Options: 1024ns (Default) / 1ns / 32ns / 32,768ns / 1,048,576ns / 33,554,432ns

### PCIe S0ix LTR Threshold (Latency V)

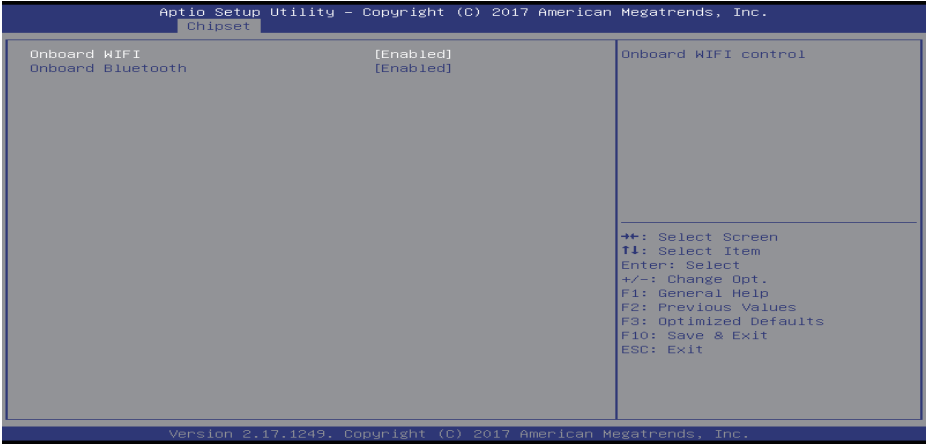
This item PCIe S0ix LTR Threshold : Latency Value - This value is multiplied by Latency Scale.

Options: 150 (Default)

### COM Port1 Mode

Options: RS232 (Default) / RS422 / RS485

## Onboard Device



### Onboard WIFI

This item Onboard WIFI Control.

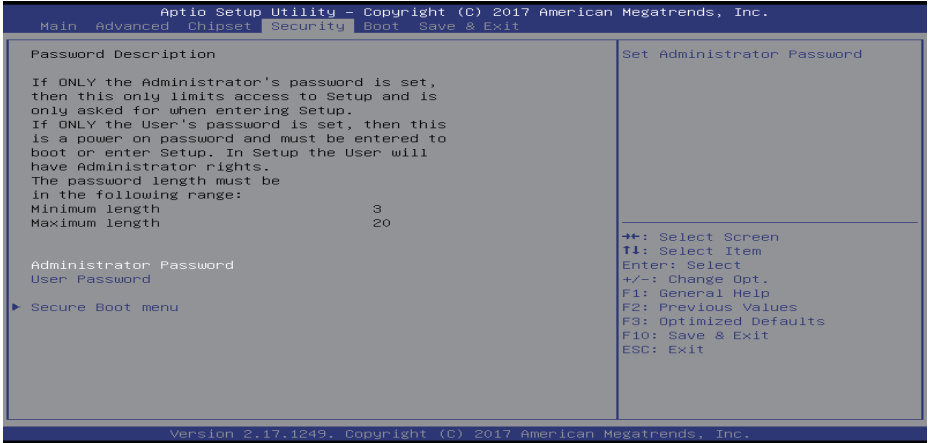
Options: Enabled (Default) / Disabled

### Onboard Bluetooth

This item Onboard Bluetooth Control.

Options: Enabled (Default) / Disabled

## 3.4 Security Menu



### Administrator Password

This item sets Administrator Password.

### User Password

This item sets User Password.

### Secure Boot menu



### Secure Boot

Secure Boot can be enabled if 1. System running in user mode with enrolled Platform(PK) 2. CSM function is disabled.

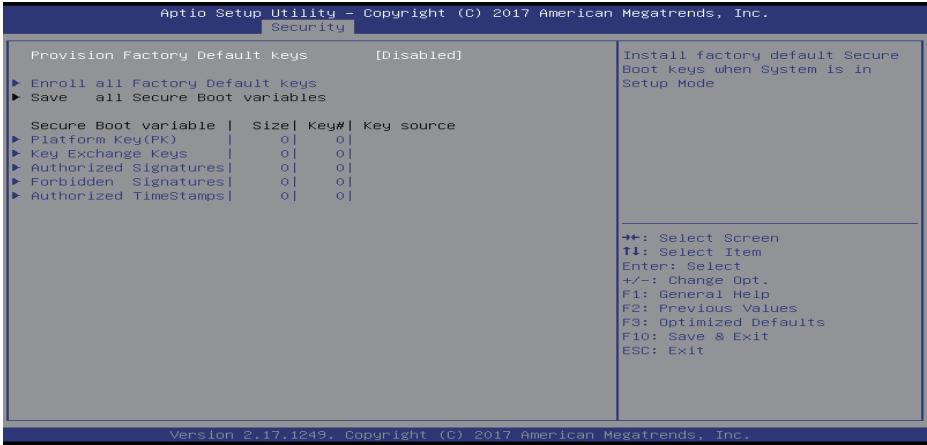
Options: Disabled (Default) / Enabled

### Secure Boot Mode

Secure Boot mode selector. Custom Mode enables users to change Image Execution policy and manage Secure Boot Keys.

Options: Custom (Default) / Standard

## Key Management



### Provision Factory Defaults Keys

Allow to install factory default Secure Boot Keys when system is in setup mode.

Options: Disabled (Default) / Enabled

### Enroll all Factory Default keys

Force System to User Mode - install all Factory Default Keys(PK, KEK, db, dbt, dbx). Change takes effect after reboot.

