EMX-BSWP

Intel ® Celeron® Processor N3160
Mini ITX Motherboard

User's Manual

4th Ed – 29 November 2017

Part No. E2047EMSW04R

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x EMX-BSWP motherboard
- 2 x SATA cables
- 1 x I/O Shield
- 1 x SATA Power Cable

If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	By	Comment
1st	January 2016	Avalue	Initial Release
2nd	April 2016	Avalue	Add System Specifications Note
3rd	August 2017	Avalue	Update System Specifications
4th	November 2017	Avalue	Update System Specifications

1.4 Manual Objectives

This manual describes in details Avalue Technology EMX-BSWP Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to set up EMX-BSWP or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

If you have any suggestions or find any errors regarding this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

1.5 System Specifications

System	
CPU	Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)
BIOS	AMI uEFI BIOS, 64 Mbit SPI Flash ROM
I/O Chip	EC IT8528E
System Memory	2 x 204-pin DDR3L 1600MHz SODIMMs, up to 8GB
Watchdog Timer	H/W Reset, 1sec. – 65535sec./min.1sec. or 1min. step
H/W Status Monitor	CPU temperature monitoring Voltages monitoring CPU fan speed control
Expansion	1 x full size Mini PCI-e support mSATA (SATA III and mSATA Switchable Through jumper) 1 x full size Mini PCI-e support WiFi module 1 x SIM card slot 1 x PCI-e x1 1 x SD card slot support SD/ SDHC 3.0 Card
Optional Parts	Optional Infineon SLB9665 support TPM 2.0 Optional eMMC 32GB
S3/S4	Yes (S0/S3/S4/S5)
Display	
Resolution	HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600@ 60 Hz VGA: 2048 x 1536 @ 60 Hz 2CH 18/24bits LVDS 1920 x 1080 Chrontel. CH7511B eDP to LVDS Converter HDMI +VGA+LVDS Triple Display
Internal I/O Connectors	
External I/O Connector	Storage: -1 x full size Mini PCI-e support mSATA (SATA III and mSATA Switchable Through jumper) - 2 x SATA power connectors 1 x full size Mini PCI-e support WiFi or communication module 1 x PCI-e x1 1 x SIM card Slot COM: COM1:

	-COM 1 support RS- RS232/422/485 connector, with / +5V & +12V Supported and RS422/485 by BIOS setting 1 x 2 x 5 pin, pitch 2.00mm connector for COM1: support RS-232 connector, Pin 9 with / +5V & +12V Supported 1 x 2 x 3 pin, pitch 2.00mm connector for COM1: support RS422/485 connector, Pin 5 with / +5V Supported COM2~6: - 5 x 2 x 5 pin, pitch 2.00mm connector for COM2~6: support RS-232 connector, Pin 9 with / +5V & +12V Supported 2 x 2 x 5 pin, pitch 2.54mm connector for 4 USB 2.0 1 x 2 x 6 pin, pitch 2.00mm connector for GPIO: 8 bits 1 x 2 x 4 pin, pitch 2.00mm connector for BIOS SPI 1 x 2 x 5 pin, pitch 2.00mm connector for EC SPI 1 x 2 x 5 pin, pitch 2.0mm connector for LPC 1 x horizontal type battery connector (Battery cable 170mm length) 1 x 2 x 5 pin, pitch 2.54mm connector for front panel 1 1 x 2 x 5 pin, pitch 2.54mm connector for front panel 2 1 x 2 x 20 pin, pitch 1.25mm connector for LVDS (must be using DF13-40DS-1.25C connector) 1 x 1 x 5 pin, pitch 2.00mm Wafer connector for LCD inverter backlight connector (5V/12V) 1 x 1 x 3 pin, pitch 2.54mm connector LCD backlight brightness adjustment (PWM/DC) 1 x 2 x 5 pin, pitch 2.54mm connector for front Audio 1 x 3 pin, pitch 2.54mm connector for S/PDIF 1 x 4 pin, pitch wafer 2.00mm connector for 3W x 2 Speaker 1 x 2 x 5 pin, pitch 2.00mm connector for Keyboard & Mouse 1 x 4 pin, pitch 2.00mm connector for CIR 1 x 3 pin, pitch 2.00mm connector for CMOS clear 1 x 1 x 4 pin, pitch 2.54mm CPU fan connector with smart fan function supported 2 x 1 x 4 pin, pitch 2.00mm connector for LAN Activity Indicator LED 1 x 2 x 2 pin, pitch 4.20mm connector for power input connector 1 x 1 x 3 pin, pitch 2.54mm connector for AT/ATX mode Fanless Operating
Rear I/O Connectors	
Rear Side External I/O Connector	2 x RJ-45 1 x VGA 1 x HDMI 1 x Mic-In and 1 x Line-out 1 x DC Jack lockable connector type

Mechanical & Environmental	
Power Requirement	DC in +12V
ACPI	Single power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
Power on Type	AT / ATX mode Switchable Through Jumper
Operating Temp.	0 ~ 60°C (32~140°F)
Storage Temp.	-40 ~ +75°C
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	6.7" x 6.7" (170mm x 170mm)
Weight	0.40 kg

Note:

1. If user want to install Win 8.1 Pro OS on eMMC of EMX-BSWP motherboard, User must do:

A. BIOS setup menu must select eMMC mode with "PCI mode"(because selection with "ACPI mode" during OS install, OS cannot find eMMC to install).

B. Windows OS must use Microsoft Win 8.1 Pro with update version of OS image to install.

2. Brightness control method choose "OS driver", due to Win7 VGA Driver will cause brightness at 100%, Backlight adjustment only support to maximum voltage to **2.5**V. Therefore, should change item value string as Image 1, when choose Brightness control method "OS driver", please use OS Win8/10.

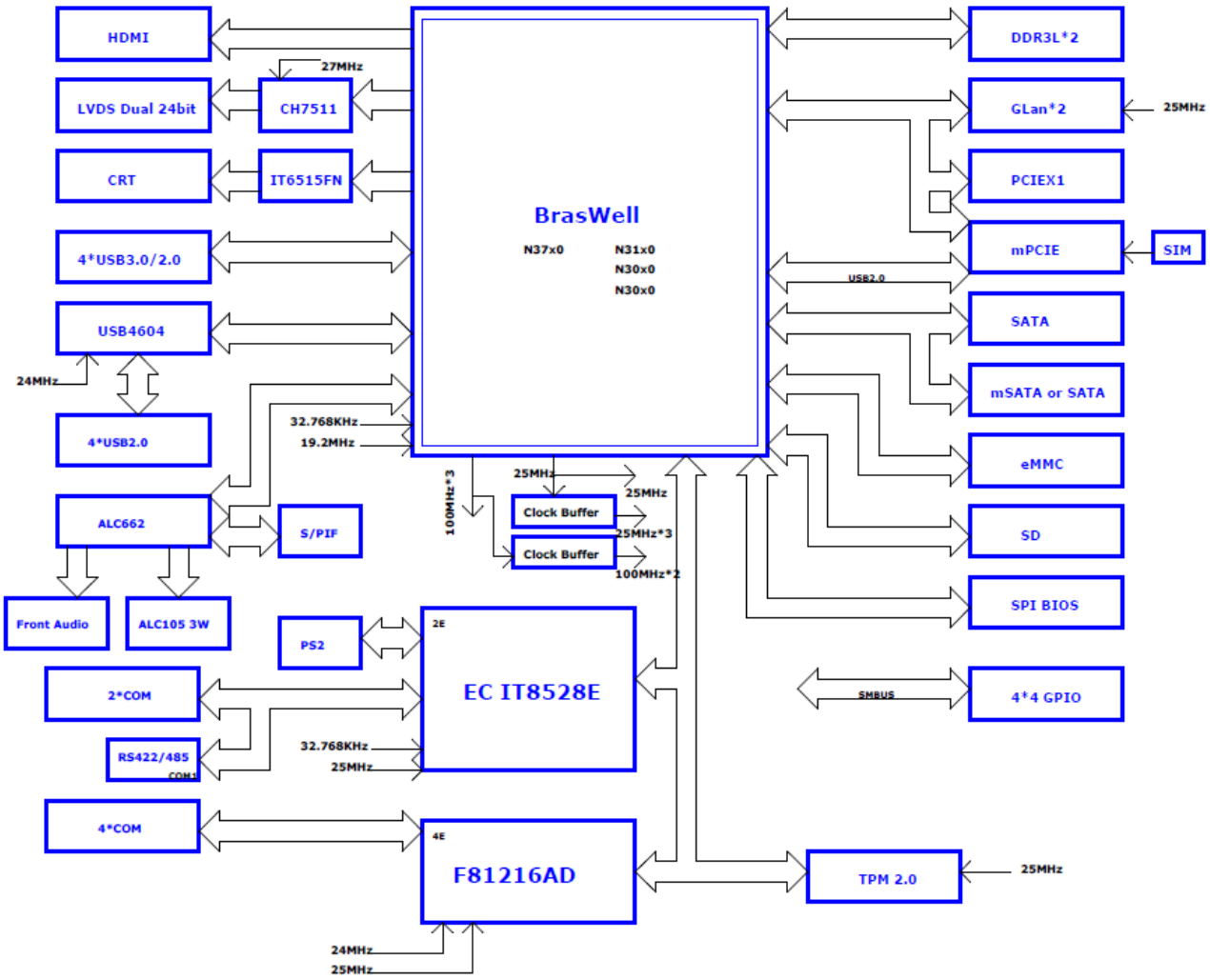
3. Win7 does not support SD card.

4. When OS is Win7/DOS(default), please choose "Legacy System/Win7" at BIOS setup item. When OS is Win8/10, please choose "Win8/Win10" at BIOS setup item (Please refer page.65 BOM Config settings.)

5. Specifications are subject to change without notice.

1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of EMX-BSWP.



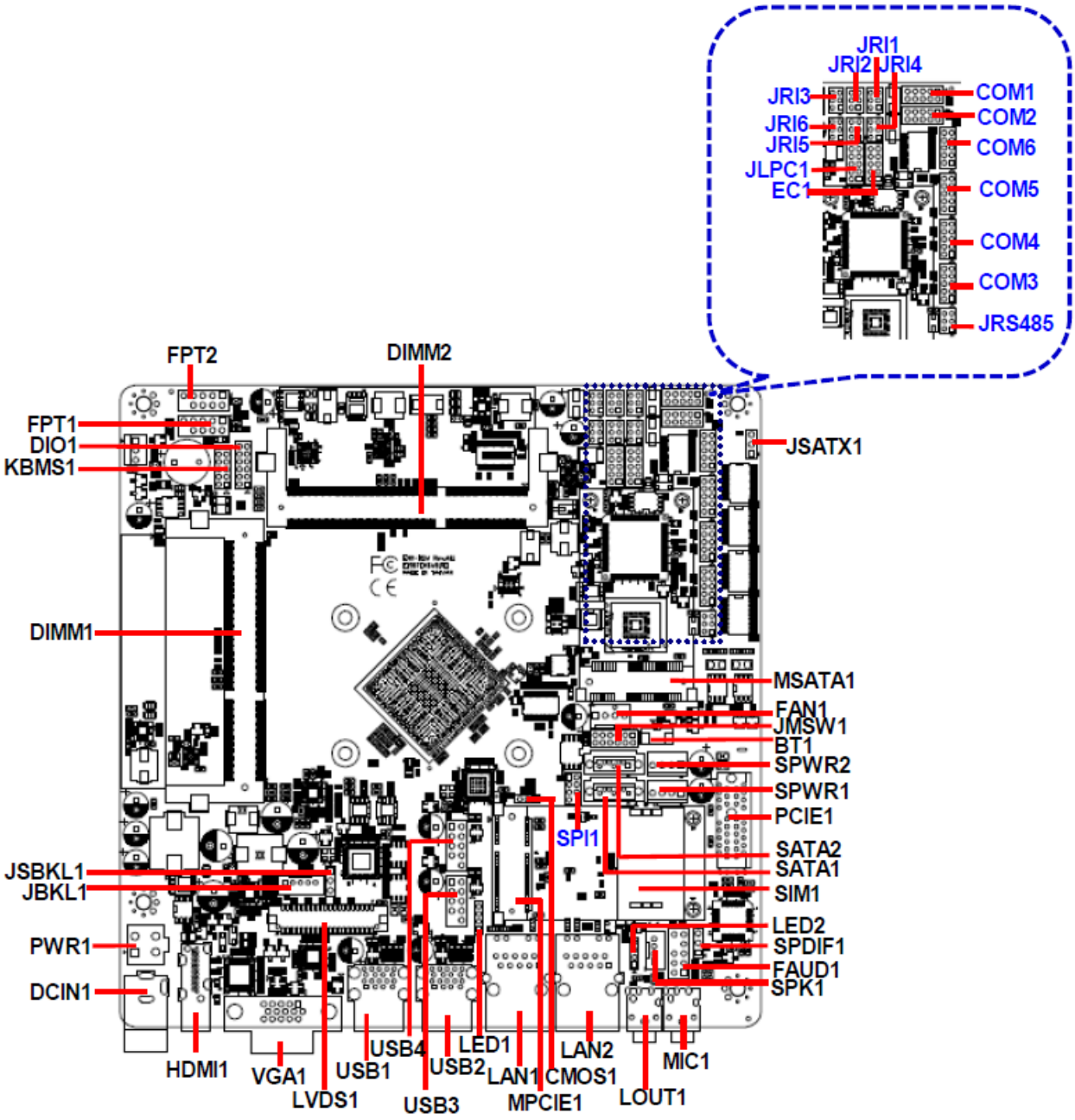
2. Hardware Configuration

Note:

SD Card

3.3V SD Card AF% less than 5%. UHS-I cards operating at 1.8V are not affected. Usage of SD cards operating at 3.3V should be minimized and usage should be limited to UHS-I type SD cards operating at 1.8V. Inserting the 3.3V SD card, and leaving it in the system, as extended storage, reduces the life of the interface. Occasional usage of 3.3V SD card, inserting the card –transferring data to or from the 3.3V SD card-then removing the 3.3V SD card, is not a concern. Customers have the option to enable a default D3 device setting to extend the life of the 3.3V SD card interface, if supported by the OS.

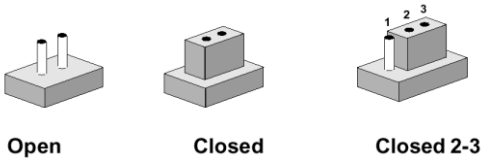
2.1 Product Overview



2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



The jumper settings are schematically depicted in this manual as follows:

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board's jumpers and connectors.

Jumpers

Label	Function	Note
JRI1/2/3/4/5/6	Serial port 1/2/3/4/5/6 pin9 signal select	3 x 2 header, pitch 2.00mm
JMSW1	SATA2/MSATA1 mPCIe slot selector	6 x 2 header, pitch 2.00mm
JSBKL1	LVDS Back Light power selection	3 x 1 header, pitch 2.54mm
JSATX1	AT/ATX Power Mode Select	3 x 1 header, pitch 2.54mm
CMOS1	Clear CMOS	3 x 1 header, pitch 2.00mm

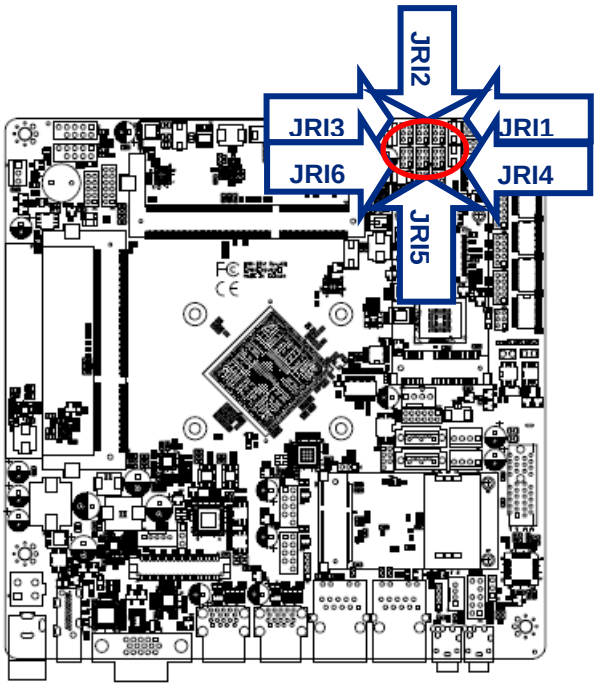
Connectors

Label	Function	Note
FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54mm
FPT1	Miscellaneous setting connector 1	5 x 2 header, pitch 2.54 mm
FPT2	Miscellaneous setting connector 2	5 x 2 header, pitch 2.54 mm
DIMM1/2	204-pin DDR3L DIMM socket	

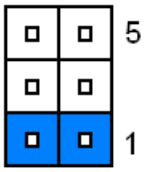
FAUD1	Front Audio connector	5 x 2 header, pitch 2.54 mm
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
SPI1	SPI connector	4 x 2 header, pitch 2.00mm
COM1	Serial Port 1 connector	5 x 2 header, pitch 2.00mm
COM2	Serial Port 2 connector	5 x 2 header, pitch 2.00mm
COM3	Serial Port 3 connector	5 x 2 header, pitch 2.00mm
COM4	Serial Port 4 connector	5 x 2 header, pitch 2.00mm
COM5	Serial Port 5 connector	5 x 2 header, pitch 2.00mm
COM6	Serial Port 6 connector	5 x 2 header, pitch 2.00mm
DIO1	General purpose I/O connector	6 x 2 header, pitch 2.00mm
SPK1	Speaker connector	1 x 4 wafer, pitch 2.00 mm
LVDS1	LVDS Connector	DIN 40-pin wafer, pitch 1.25mm
USB1/2	USB connector 1/2	
USB3/4	USB connector 3/4	5 x 2 header, pitch 2.54mm
SPDIF1	Sony/Philips Digital Interface	3 x 1 header, pitch 2.54 mm
LAN1/2	RJ-45 Ethernet 1/2	
PCIE1	PCIe connector	
LED1	LED indicator connector 1	4 x 1 header, pitch 2.00mm
LED2	LED indicator connector 2	4 x 1 header, pitch 2.00mm
KBMS1	PS/2 keyboard & mouse connector	5 x 2 header, pitch 2.00 mm
BT1	Battery connector	2 x 1 wafer, pitch 1.25mm
MSATA1	Full size mPCIe Slot	
MPCIE1	Mini-PCIe connector 1	
JRS485	Serial Port 1 RS485/422 Mode connector	3 x 2 header, pitch 2.00 mm
JLPC1	LPC connector	5 x 2 header, pitch 2.00mm
PWR1	Power connector	2 x 2 wafer, pitch 4.20mm
SATA1/2	Serial ATA connector 1/2	
SPWR1/2	SATA Power connector 1/2	4 x 1 wafer, pitch 2.54mm
EC1	EC_Program	5 x 2 header, pitch 2.00 mm
DCIN1	DC Power-in connector	
SIM1	SIM card slot	
HDMI1	HDMI connector	
LOUT1	Line-out audio jack	
MIC1	Mic-in audio jack	
VGA1	VGA connector	

2.3 Setting Jumpers & Connectors

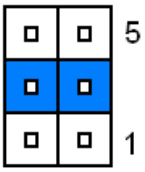
2.3.1 Serial port 1/2/3/4/5/6 pin9 signal select (JRI1/JRI2/JRI3/JRI4/JRI5/JRI6)



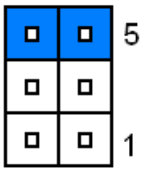
Ring*



+5V

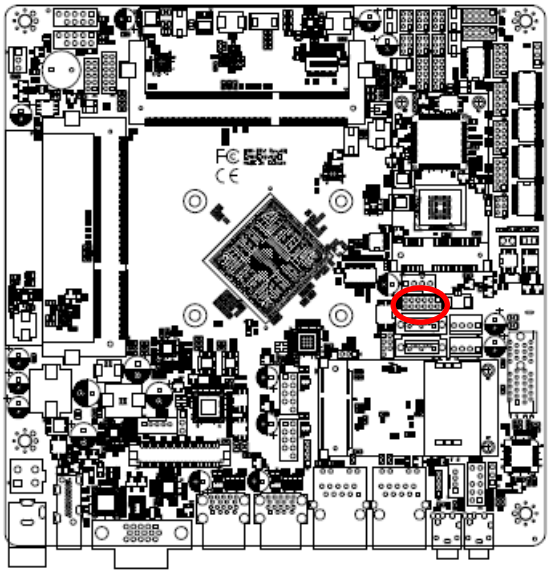


+12V



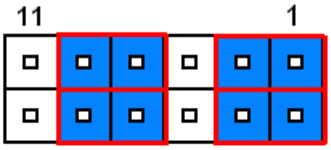
*** Default**

2.3.2 SATA2/MSATA1 mPCIe slot selector (JMSW1)



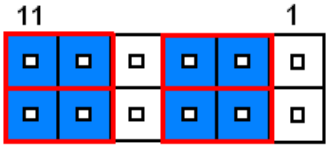
SATA2 Connector *

(SATA2 Connector enabled, MSATA1 slot Disabled)



MSATA1 mPCIe slot

(MSATA1 slot enabled, SATA2 Connector Disabled)

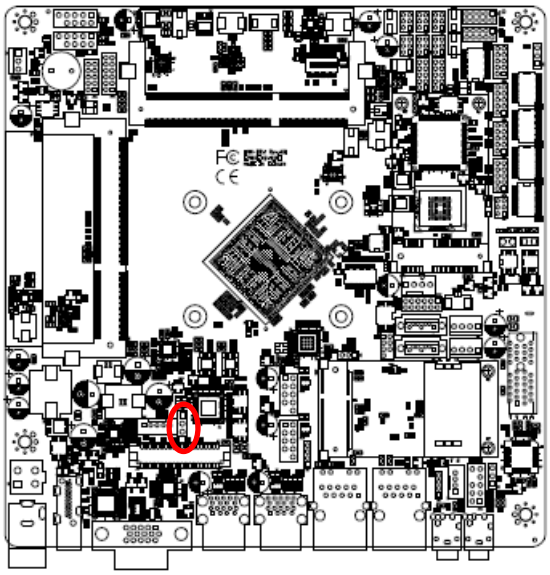


*** Default**

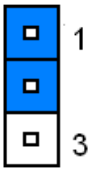
Note:

SATA2/MSATA1 shared SATA signal, can not be used simultaneously.

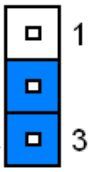
2.3.3 LVDS Back Light power selection (JSBKL1)



PWM Mode*(Max current: 2A)

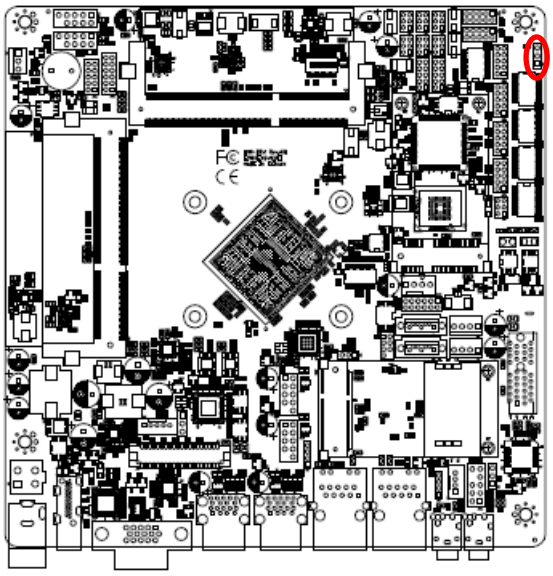


DC Mode(Max current: 2A)

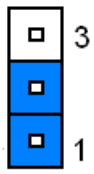


*** Default**

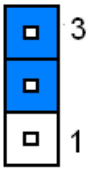
2.3.4 AT/ATX Power Mode Select (JSATX1)



ATX*

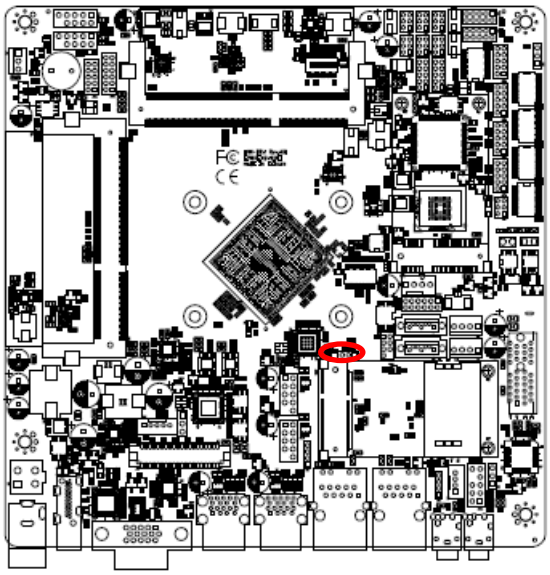


AT

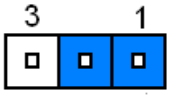


*** Default**

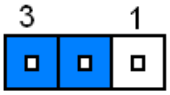
2.3.5 Clear CMOS (CMOS1)



Protect*

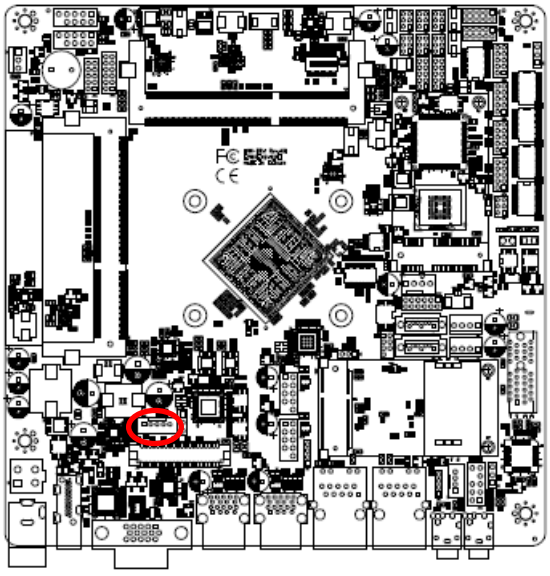


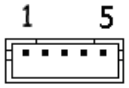
Clear CMOS



*** Default**

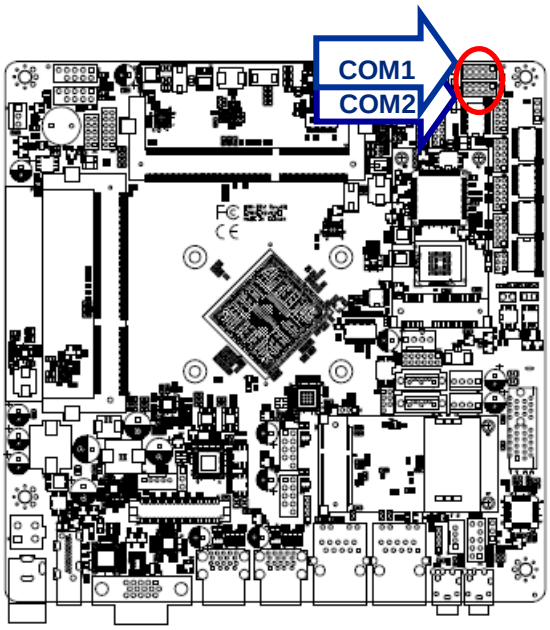
2.3.6 LCD Inverter connector (JBKL1)

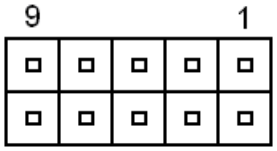




PIN	Signal	Max current
1	+12V	2A
2	GND	
3	LVDS_BKLTEN	
4	LVDS_BKLADJ	
5	+5V	2A

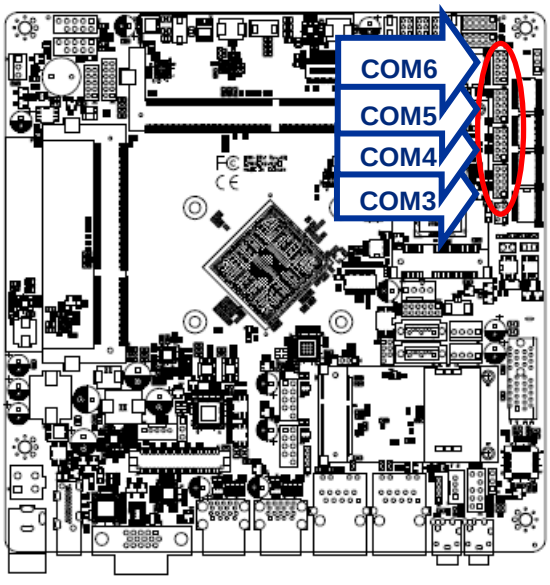
2.3.7 Serial port 1/2 connector (COM1/2)

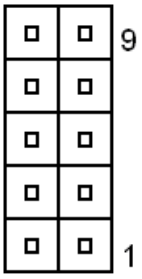




Signal	PIN	PIN	Signal
DCD	1	2	RXD
TXD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

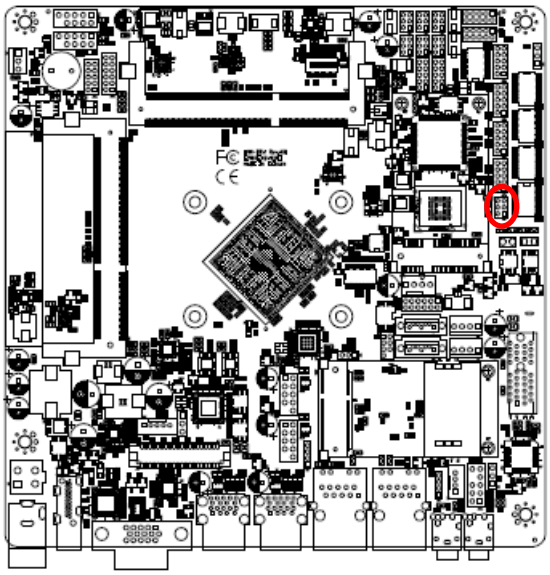
2.3.8 Serial port 3/4/5/6 connector (COM3/4/5/6)

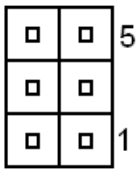




Signal	PIN	PIN	Signal
NC	10	9	RI
CTS	8	7	RTS
DSR	6	5	GND
DTR	4	3	TXD
RXD	2	1	DCD

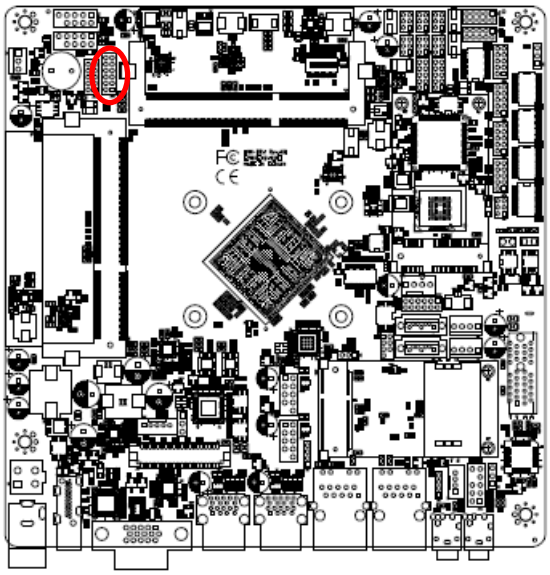
2.3.9 Serial Port 1 RS485/422 Mode connector (JRS485)

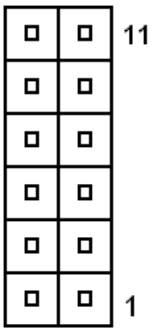




Signal	PIN	PIN	Signal
GND	6	5	+5V
422RX+	4	3	485TX+
422RX-	2	1	485TX-

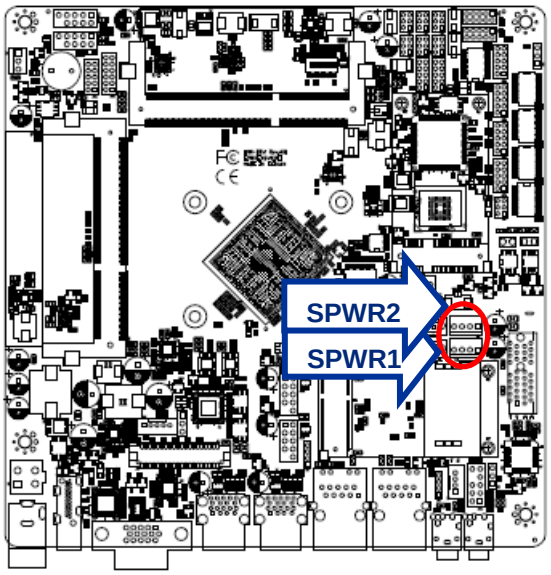
2.3.10 General purpose I/O connector (DIO1)

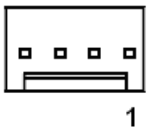




Signal	PIN	PIN	Signal
+5V	12	11	GND
SMB_DATA	10	9	SMB_CLK
DO3	8	7	DI3
DO2	6	5	DI2
DO1	4	3	DI1
DO0	2	1	DI0

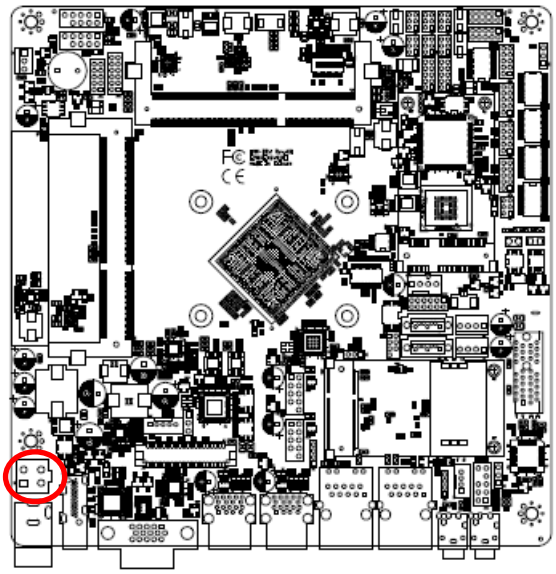
2.3.11 SATA Power connector 1/2 (SPWR1/2)

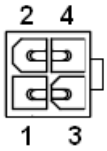




PIN	Signal	Max current
1	+V5S_SATA	3A
2	GND	
3	GND	
4	+V12S_SATA	3A

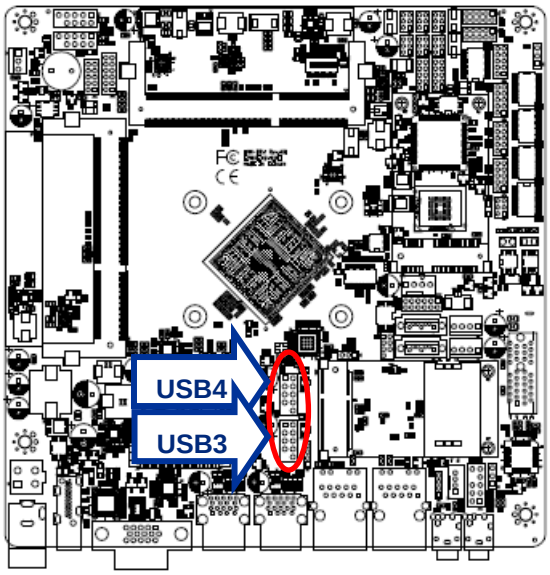
2.3.12 Power connector (PWR1)

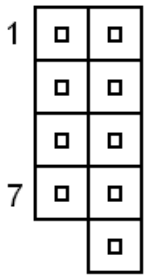




Signal	PIN	PIN	Signal
GND	1	2	GND
+VIN_12V	3	4	+VIN_12V

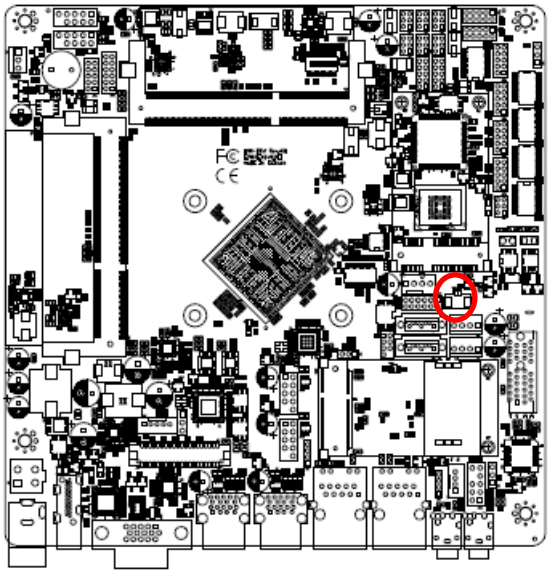
2.3.13 USB connector 3/4 (USB3/4)

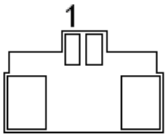




Signal	PIN	PIN	Signal
+V5A_USB01	1	2	+V5A_USB01
USB_DN0	3	4	USB_DN1
USB_DP0	5	6	USB_DP1
GND	7	8	GND
		10	NC

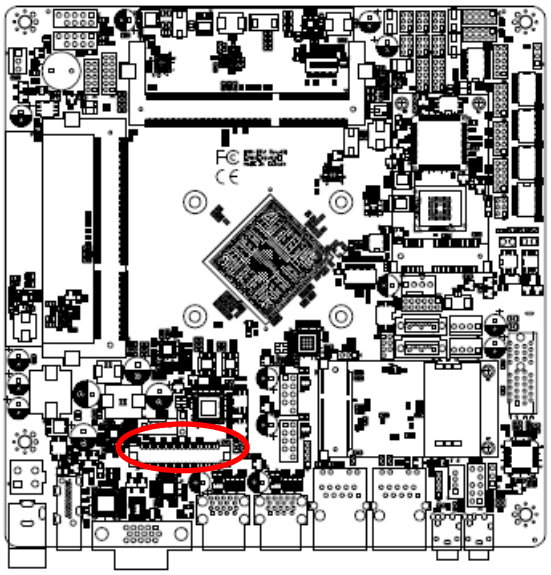
2.3.14 Battery connector (BT1)

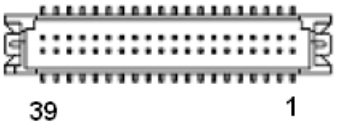




Signal	PIN
+3V	1
GND	2

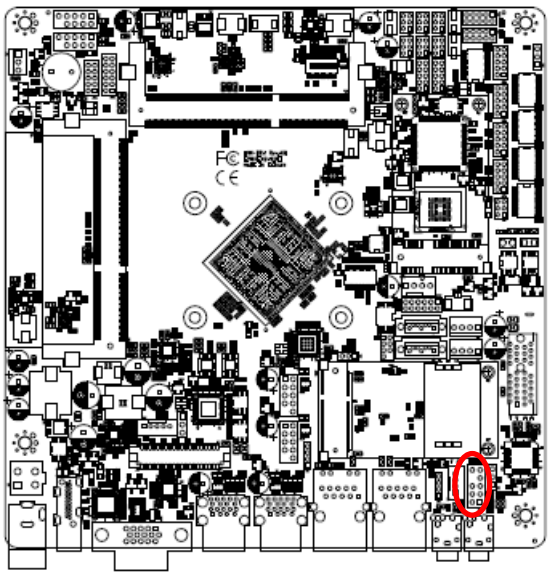
2.3.15 LVDS connector (LVDS1)

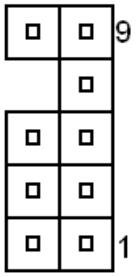




Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
EDP_DDC_DAT	6	5	EDP_DDC_SCL
GND	8	7	GND
LVDS_DATAP0	10	9	LVDS_DATAP1
LVDS_DATAN0	12	11	LVDS_DATAN1
GND	14	13	GND
LVDS_DATAP2	16	15	LVDS_DATAP3
LVDS_DATAN2	18	17	LVDS_DATAN3
GND	20	19	GND
LVDS_DATAP4	22	21	LVDS_DATAP5
LVDS_DATAN4	24	23	LVDS_DATAN5
GND	26	25	GND
LVDS_DATAP6	28	27	LVDS_DATAP7
LVDS_DATAN6	30	29	LVDS_DATAN7
GND	32	31	GND
LVDS_CLK1P	34	33	LVDS_CLK2P
LVDS_ CLK1N	36	35	LVDS_ CLK2N
GND	38	37	GND
+12V	40	39	+12V

2.3.16 Audio connector (FAUD1)



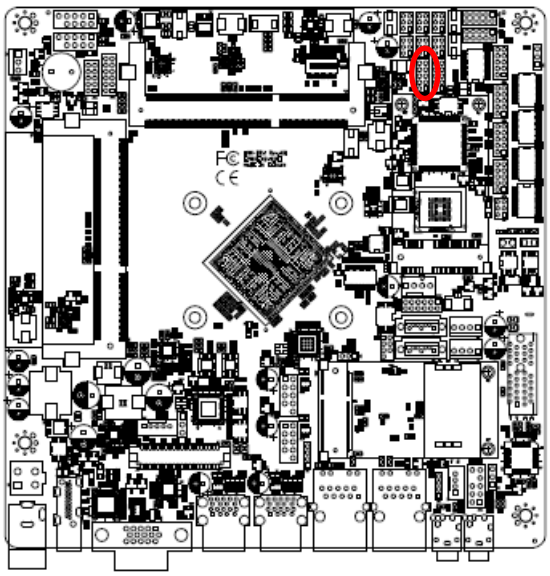


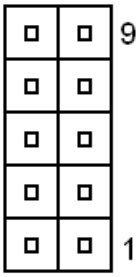
Signal	PIN	PIN	Signal
LINE2_JD	10	9	LINE2_L
		7	SENSE_B
MIC2_JD	6	5	LINE2_R
AUD_FRONT_DET	4	3	MIC2_R
GND	2	1	MIC2_L

2.3.16.1 Signal Description –Front Audio connector (FAUD1)

Signal	Signal Description
LINE2_JD	AUDIO IN (LINE_RIN/LIN)sense pin
MIC2_JD	MIC IN (MIC_RIN/LIN) sense pin

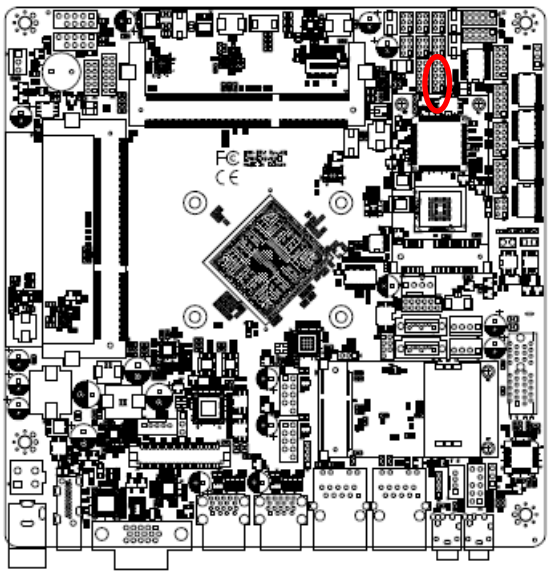
2.3.17 LPC connector (JLPC1)

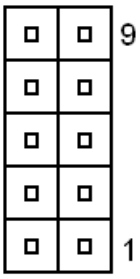




Signal	PIN	PIN	Signal
GND	10	9	LPC_SERIRQ
LPC_DEG_CLK	8	7	LPC_AD3
LPC_FRAME#	6	5	LPC_AD2
PLT_RST#	4	3	LPC_AD1
+3.3V	2	1	LPC_AD0

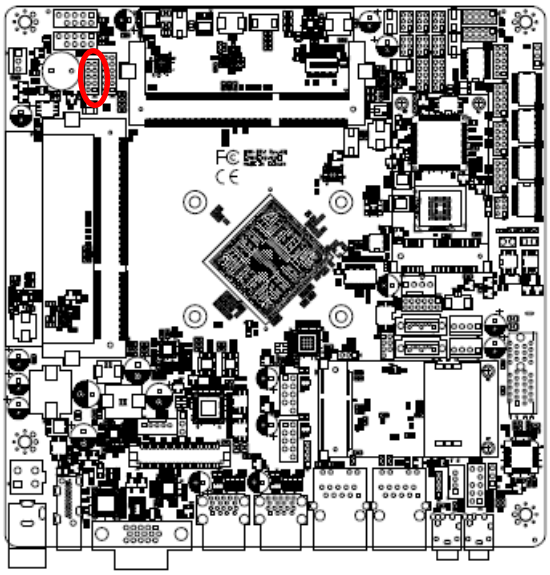
2.3.18 EC_Program (EC1)

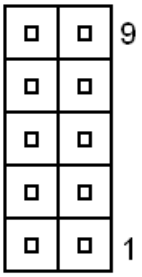




Signal	PIN	PIN	Signal
EC_SMDATA_DBG	10	9	EC_SMCLK_DBG
NC	8	7	EC_HOLD#
EC_FSMOSI	6	5	EC_FSMIOSO
EC_FSCK	4	3	EC_FSCE#
GND	2	1	+3.3A_ECSPI

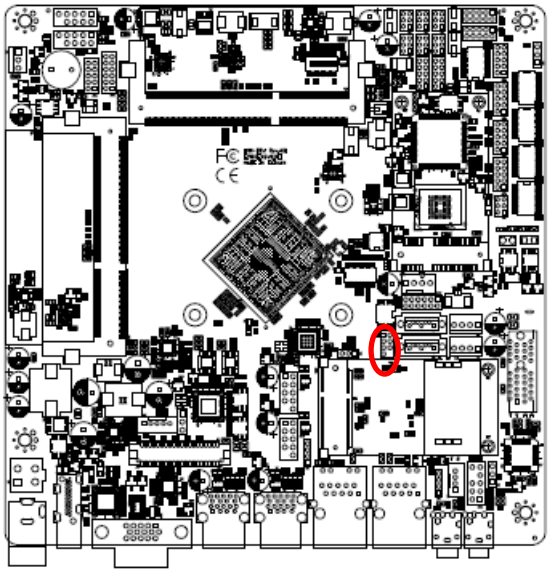
2.3.19 PS/2 keyboard & mouse connector (KBMS1)

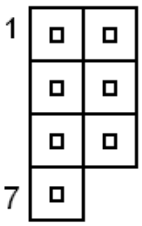




Signal	PIN	PIN	Signal
NC	10	9	NC
NC	8	7	NC
MSCK	6	5	MSDAT
+5VSB	4	3	GND
KBCK	2	1	KBDAT

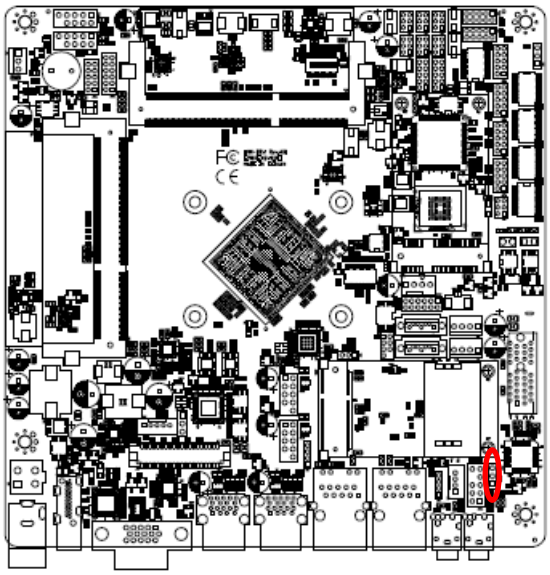
2.3.20 SPI connector (SPI1)

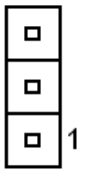




Signal	PIN	PIN	Signal
+VSPI_BIOS	1	2	GND
SPI_CS0#	3	4	SPI_CLK
SPI_MISO	5	6	SPI_MOSI
SPI_HOLD#	7		

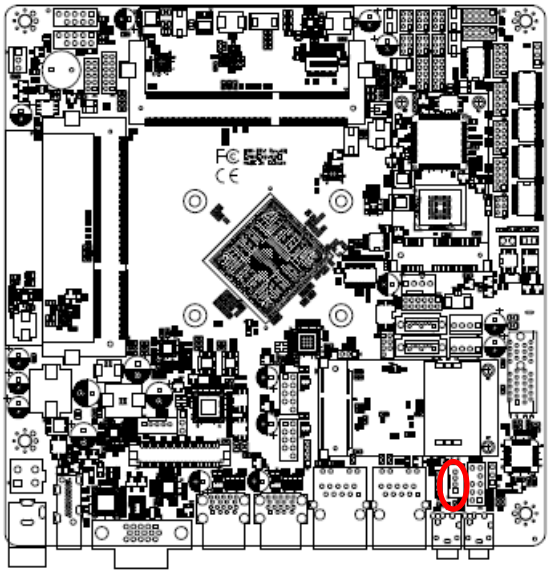
2.3.21 Sony/Philips Digital Interface (SPDIF1)





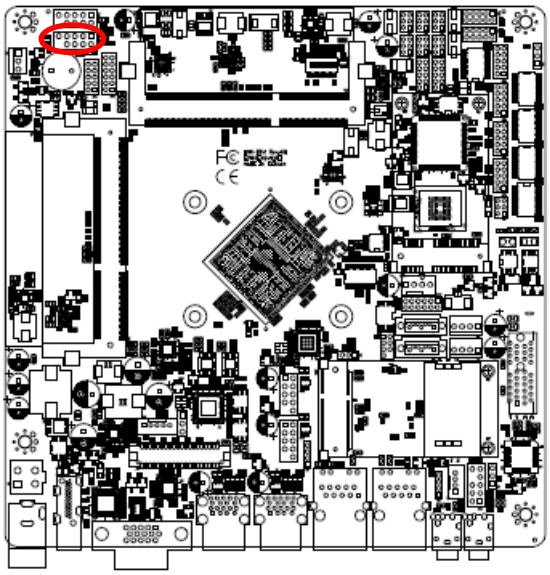
Signal	PIN
GND	3
SPDIF_OUT	2
+5V	1

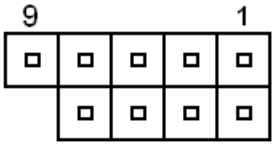
2.3.22 Speaker connector (SPK1)



Signal	PIN
RSPK-	4
RSPK+	3
LSPK-	2
LSPK+	1

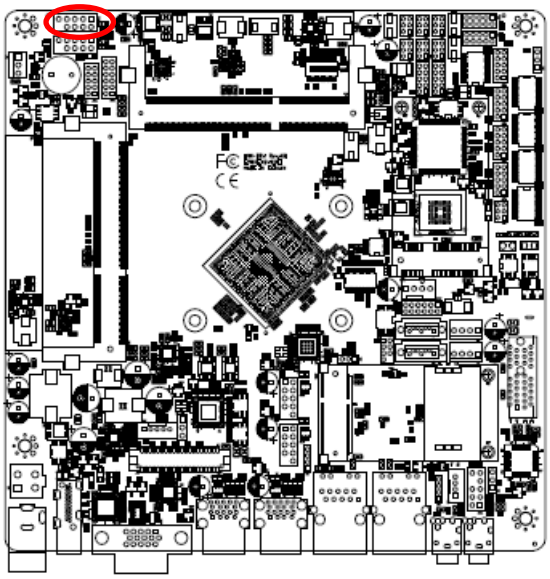
2.3.23 Miscellaneous setting connector 1 (FPT1)

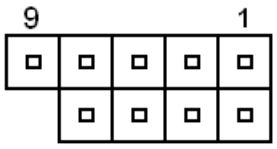




Signal	PIN	PIN	Signal
+HD_LED	1	2	+PWR_LED
-HD_LED	3	4	-PWE_LED
+Reset	5	6	+PWR_BNT
-Reset	7	8	-PWR_BNT
NC	9		

2.3.24 Miscellaneous setting connector 2 (FPT2)



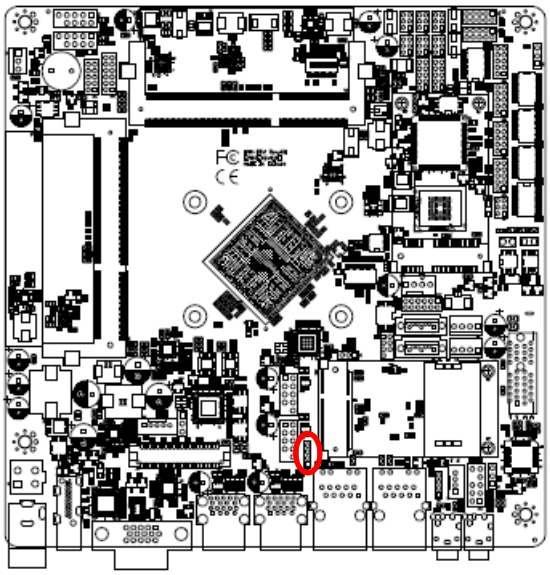


Signal	PIN	PIN	Signal
Speaker+	1	2	BLK_VR(10K)
NC	3	4	BLK_UP
NC	5	6	BLK_DN
Speaker-	7	8	GND
NC	9	10	

Note:

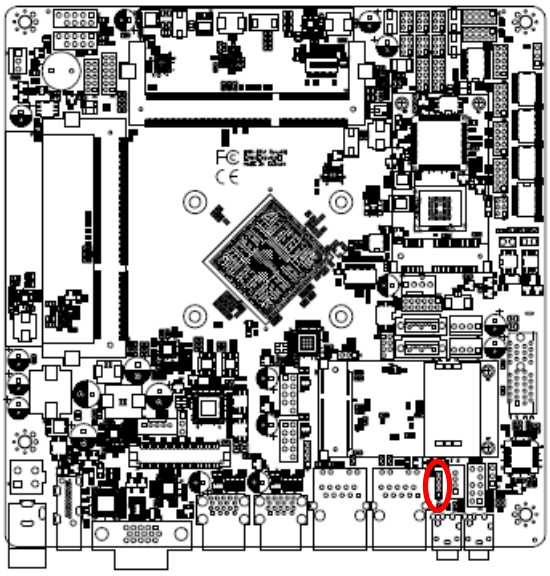
1. Pin2 with GND: Control LVDS Backlight by use Variable Resistor.
2. BLK_UP with GND/BLK_DN with GND: Step control LVDS Backlight by use button and BIOS must to be set "BR Button". (Please refer to page.88)

2.3.25 LED indicator connector 1 (LED1)



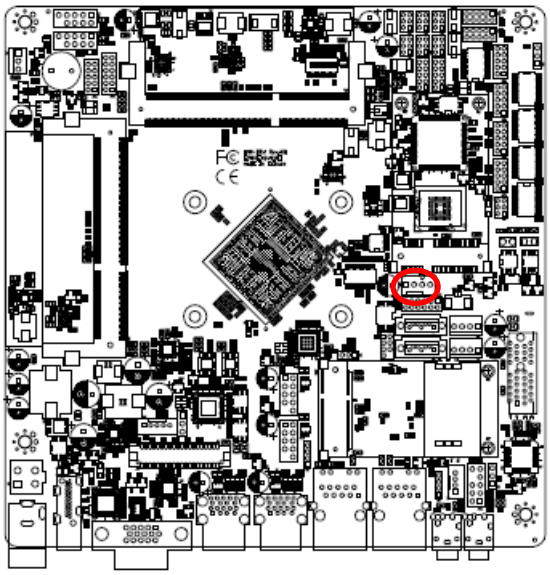
Signal	PIN
L1_1000#_LED	4
L1_100#_LED	3
L1_ACT_N	2
L1_ACT_P	1

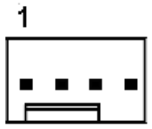
2.3.26 LED indicator connector 2 (LED2)



Signal	PIN
L2_1000#_LED	4
L2_100#_LED	3
L2_ACT_N	2
L2_ACT_P	1

2.3.27 CPU fan connector (FAN1)





Signal	PIN
GND	1
+12V	2
CPU_FANIN	3
CPU_FANOUT	4

3.BIOS Setup

3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

The AMI BIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <Del> or <F2> immediately after switching the system on, or
By pressing the <Del> or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press <Del> or <F2> to enter SETUP

If the message disappears before you 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 F1 to Continue, DEL to enter SETUP

3.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values.
F3 key	Optimized defaults
F4 key	Save & Exit Setup

- **Navigating Through The Menu Bar**

  Use the left and right arrow keys to choose the menu you want to be in.

Note: Some of the navigation keys differ from one screen to another.

- **To Display a Sub Menu**

  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

3.4 Getting Help

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> or the F1 key again.

3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

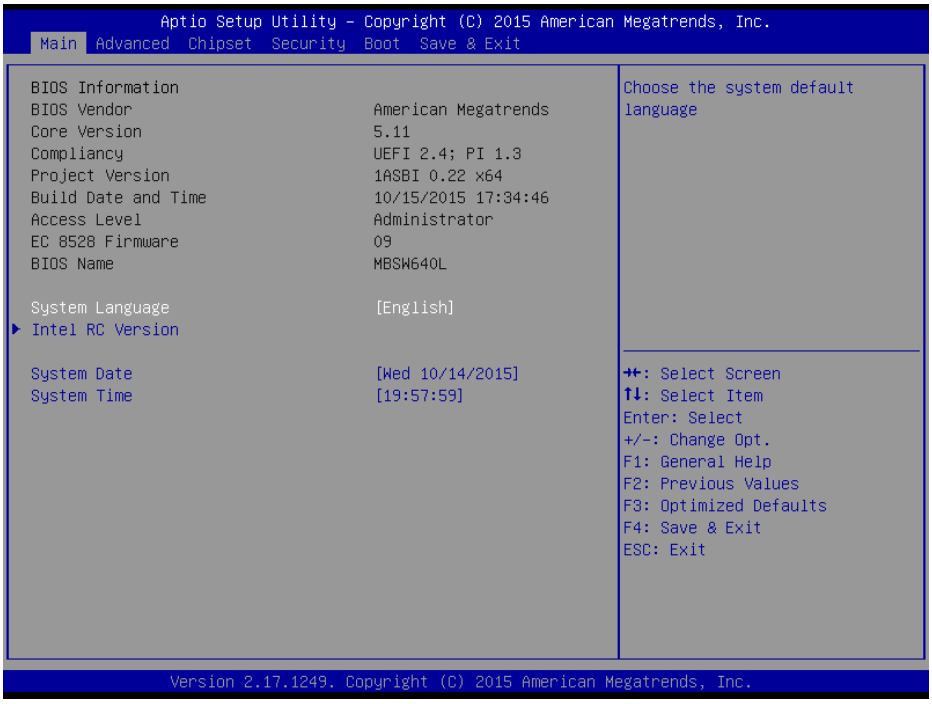
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

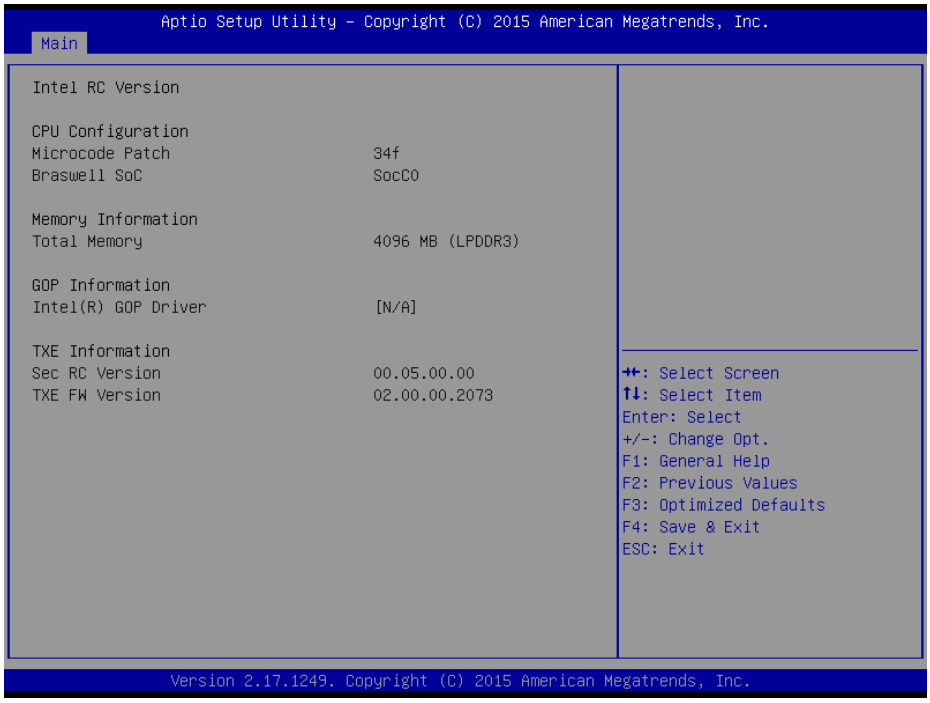
3.6 BIOS setup

Once you enter the Aptio Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

3.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.





3.6.1.1 System Language

This option allows choosing the system default language.

3.6.1.2 System Date

Use the system date option to set the system date. Manually enter the day, month and year.

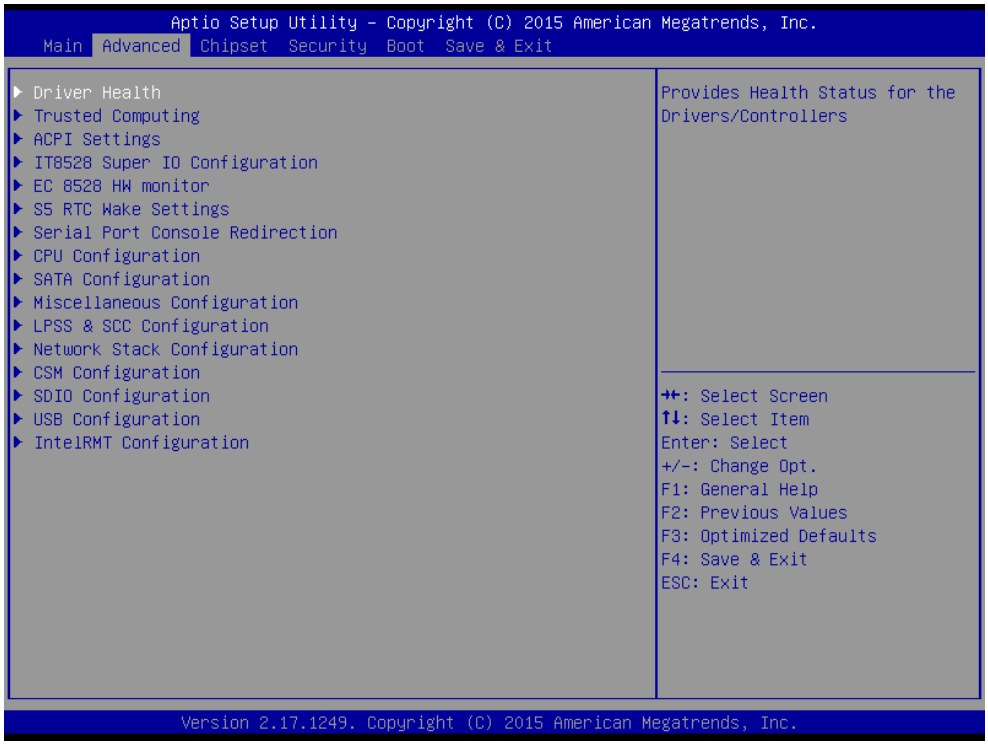
3.6.1.3 System Time

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

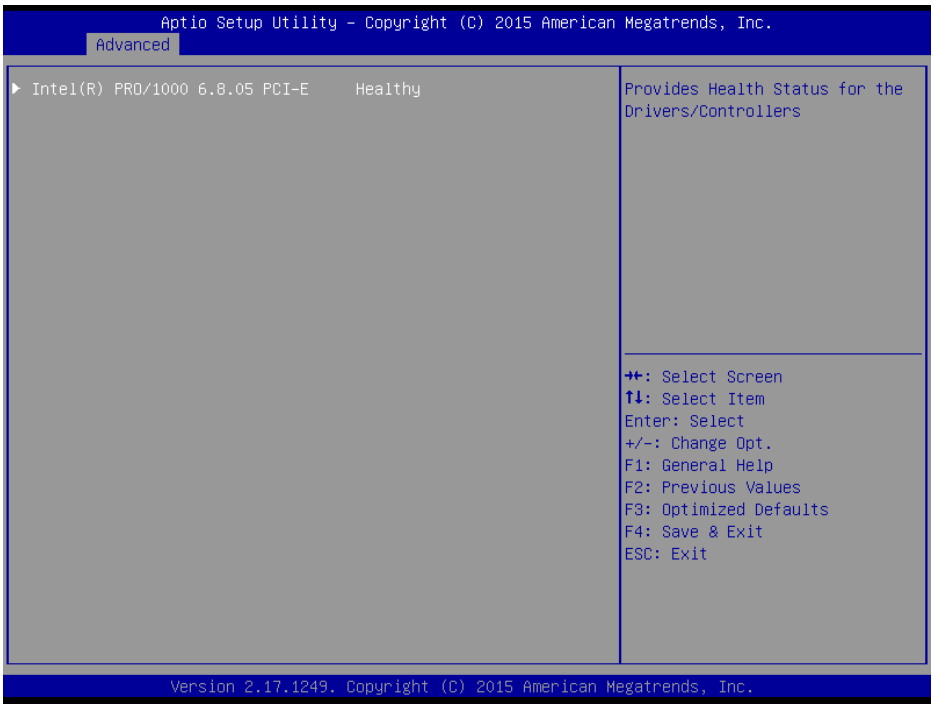
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.2 Advanced Menu

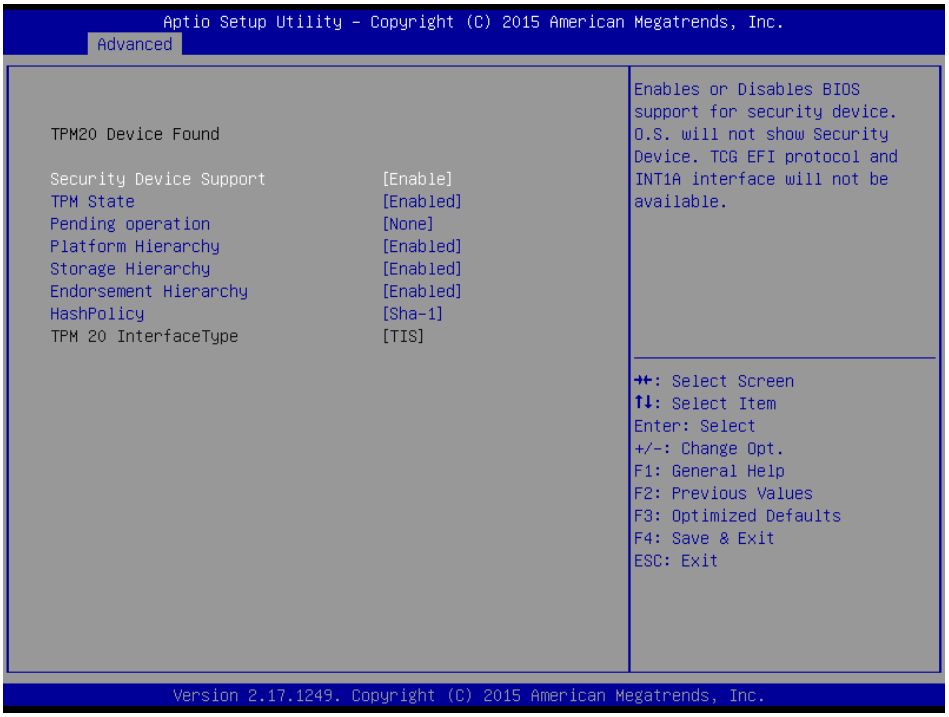
This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.

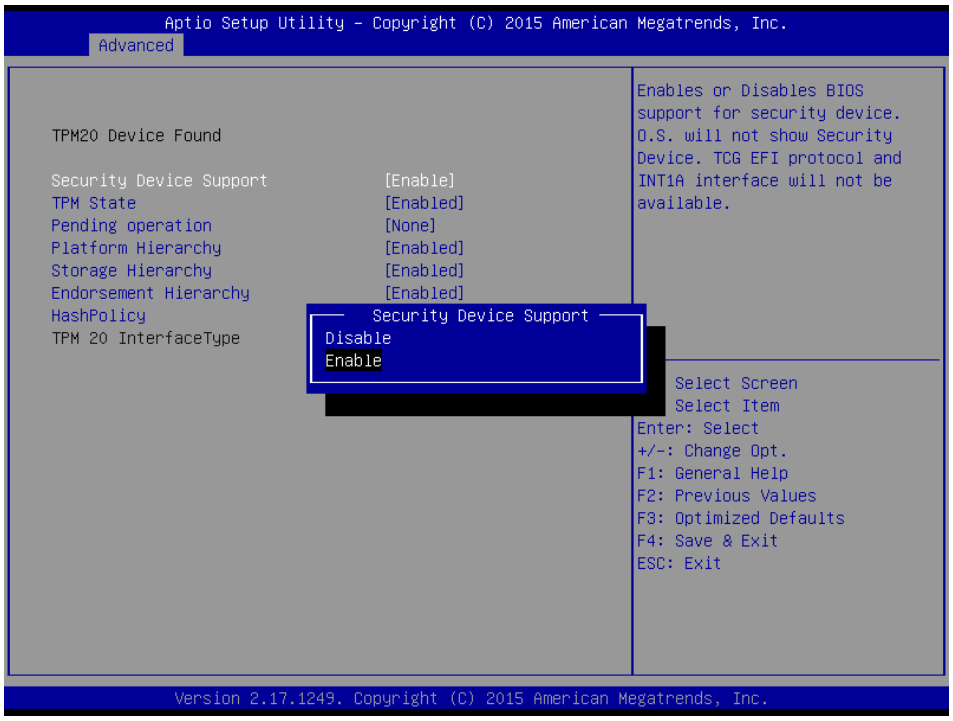


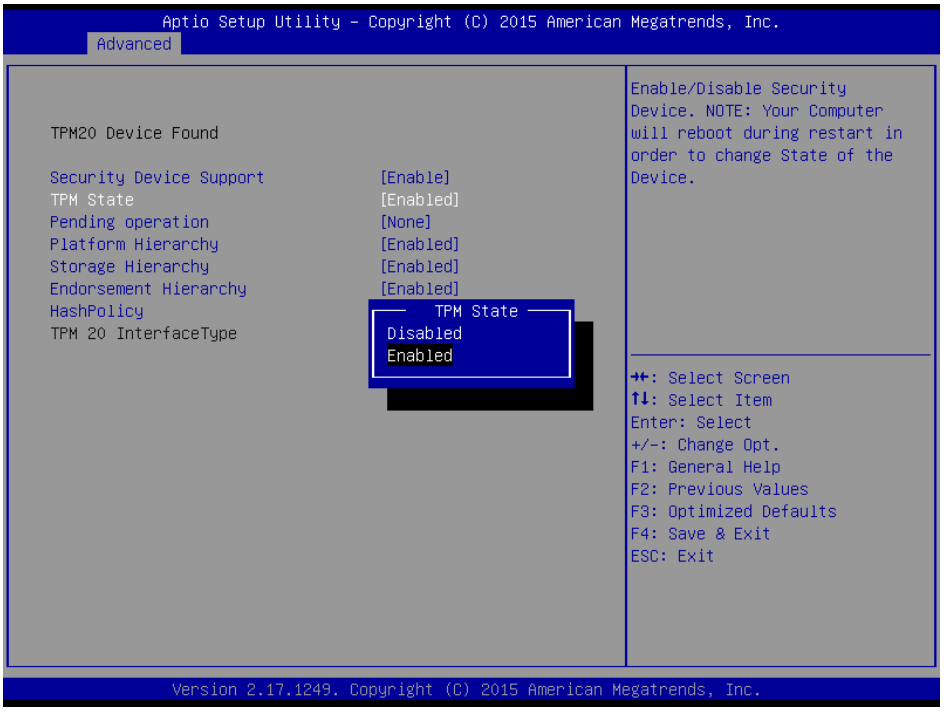
3.6.2.1 Driver Health

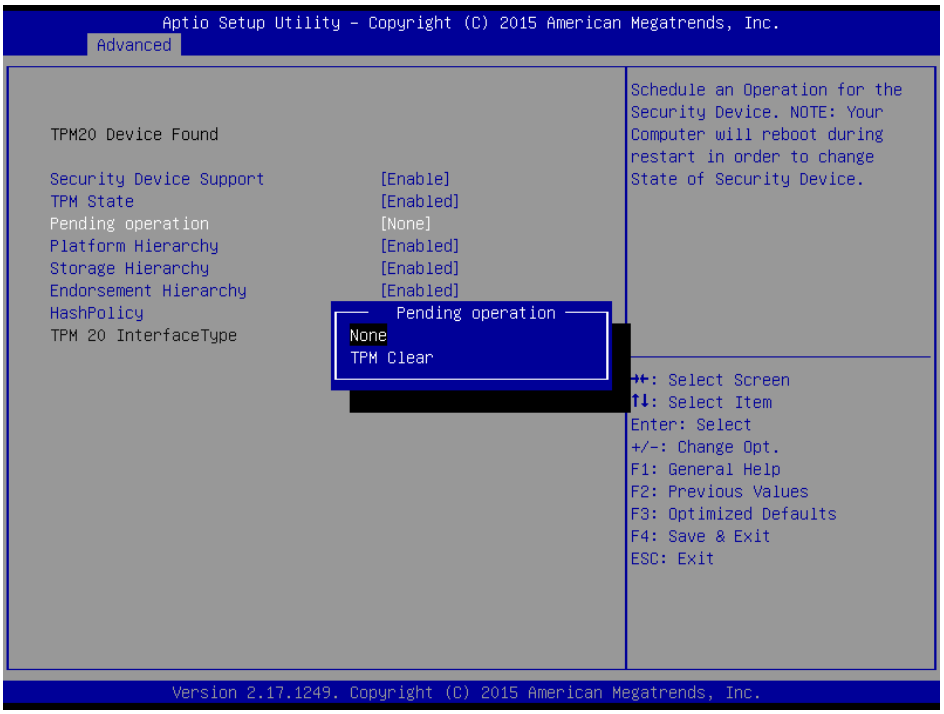


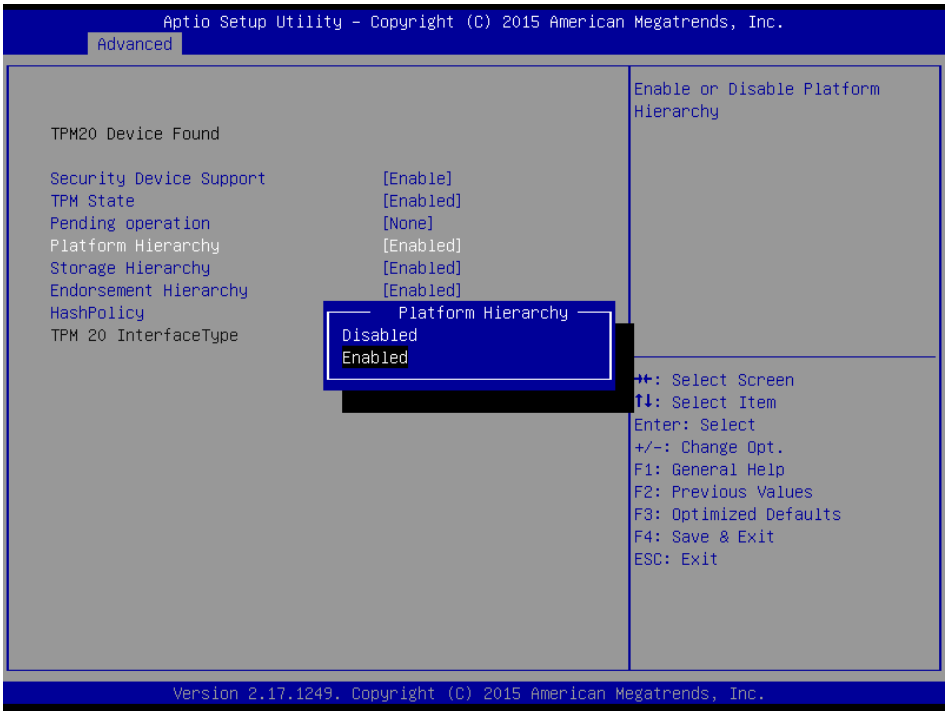
3.6.2.2 Trusted Computing

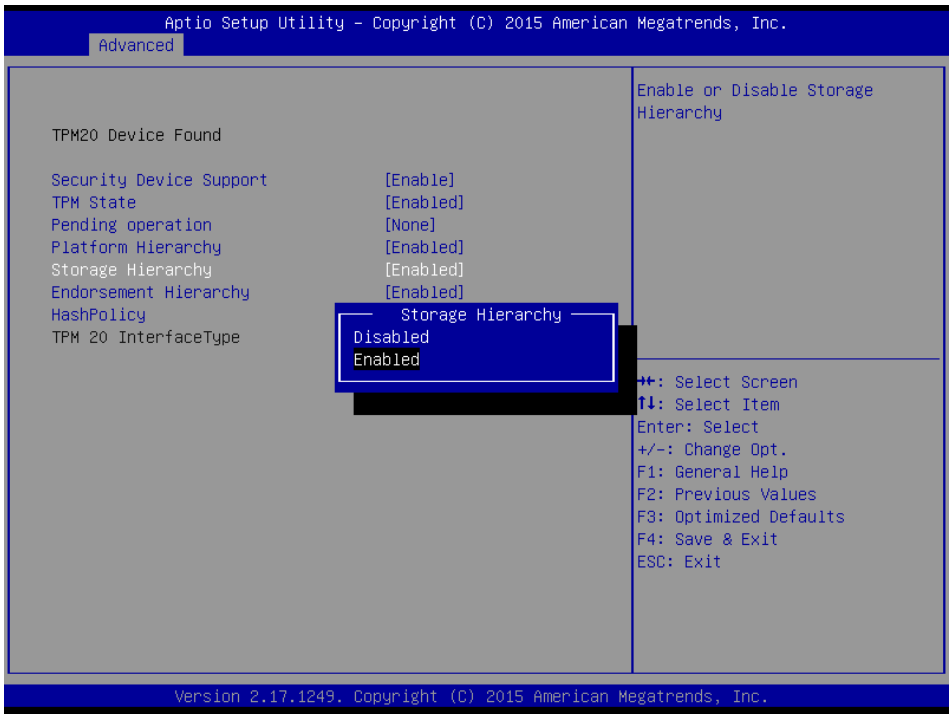


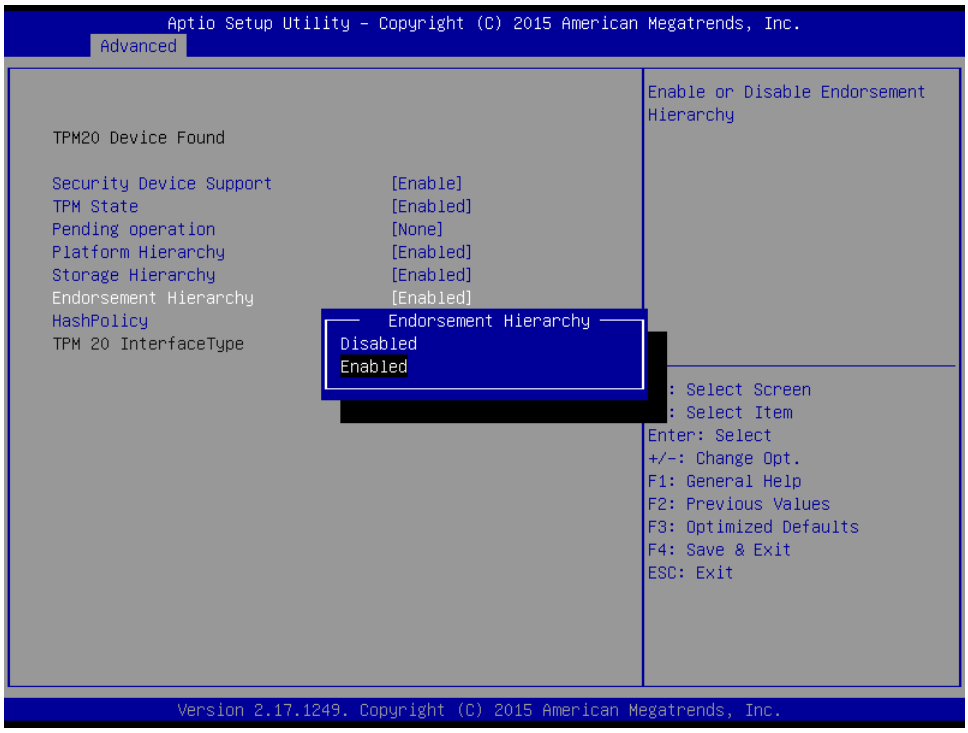


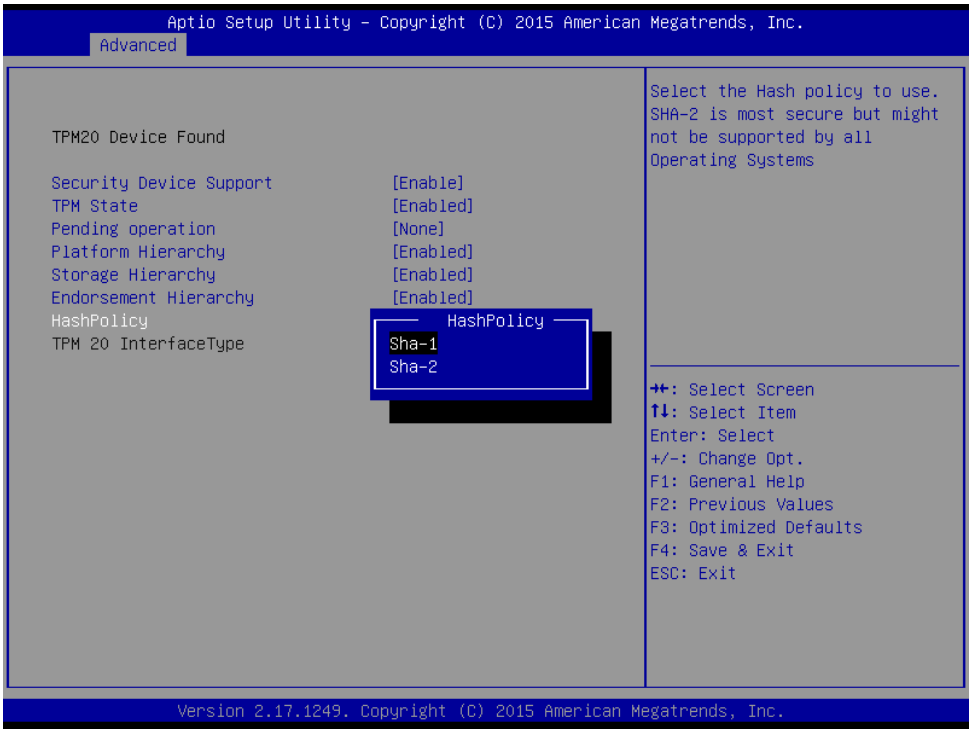

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
TPM20 Device Found
Security Device Support [Enable]
TPM State [Enabled]
Pending operation [None]
Platform Hierarchy [Enabled]
Storage Hierarchy [Enabled]
Endorsement Hierarchy [Enabled]
HashPolicy
TPM 20 InterfaceType
TPM State
Disabled
Enabled
Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
TPM20 Device Found
Security Device Support [Enable]
TPM State [Enabled]
Pending operation [None]
Platform Hierarchy [Enabled]
Storage Hierarchy [Enabled]
Endorsement Hierarchy [Enabled]
HashPolicy
TPM 20 InterfaceType
Pending operation
None
TPM Clear
Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
TPM20 Device Found
Security Device Support [Enable]
TPM State [Enabled]
Pending operation [None]
Platform Hierarchy [Enabled]
Storage Hierarchy [Enabled]
Endorsement Hierarchy [Enabled]
HashPolicy
TPM 20 InterfaceType
Platform Hierarchy
Disabled
Enabled
Enable or Disable Platform Hierarchy
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
TPM20 Device Found
Security Device Support [Enable]
TPM State [Enabled]
Pending operation [None]
Platform Hierarchy [Enabled]
Storage Hierarchy [Enabled]
Endorsement Hierarchy [Enabled]
HashPolicy
TPM 20 InterfaceType
Storage Hierarchy
Disabled
Enabled
Enable or Disable Storage Hierarchy
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

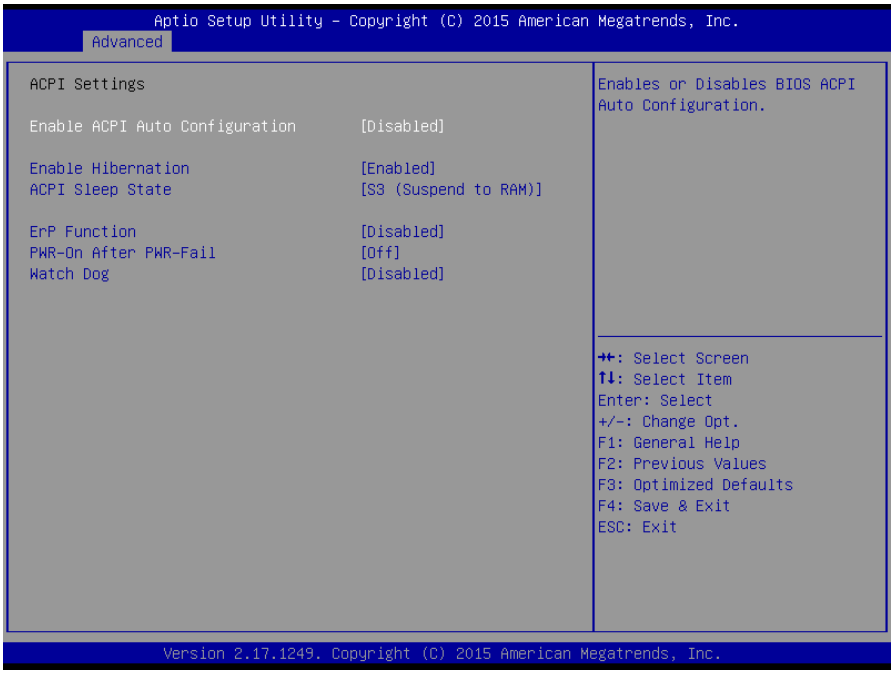


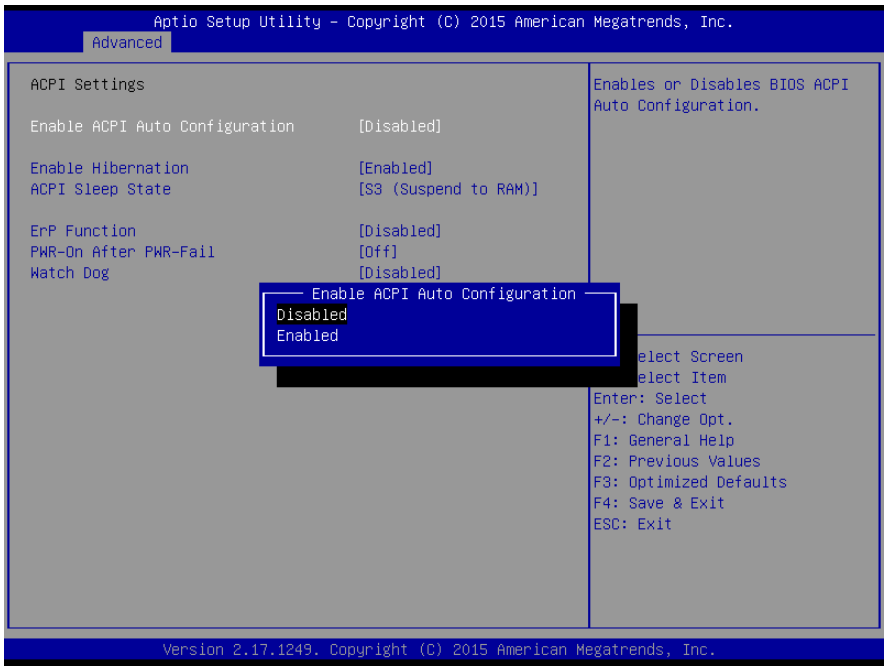


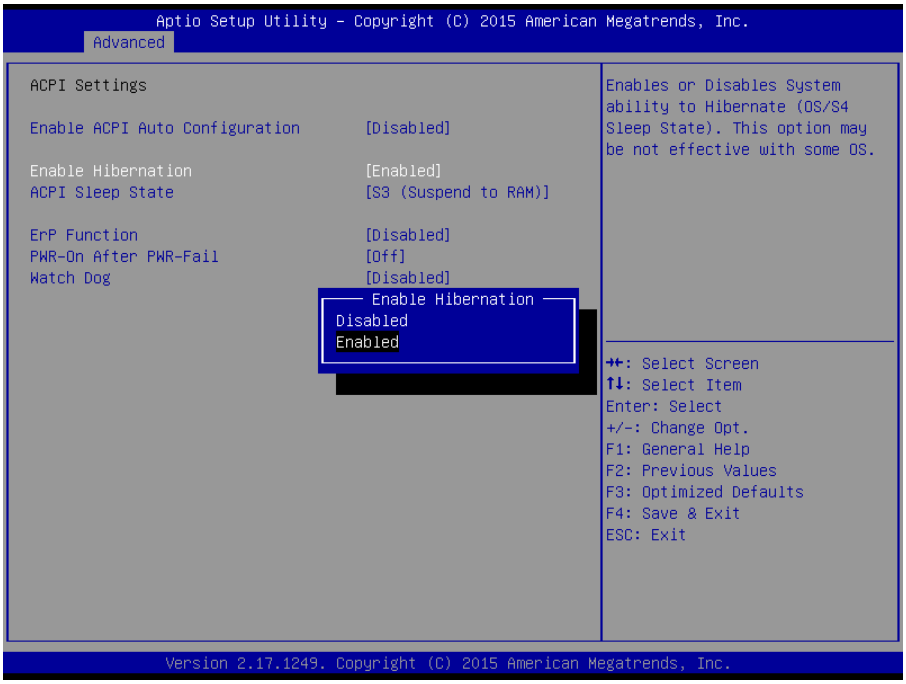
Item	Options	Description
Security Device Support	Disable, Enable**[Default]**	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1Ainterface will not be available.
TPM State	Disabled, Enabled**[Default]**	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to

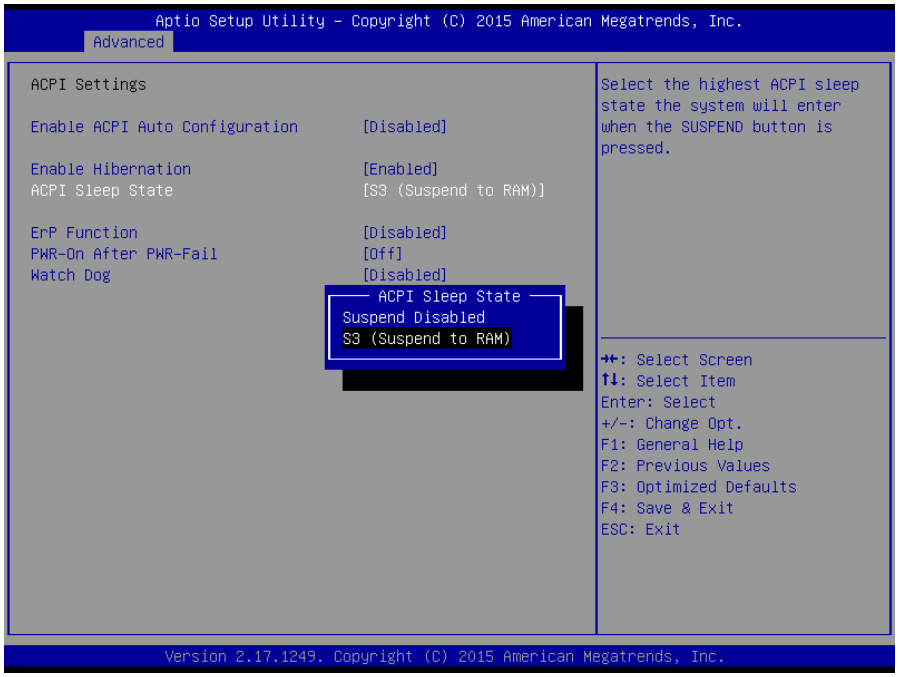
		change State of the Device.
Pending operation	None**[Default]** TPM Clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
Platform Hierarchy	Disabled, Enabled**[Default]**	Enable or Disable Platform Hierarchy.
Endorsement Hierarchy	Disabled, Enabled**[Default]**	Enable or Disable Endorsement Hierarchy.
HashPolicy	Sha-1**[Default]** Sha-2	Select the Hash policy to use. SHA-2 is most secure but might not be supported by all Operating Systems.

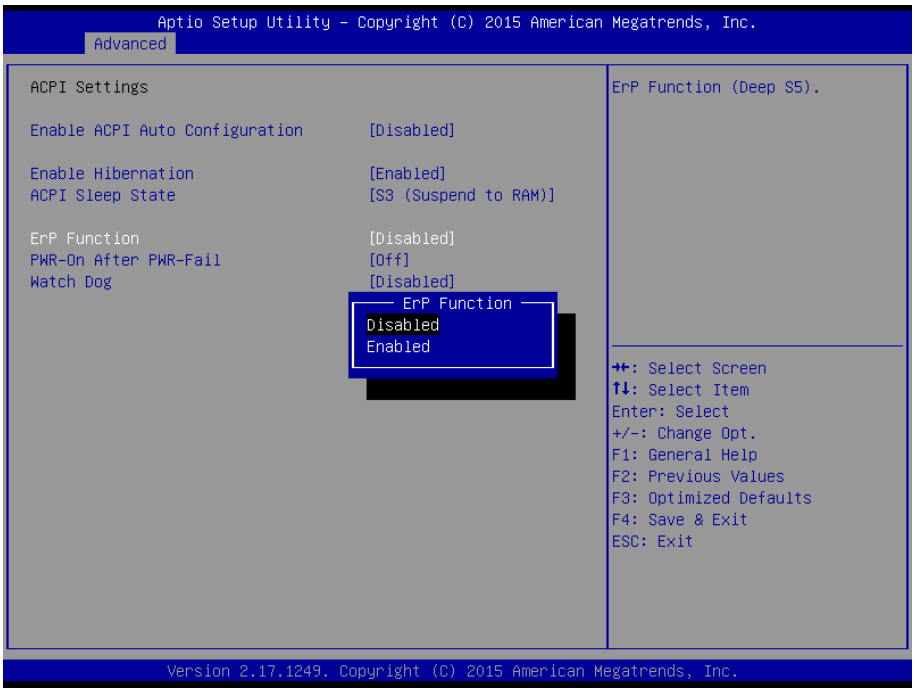
3.6.2.3 APCI Settings

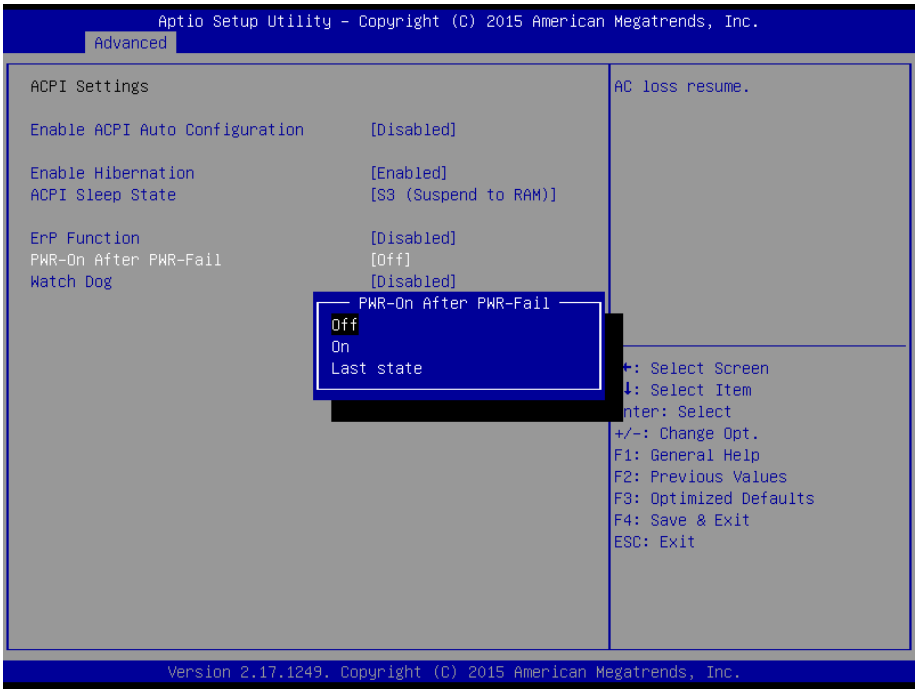


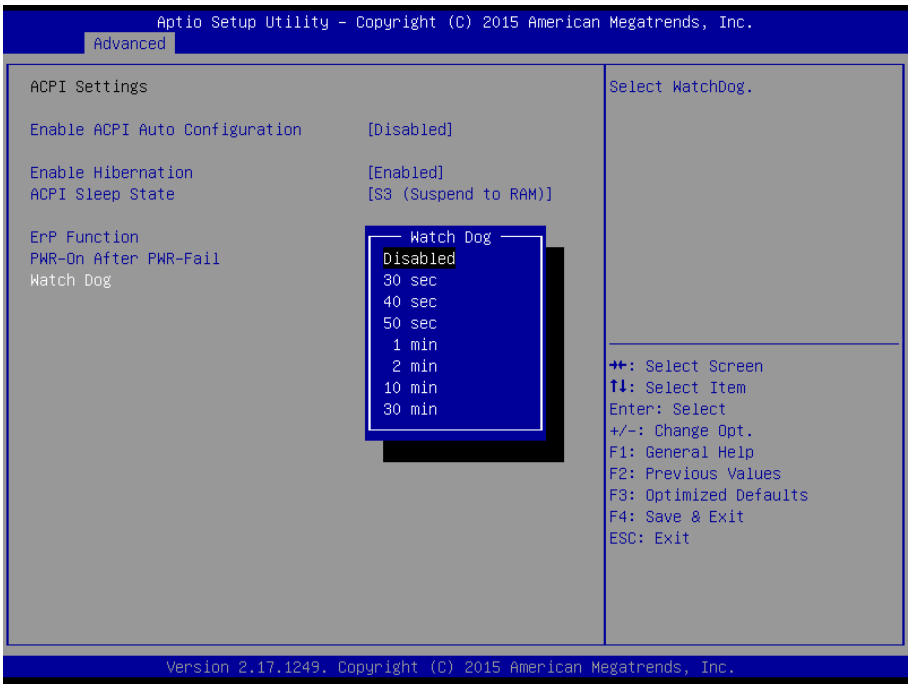



Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
ACPI Settings
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to RAM)]
ErP Function [Disabled]
PWR-On After PWR-Fail [Off]
Watch Dog [Disabled]
Enable Hibernation
Disabled
Enabled
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
ACPI Settings
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to RAM)]
ErP Function [Disabled]
PWR-On After PWR-Fail [Off]
Watch Dog [Disabled]
ACPI Sleep State
Suspend Disabled
S3 (Suspend to RAM)
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
ACPI Settings
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to RAM)]
ErP Function [Disabled]
PWR-On After PWR-Fail [Off]
Watch Dog [Disabled]
ErP Function
Disabled
Enabled
ErP Function (Deep S5).
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

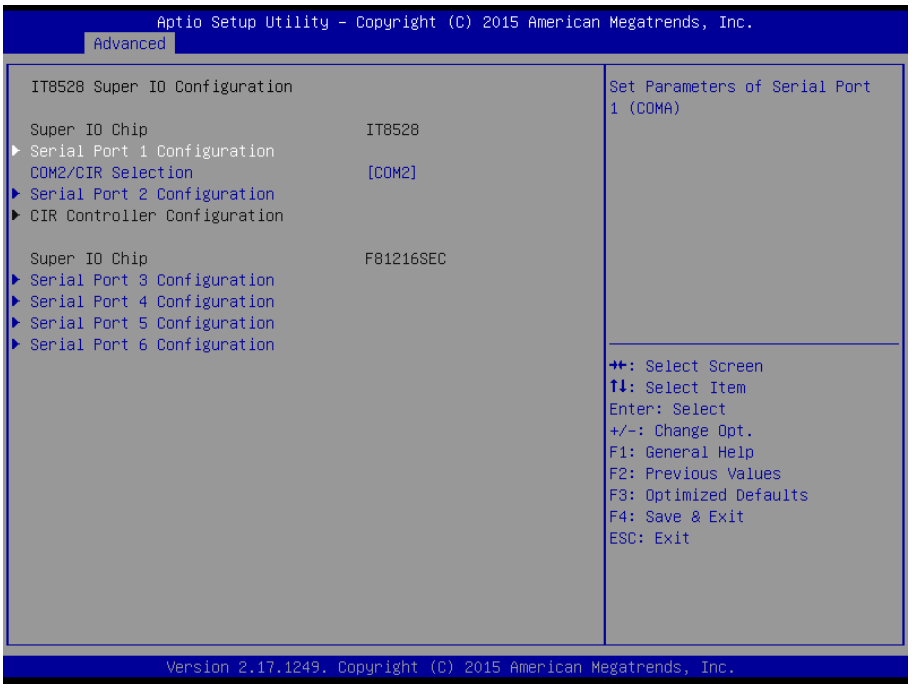

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
ACPI Settings
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to RAM)]
ErP Function [Disabled]
PWR-On After PWR-Fail [Off]
Watch Dog [Disabled]
PWR-On After PWR-Fail
Off
On
Last state
AC loss resume.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

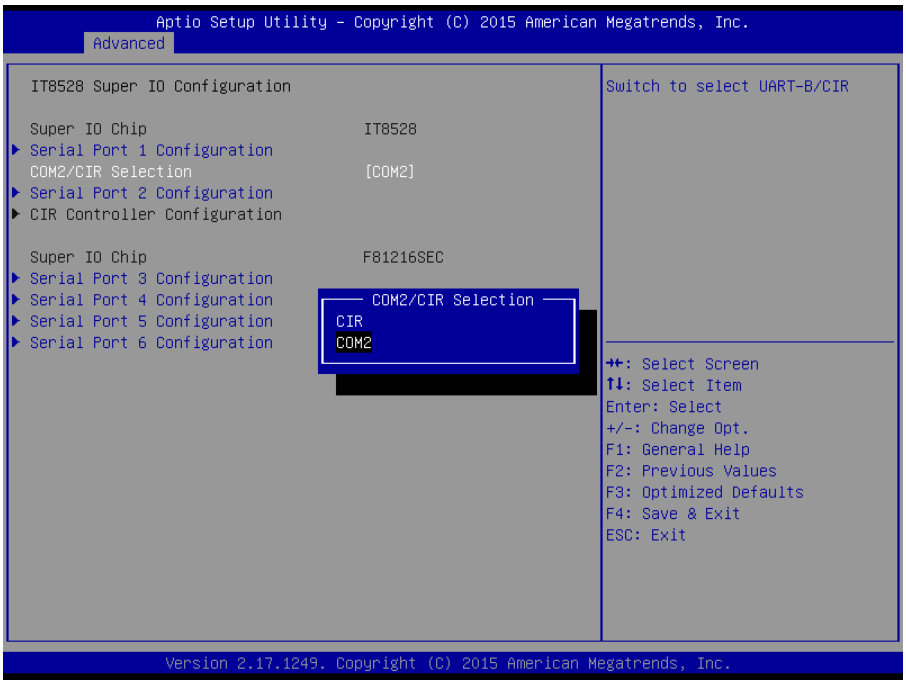


Item	Options	Description
Enable ACPI Auto Configuration	Disabled**[Default]**, Enabled	Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled Enabled**[Default]**,	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	Suspend Disabled, S3 (Suspend to RAM)**[Default]**	Select the highest ACPI sleep state the system will enter when the SUSPEDN button is pressed.
ErP Function	Disabled**[Default]**, Enabled	ErP Function (Deep S5).
PWR-On After PWR-Fail	Off**[Default]** On Last state	AC loss resume.
Watch Dog	Disabled**[Default]**, 30 sec 40 sec 50 sec 1 min 2 min 10 min 30 min	Select WatchDog.

3.6.2.4 IT8528 Super IO Configuration

You can use this item to set up or change the IT8528 Super IO configuration for serial ports. Please refer to 3.6.2.4.1~ 3.6.2.4.6 for more information.

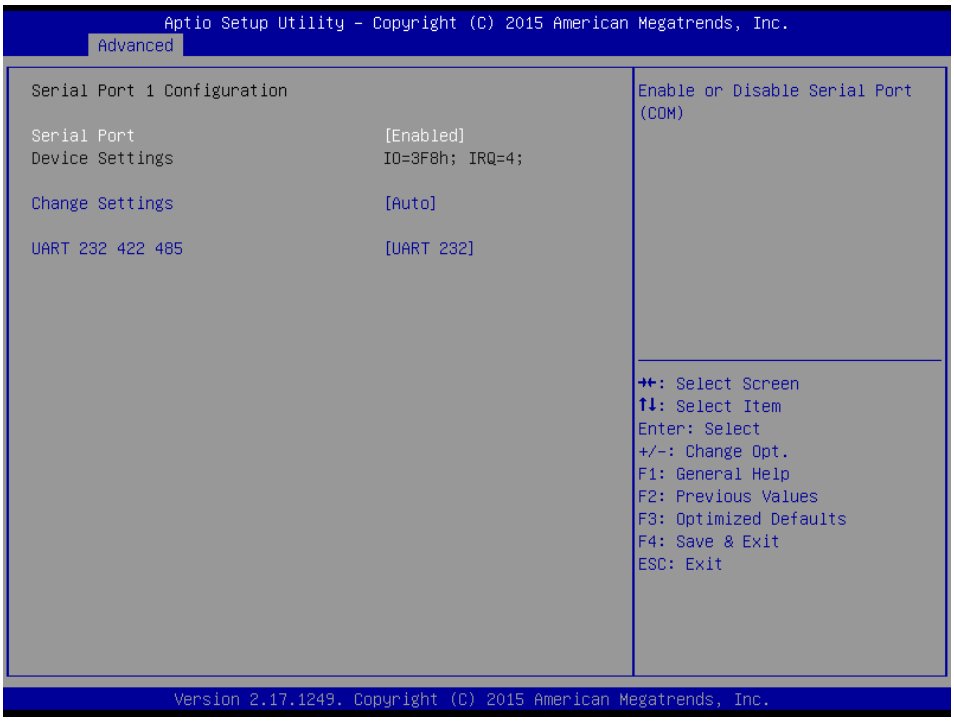


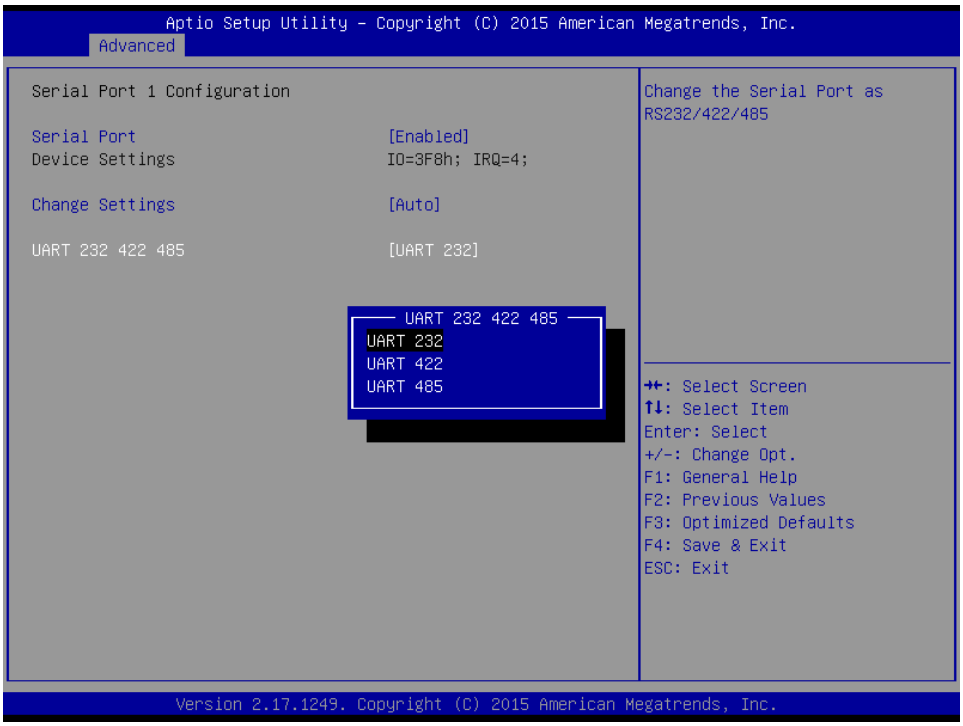


Item	Options	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).	
COM2/CIR Selection	CIR COM2**[Default]**,	Switch to select UART-B/CIR.

Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME).
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMF).

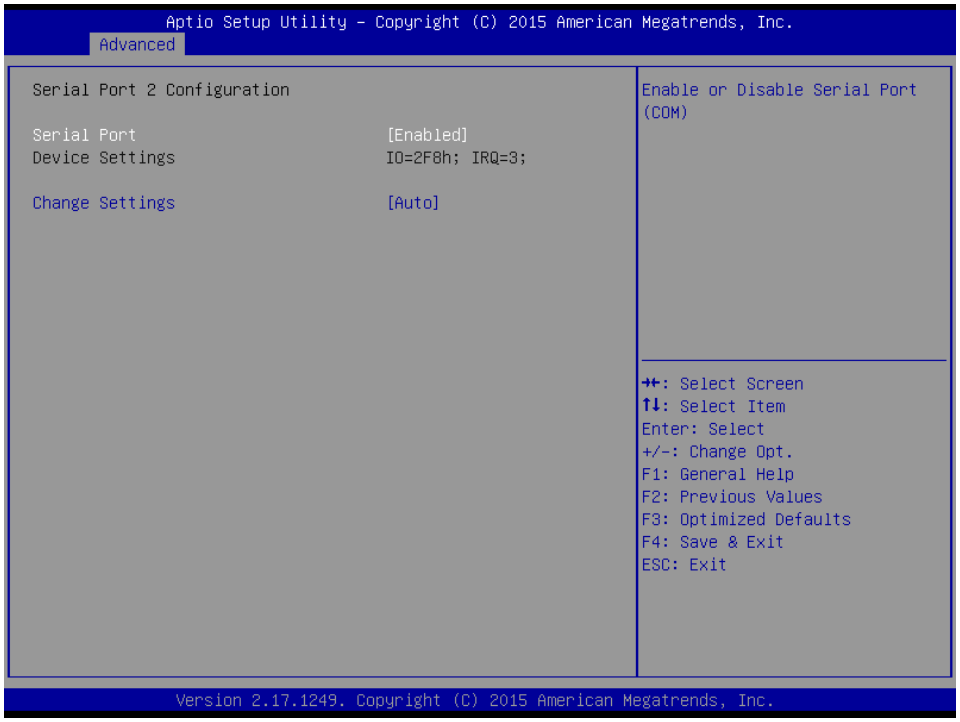
3.6.2.4.1 Serial Port 1 Configuration





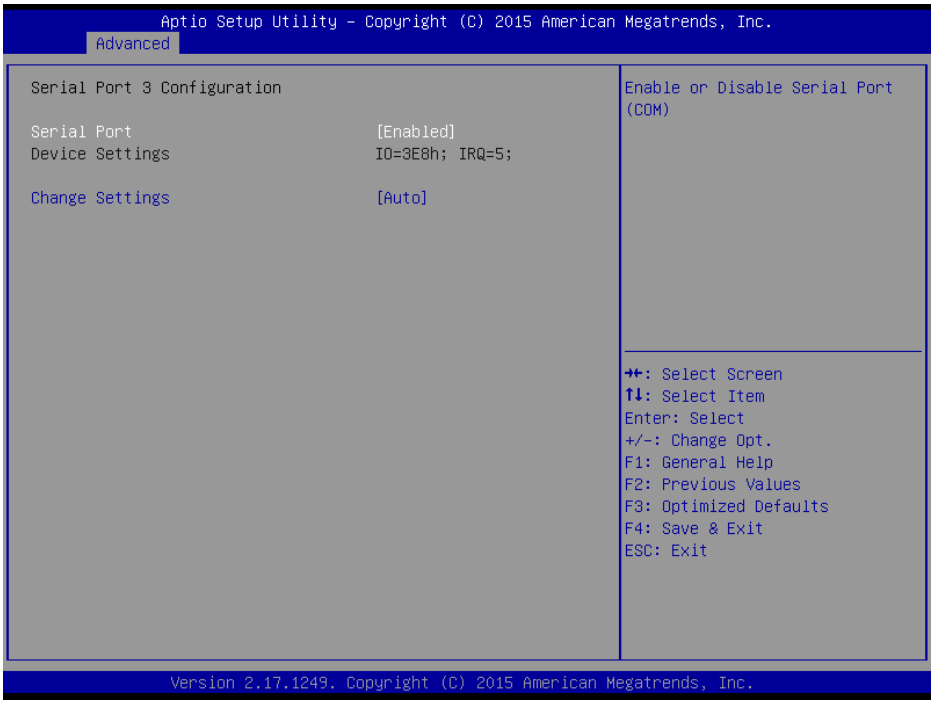
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select an optimal setting for Super IO Device.
UART 232 422 485	UART 232**[Default]**, UART 422, UART 485	Change the Serial Port as RS232/ 422/ 485

3.6.2.4.2 Serial Port 2 Configuration



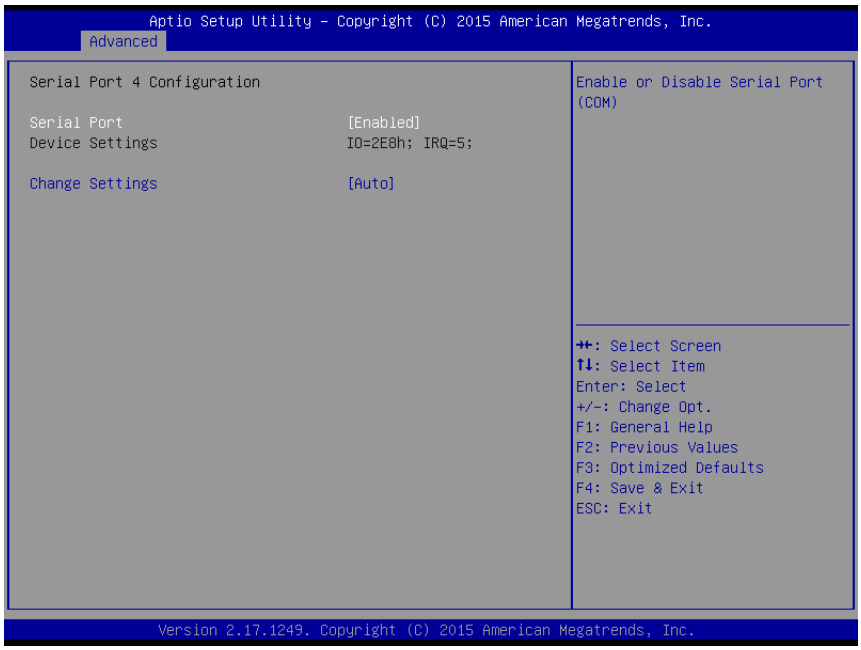
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select an optimal setting for super IO Device.

3.6.2.4.3 Serial Port 3 Configuration



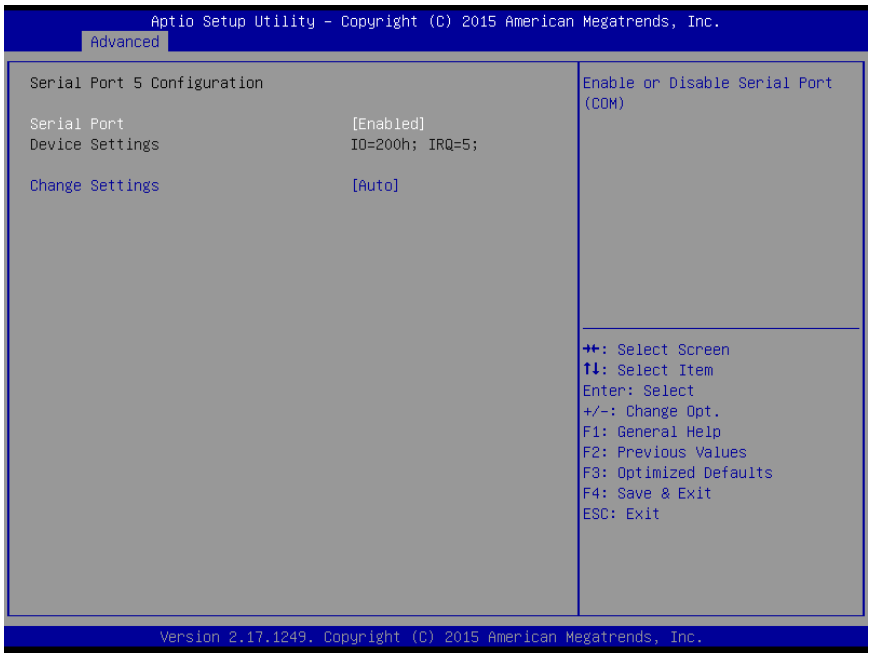
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=3E8h; IRQ=5; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12; IO=200h; IRQ=3,4,5,6,7,10,11,12; IO=208h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for super IO Device.

3.6.2.4.4 Serial Port 4 Configuration



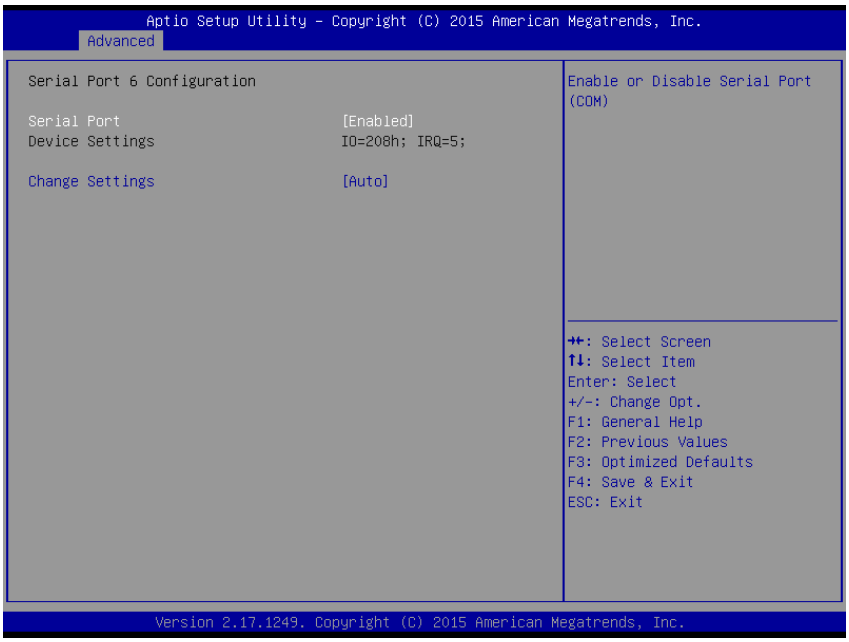
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=2E8h; IRQ=5; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12; IO=200h; IRQ=3,4,5,6,7,10,11,12; IO=208h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for super IO Device.

3.6.2.4.5 Serial Port 5 Configuration



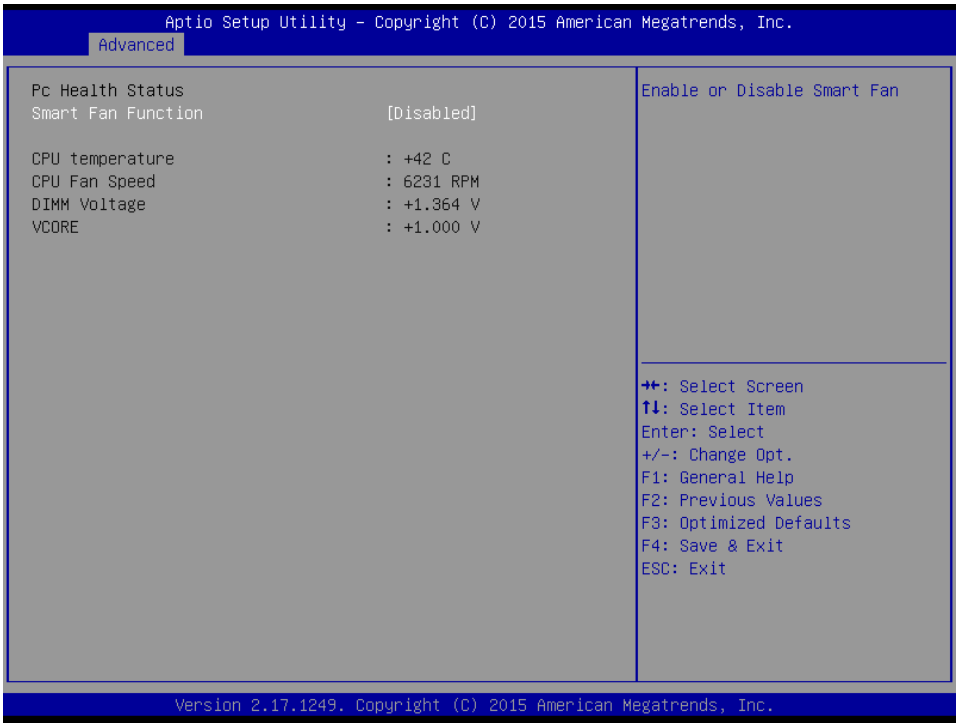
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=200h; IRQ=5; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12; IO=200h; IRQ=3,4,5,6,7,10,11,12; IO=208h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for super IO Device.

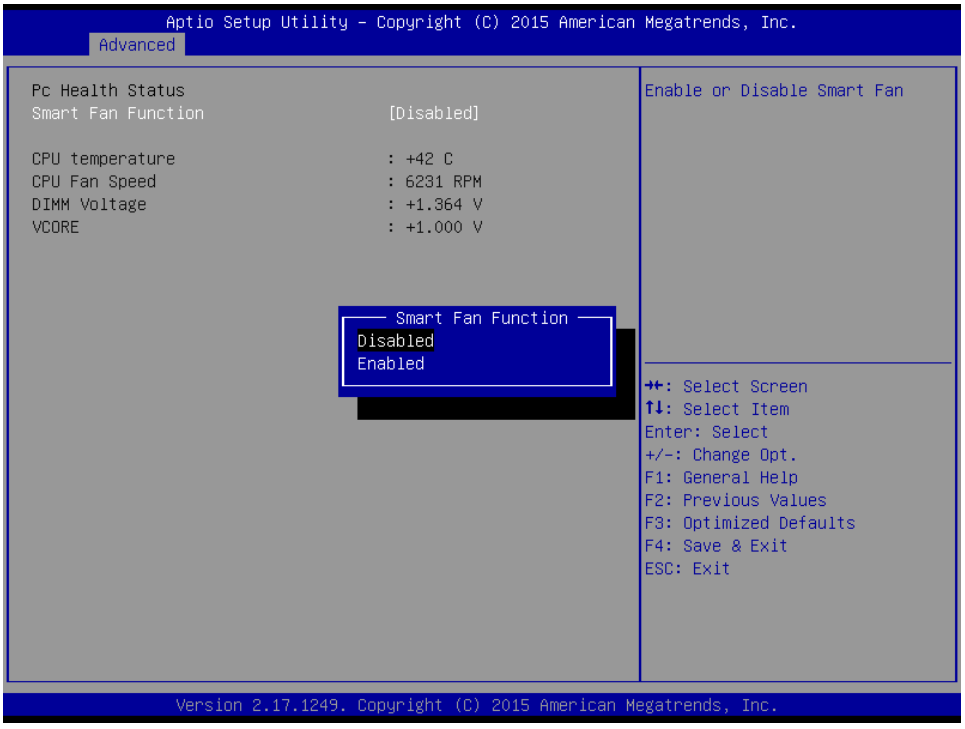
3.6.2.4.6 Serial Port 6 Configuration



Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=208h; IRQ=5; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12; IO=200h; IRQ=3,4,5,6,7,10,11,12; IO=208h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for super IO Device.

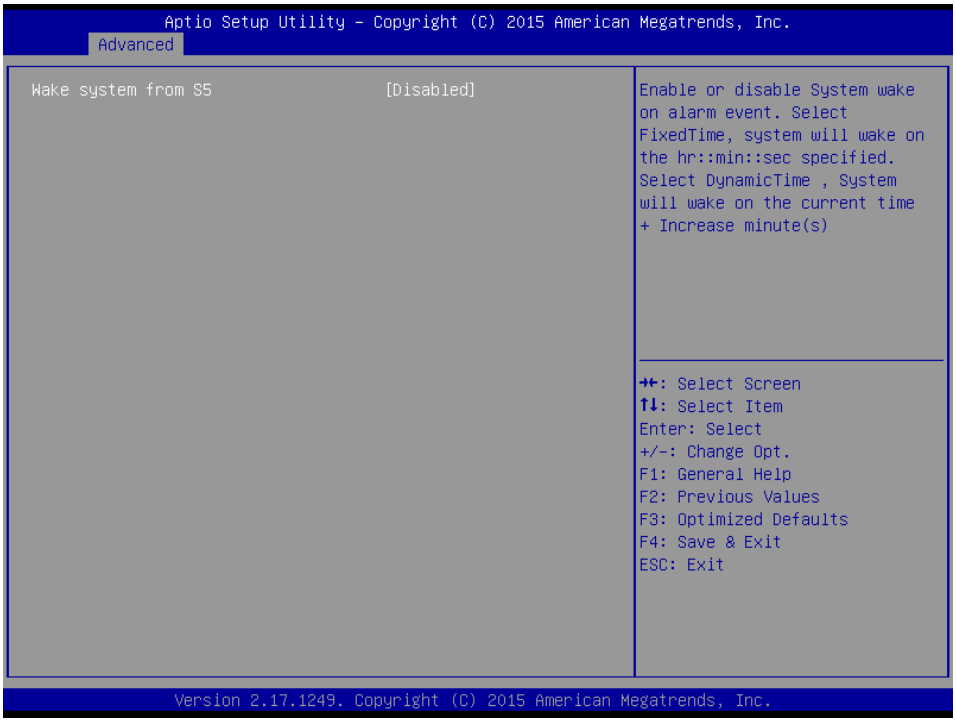
3.6.2.5 H/W Monitor

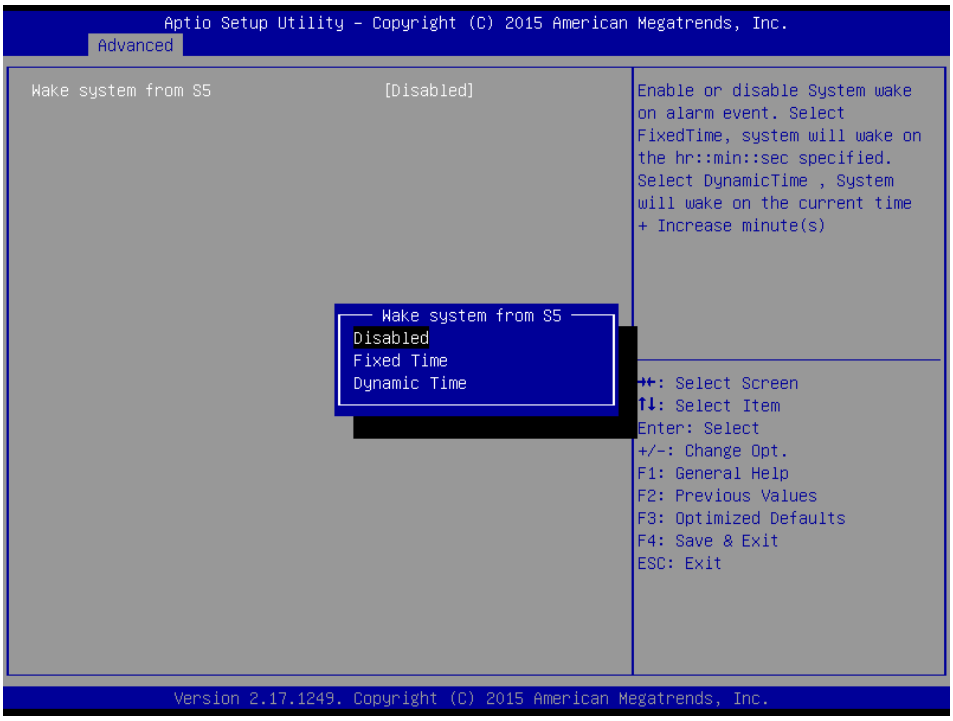




Item	Options	Description
Smart Fan Function	Enabled, Disabled**[Default]**	Enable or Disable Smart Fan.

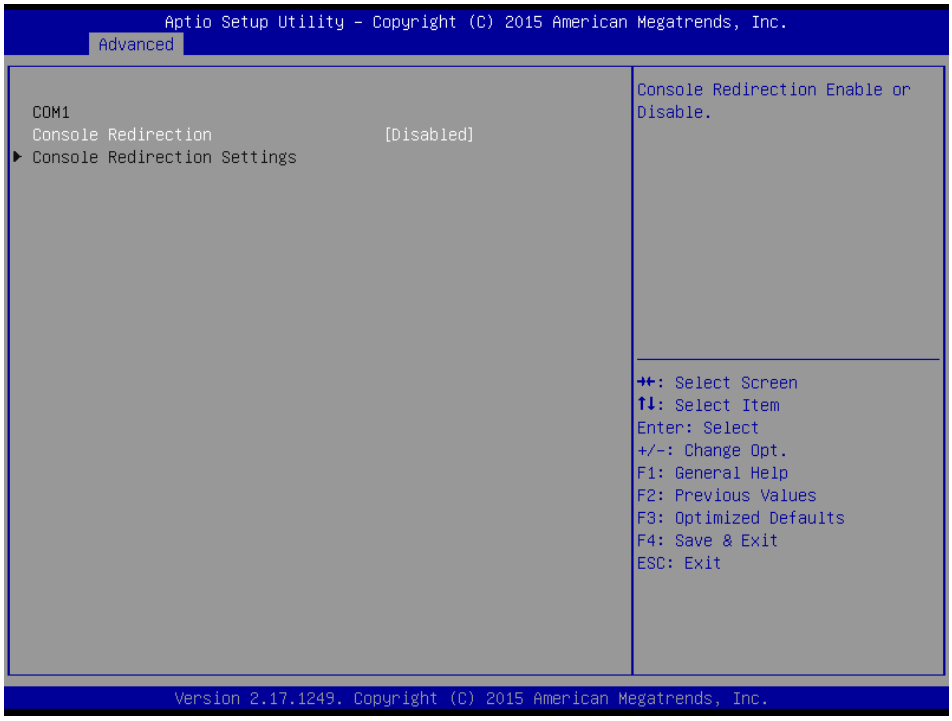
3.6.2.6 S5 RTC Wake Settings

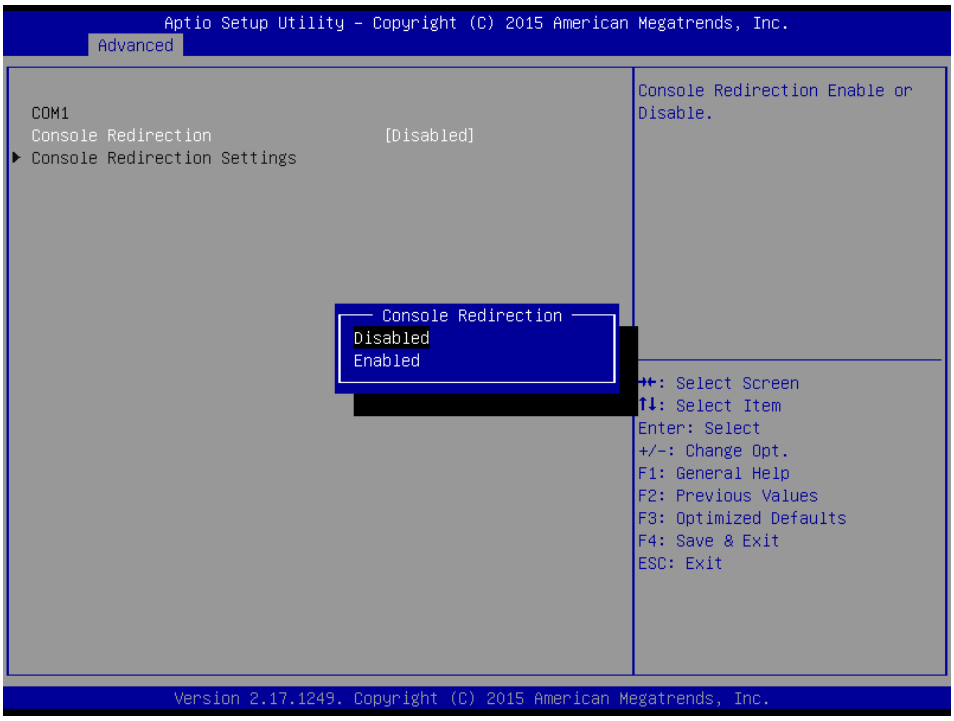




Item	Options	Description
Wake system from S5	Disabled**[Default]**, Fixed Time Dynamic Time	Enable or disable System wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select Dynamic Time, System will wake on the current time + Increase minute(s).

3.6.2.7 Serial Port Console Redirection

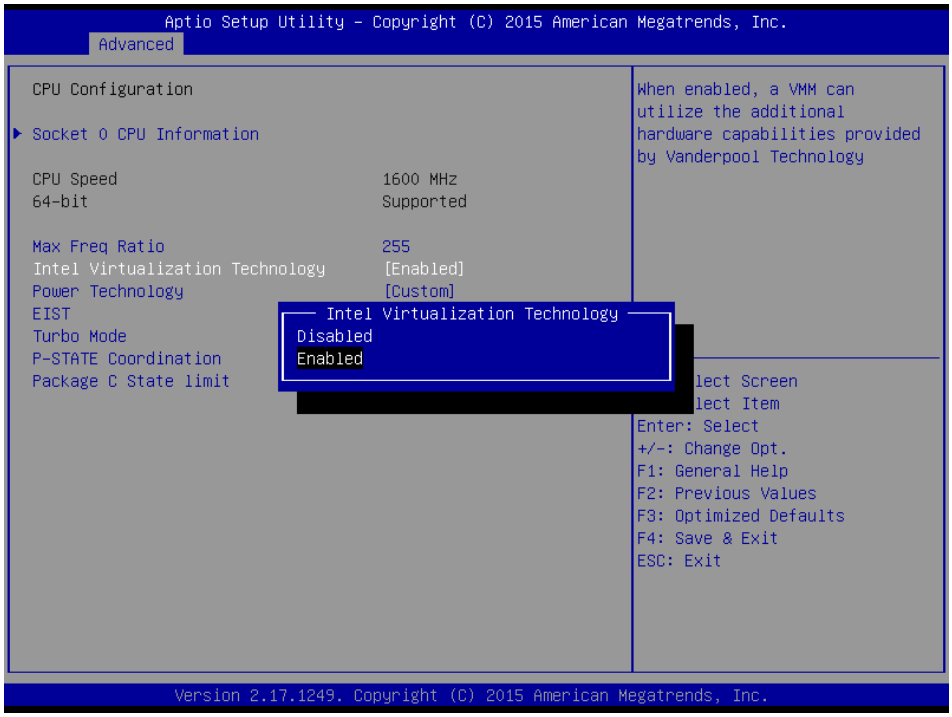


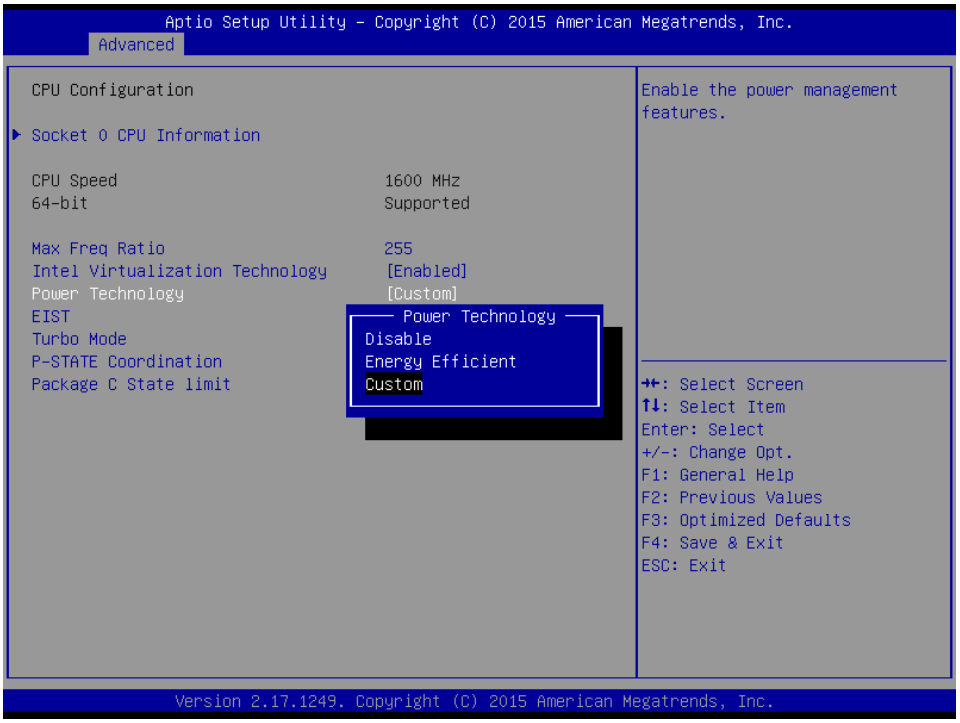


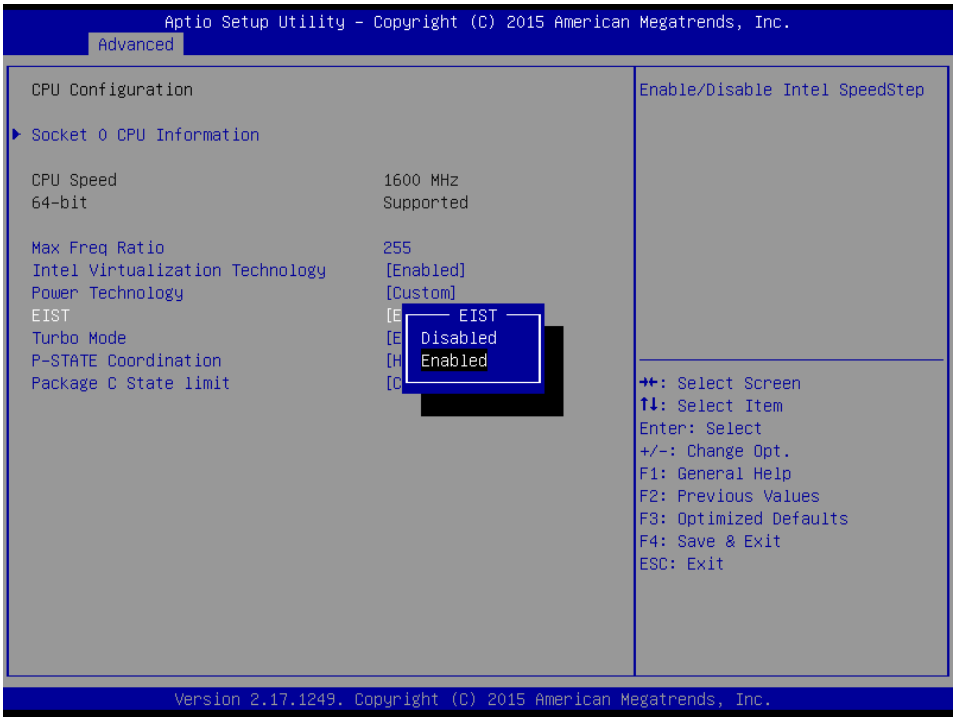
Item	Options	Description
Console Redirection	Disabled**[Default]**, Enabled	Console Redirection Enable or Disable.

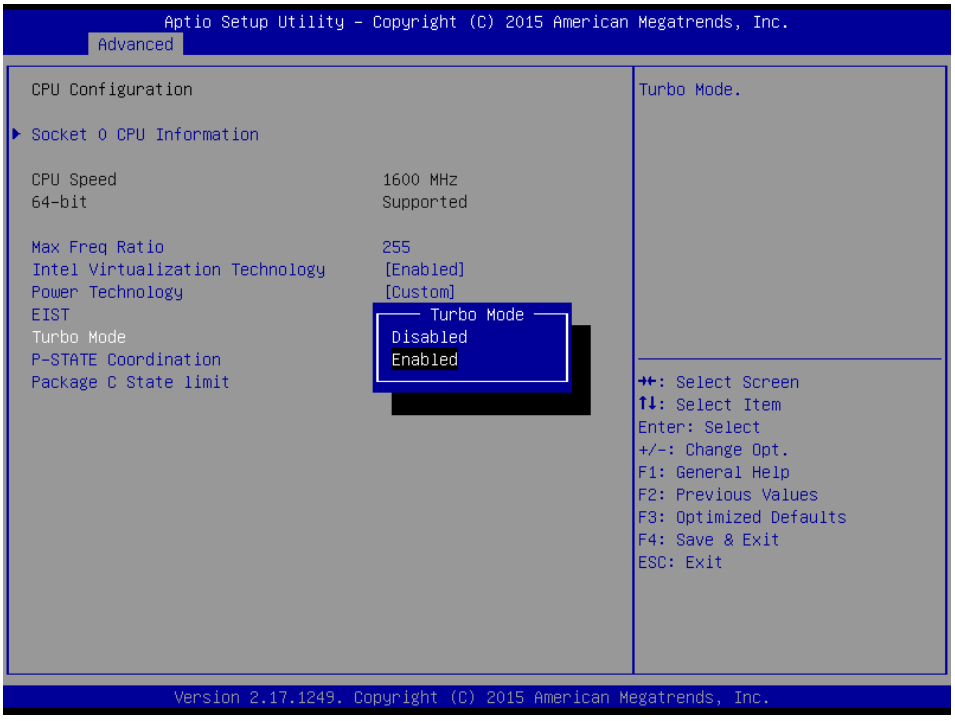
3.6.2.8 CPU Configuration

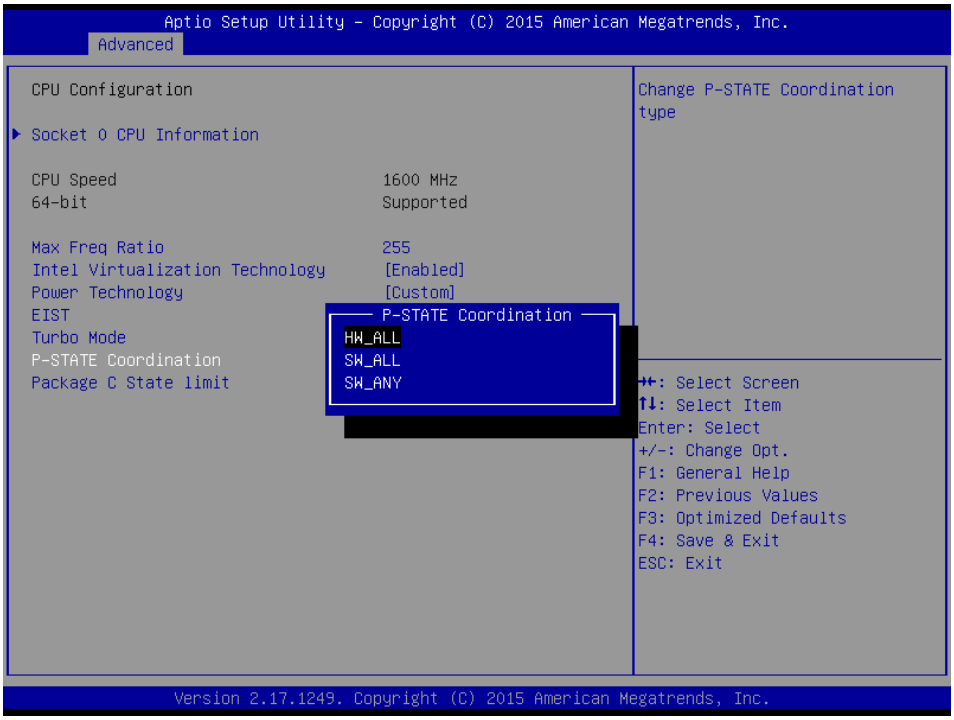
Use the CPU configuration menu to view detailed CPU specification and configure the CPU.

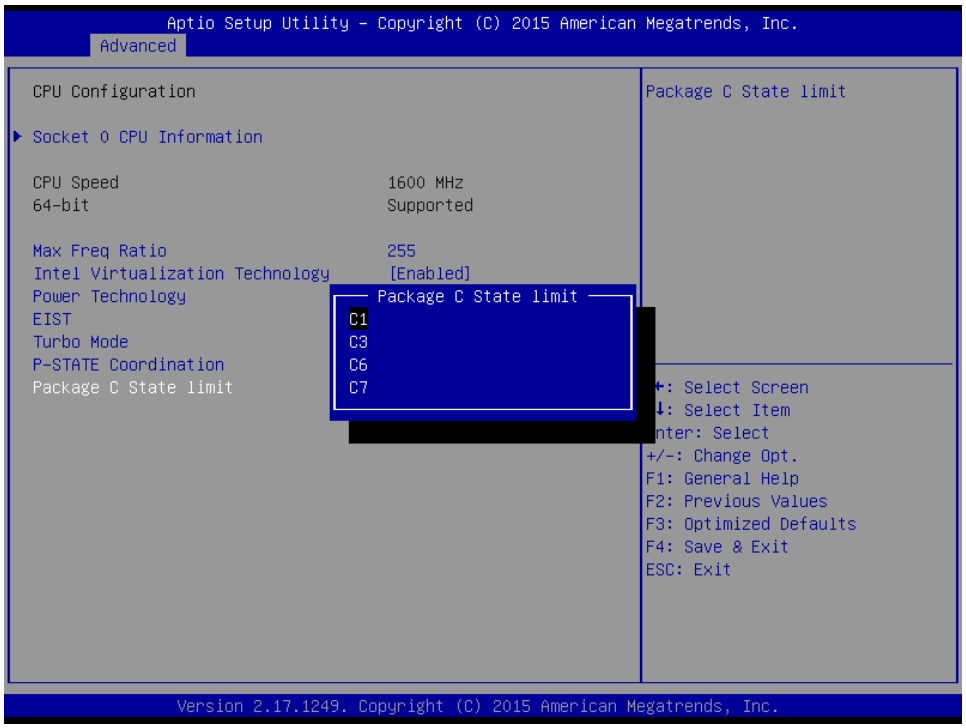





Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
CPU Configuration
Socket 0 CPU Information
CPU Speed 1600 MHz
64-bit Supported
Max Freq Ratio 255
Intel Virtualization Technology [Enabled]
Power Technology [Custom]
EIST
Turbo Mode
P-STATE Coordination
Package C State limit
EIST
Disabled
Enabled
Enable/Disable Intel SpeedStep
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
CPU Configuration
Socket 0 CPU Information
CPU Speed 1600 MHz
64-bit Supported
Max Freq Ratio 255
Intel Virtualization Technology [Enabled]
Power Technology [Custom]
EIST
Turbo Mode
P-STATE Coordination
Package C State limit
Turbo Mode
Disabled
Enabled
Turbo Mode.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

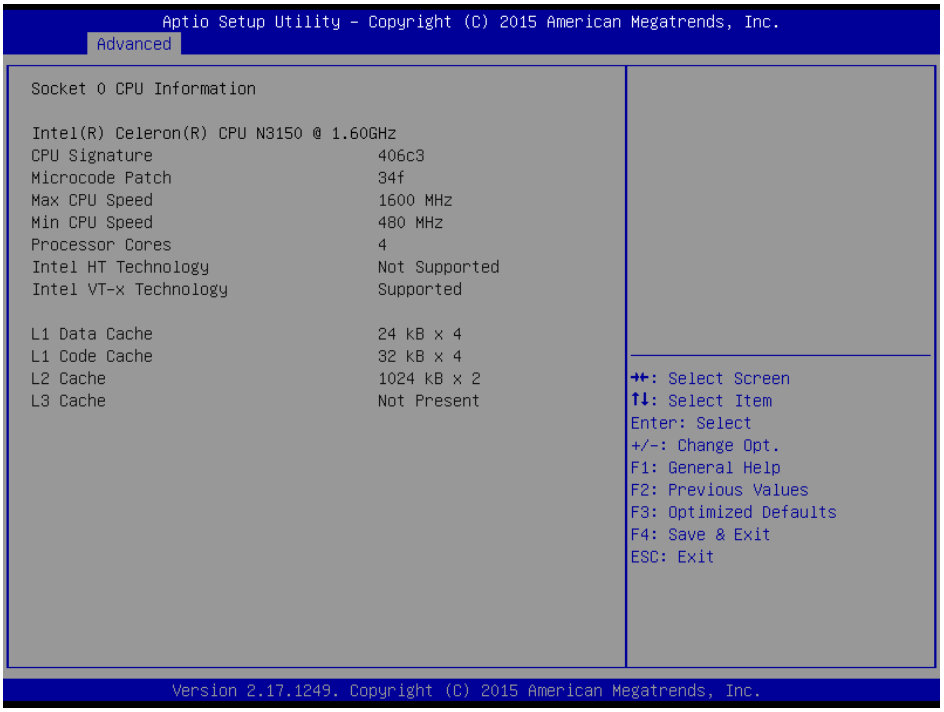




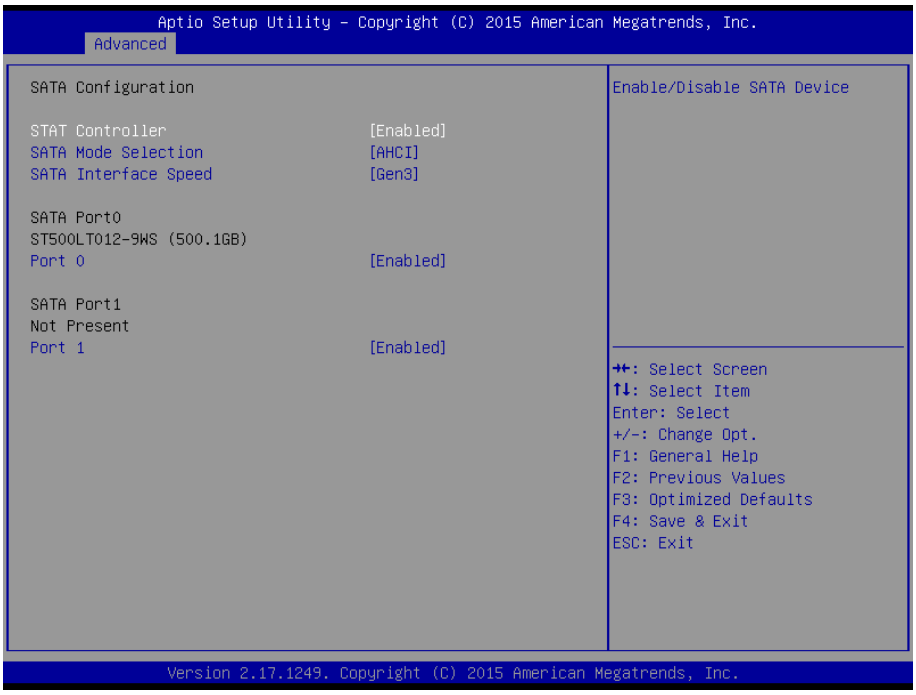
Item	Options	Description
Max Freq Ratio	0-255	Max Freq Ratio.
Intel Virtualization Technology	Disabled, Enabled**[Default]**	When enabled, a VMM can utilize the additional hardware capabilities provided by Virtualization Technology.
Power Technology	Disabled, Energy Efficient Custom**[Default]**	Enable the power management features.

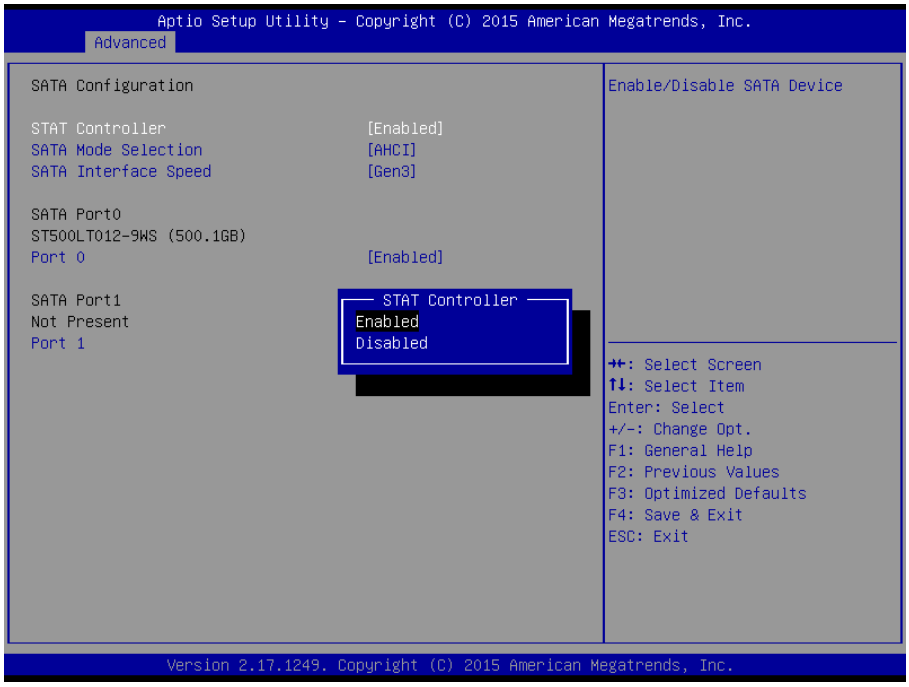
EIST	Disabled, Enabled**[Default]**	Enable/Disable Intel SpeedStep.
Turbo Mode	Disabled, Enabled**[Default]**	Turbo Mode.
P-STATE Coordination	HW_ALL**[Default]** SW_ALL SW_ANY	Change P-STATE Coordination type.
Package C State limit	C1**[Default]**/3/6/7	Package C State limit.

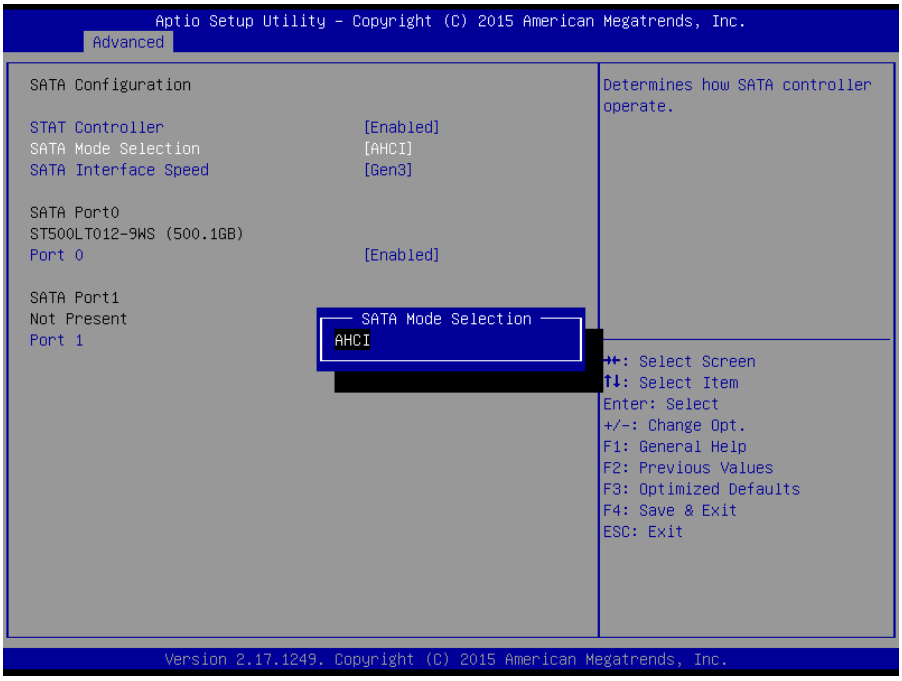
3.6.2.8.1 Socket 0 CPU Information

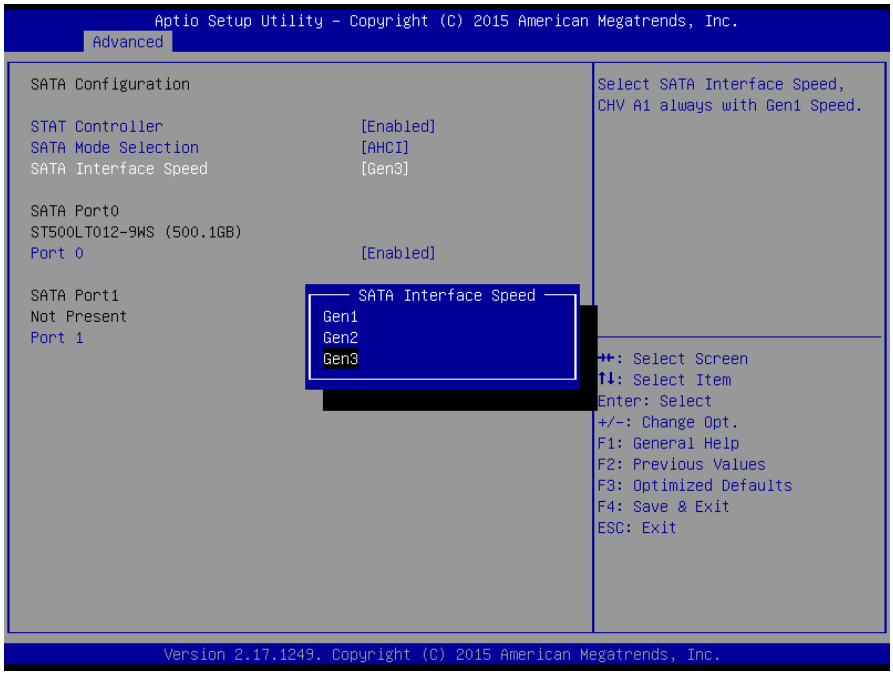


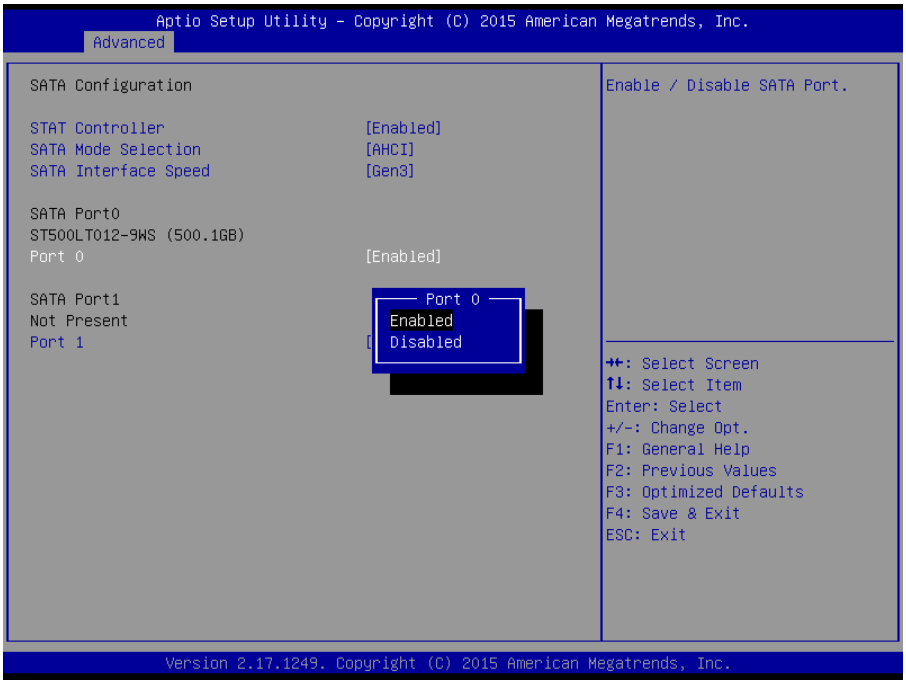
3.6.2.9 SATA Configuration

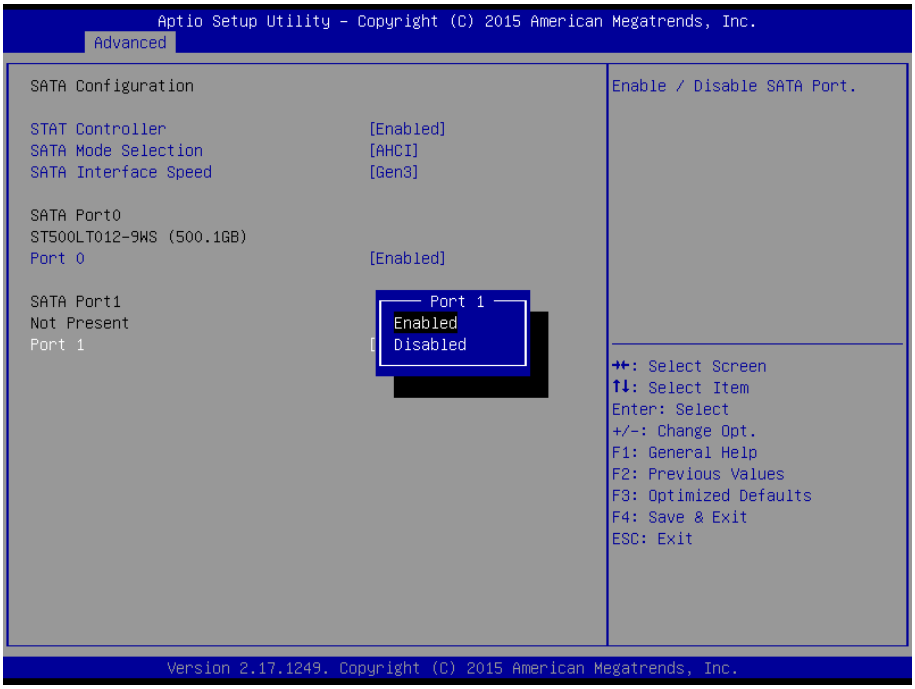





Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
SATA Configuration
STAT Controller [Enabled]
SATA Mode Selection [AHCI]
SATA Interface Speed [Gen3]
SATA Port0
ST500LT012-9WS (500.1GB)
Port 0 [Enabled]
SATA Port1
Not Present
Port 1
SATA Mode Selection
AHCI
Determines how SATA controller operate.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
SATA Configuration
STAT Controller [Enabled]
SATA Mode Selection [AHCI]
SATA Interface Speed [Gen3]
SATA Port0
ST500LT012-9WS (500.1GB)
Port 0 [Enabled]
SATA Port1
Not Present
Port 1
SATA Interface Speed
Gen1
Gen2
Gen3
Select SATA Interface Speed, CHV A1 always with Gen1 Speed.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

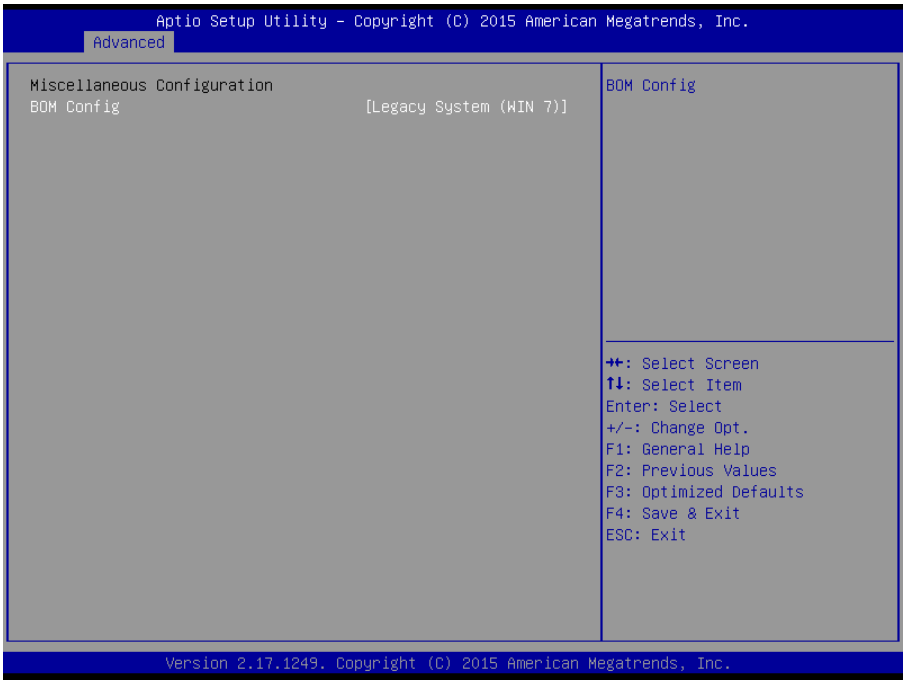


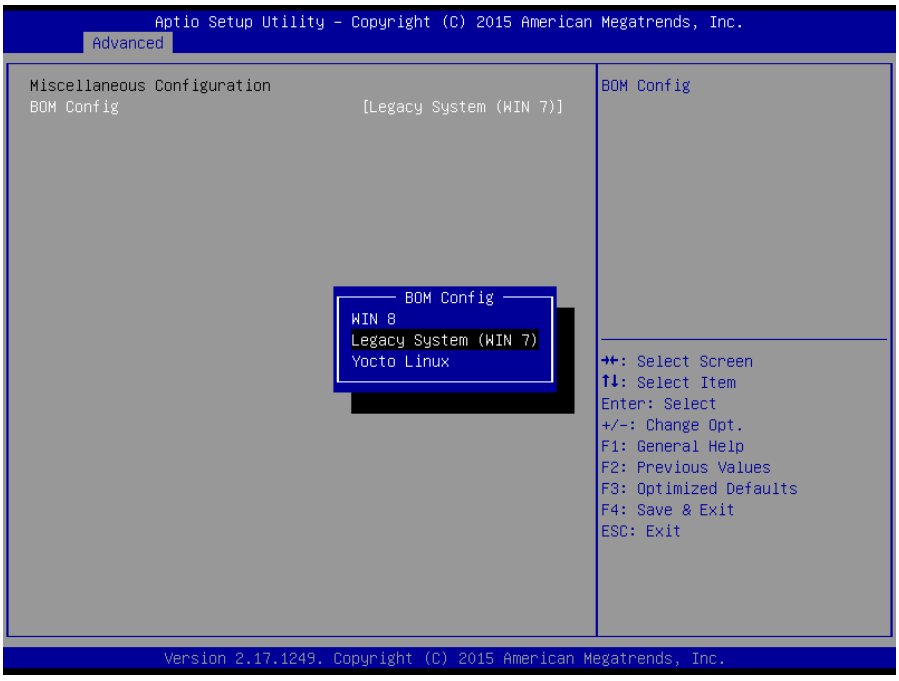


Item	Options	Description
SATA Controller	Disabled, Enabled**[Default]**	Enable/Disable SATA Device.
SATA Mode Selection	AHCI**[Default]**	Determines how SATA controller operate.
SATA Interface Speed	Gen1 Gen2 Gen3**[Default]**	Select SATA Interface Speed, CHV A1 always with Gen 1 Speed.

Port0/1	Disabled, Enabled**[Default]**	Enable/Disable SATA Port.

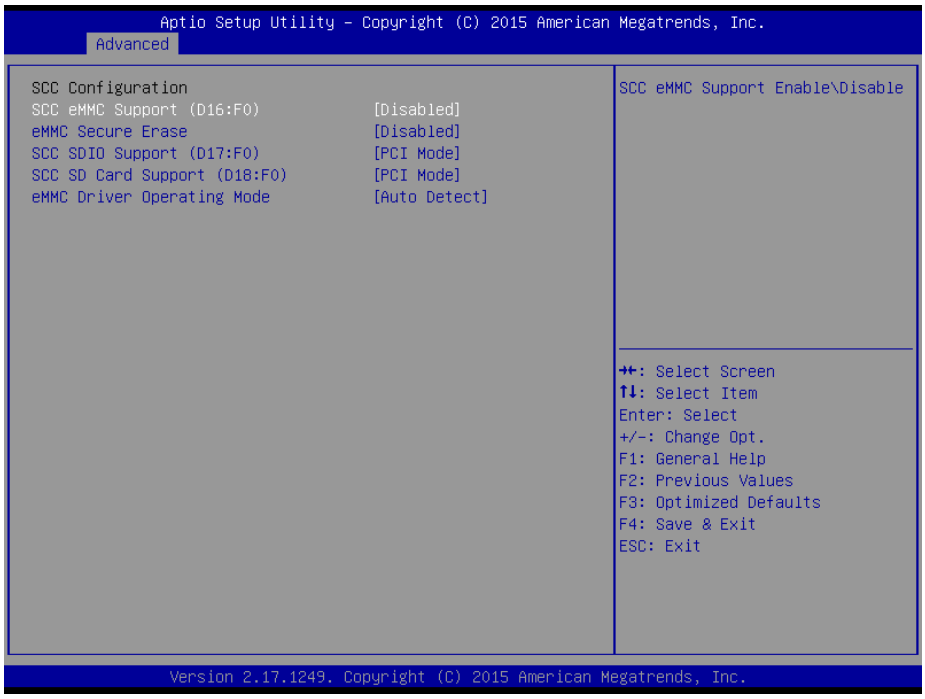
3.6.2.10 Miscellaneous Configuration

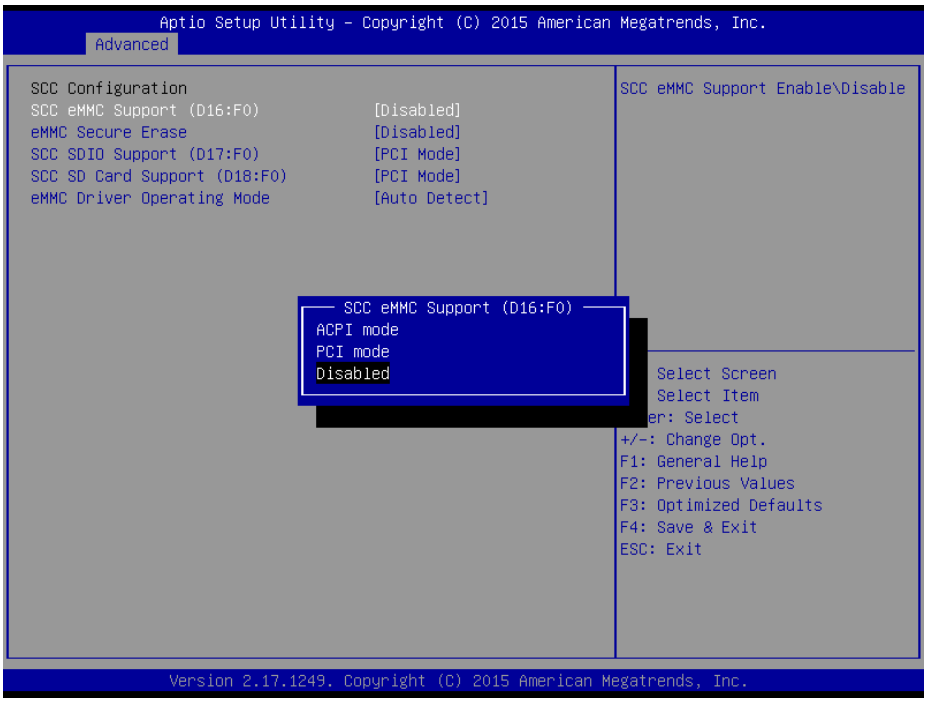


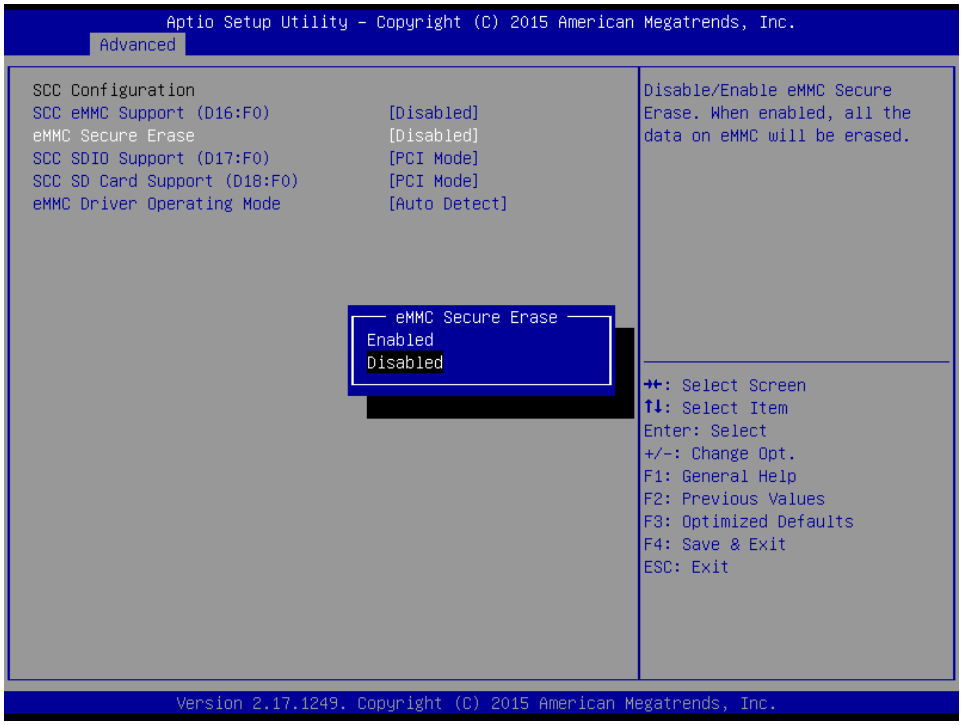


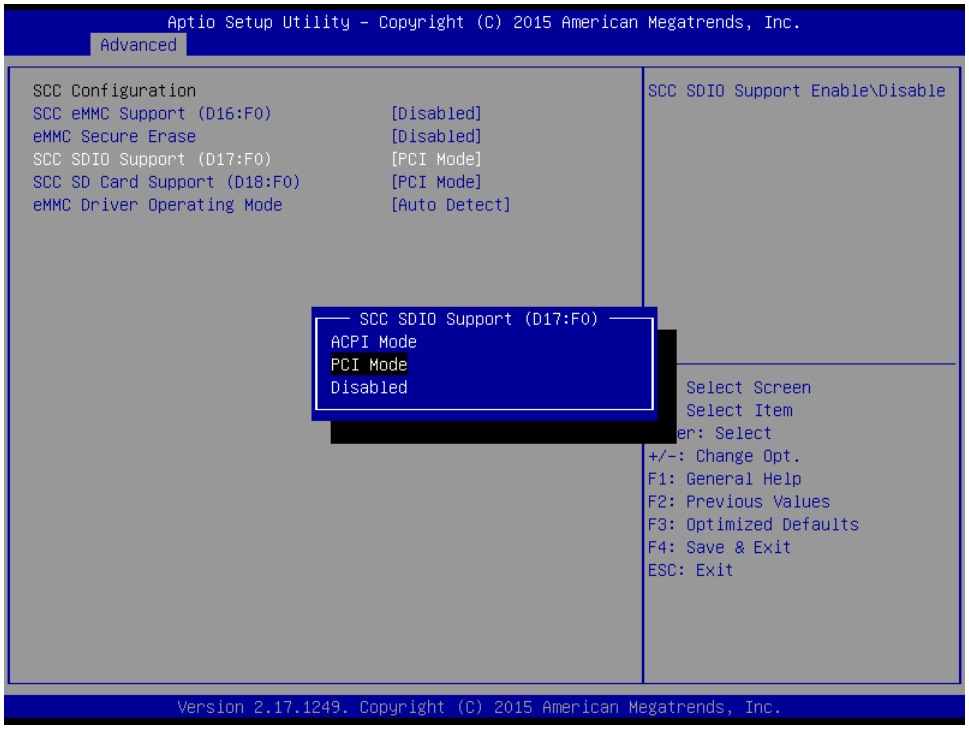
Item	Options	Description
BOM Config	Win8 Legacy System (WIN 7)**[Default]** Yocto Linux	Select OS type to install.

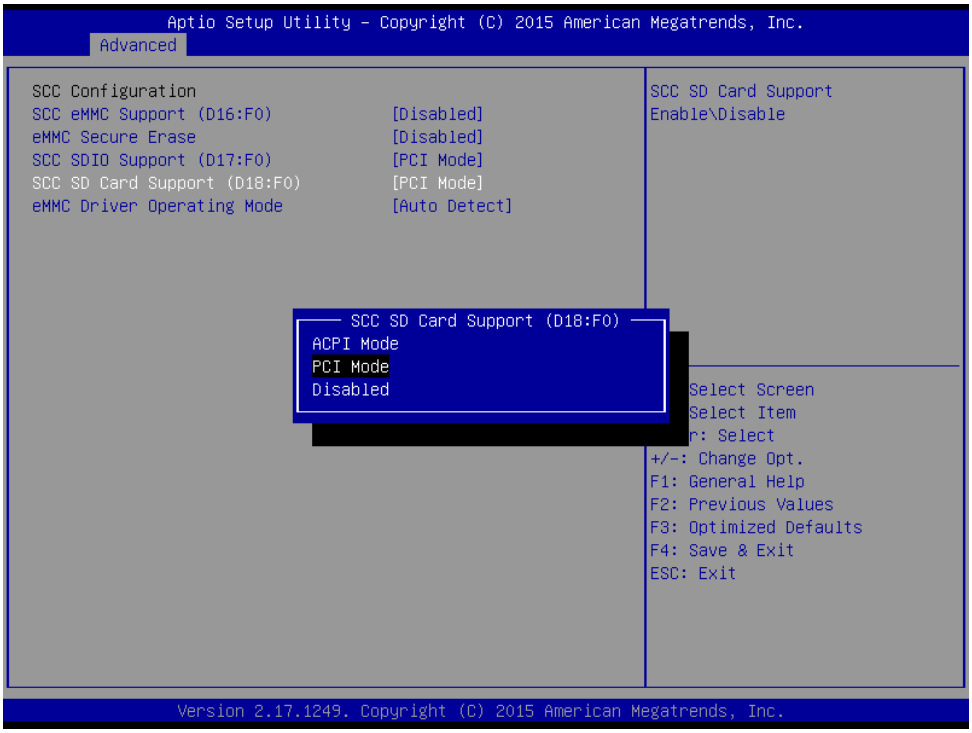
3.6.2.11 LPSS & SCC Configuration