### Save all Secure Boot variables

Save NVRAM content of all Secure Boot policy variables to the files (EFI\_SIGNATURE\_LIST data format) in root folder on a target file system device.

### Platform Key (PK)

Set new Key – Allows you set new PK file.

Delete Key – Allows you delete PK file.

### Key Exchange Keys

Set new Key – Allows you set new KEK file.

Append Key – Allows you append Var to KEK.

Delete Key – Allows you delete KEK file.

### Authorized Signatures

Set new Key – Allows you set new DB file.

Append Key – Allows you append Var to DB.

Delete Key – Allows you delete DB file.

### Forbidden Signatures

Set new Key – Allows you set new DBX file.

Append Key – Allows you append Var to DBX.

Delete Key – Allows you delete DBX file.

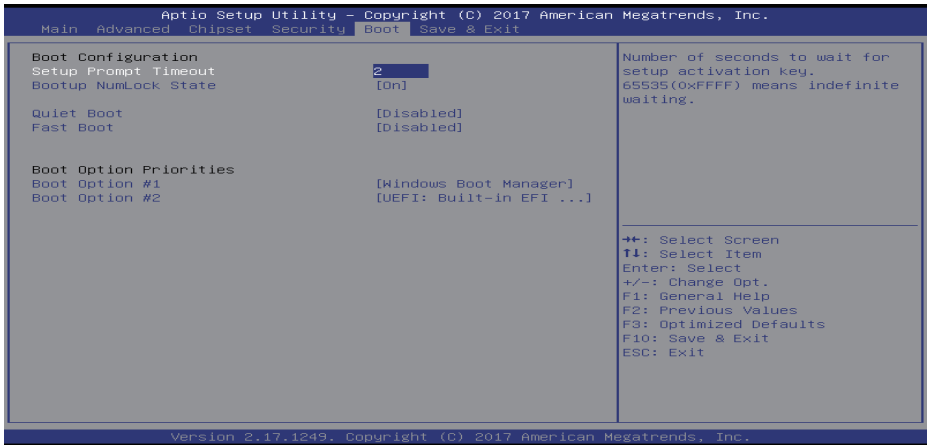
### Authorized Timestamps

Set new Key – Allows you set new DBT file.

Append Key – Allows you append Var to DBT.

## 3.5 Boot Menu

This menu allows you to setup the system boot options.



### Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Options: 2 (Default)

### Bootup NumLock State

This item selects the keyboard NumLock state.

Options: On (Default) / Off

### Quiet Boot

This item allows you to enable/disable Quiet Boot option.

Options: Disabled (Default) / Enabled

### Fast Boot

This item allows you to enable/disable boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Options: Disabled (Default) / Enabled

» *The following items appear only when you set the Fast Boot function to [Enabled].*

### SATA Support

If Last Boot HDD Only, Only last boot HDD device will be available in Post. If All Sata Devices, all SATA devices will be available in OS and Post.

Options: All Sata Devices (Default) / Last Boot HDD Only

### VGA Support

If Disabled, all USB devices will not be available until after OS boot. If Partial Initial, USB Mass Storage and specific USB port/device will not be available before OS boot. If Enabled, all USB devices will be available in OS and Post.

Options: EFI Driver (Default)

## **USB Support**

If Disabled, all USB devices will NOT be available until after OS boot. If Partial Initial, USB Mass Storage and specific USB port/device will NOT be available before OS boot. If Enabled, all USB devices will be available in OS and Post.

Options: Partial Initial (Default) / Disabled / Full Initial

## **PS2 Devices Support**

If Disabled, PS2 devices will be skipped.

Options: Enabled (Default) / Disabled

## **Network Stack Driver Support**

If Disabled, Network Stack Drivers will be skipped.

Options: Disabled (Default) / Enabled

## **Redirection Support**

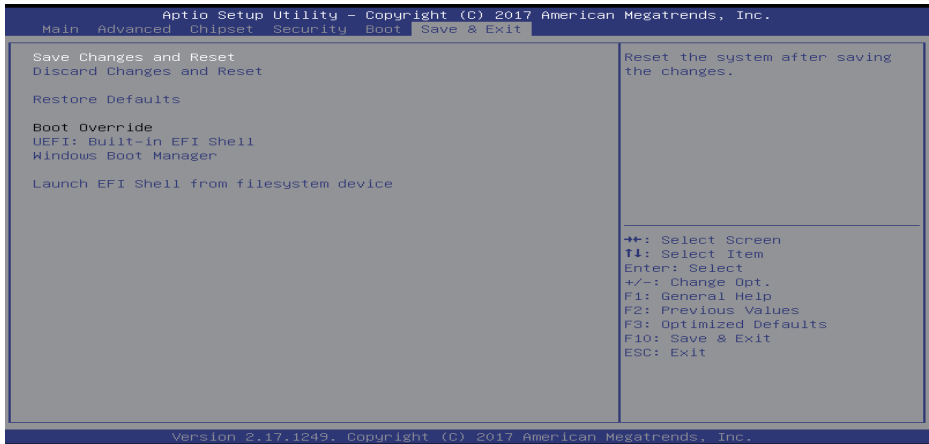
If Disabled, Redirection function will be disabled.

Options: Disabled (Default) / Enabled



### 3.6 Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.



#### Save Changes and Reset

Reset the system after saving the changes.

#### Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

#### Restore Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

#### Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices.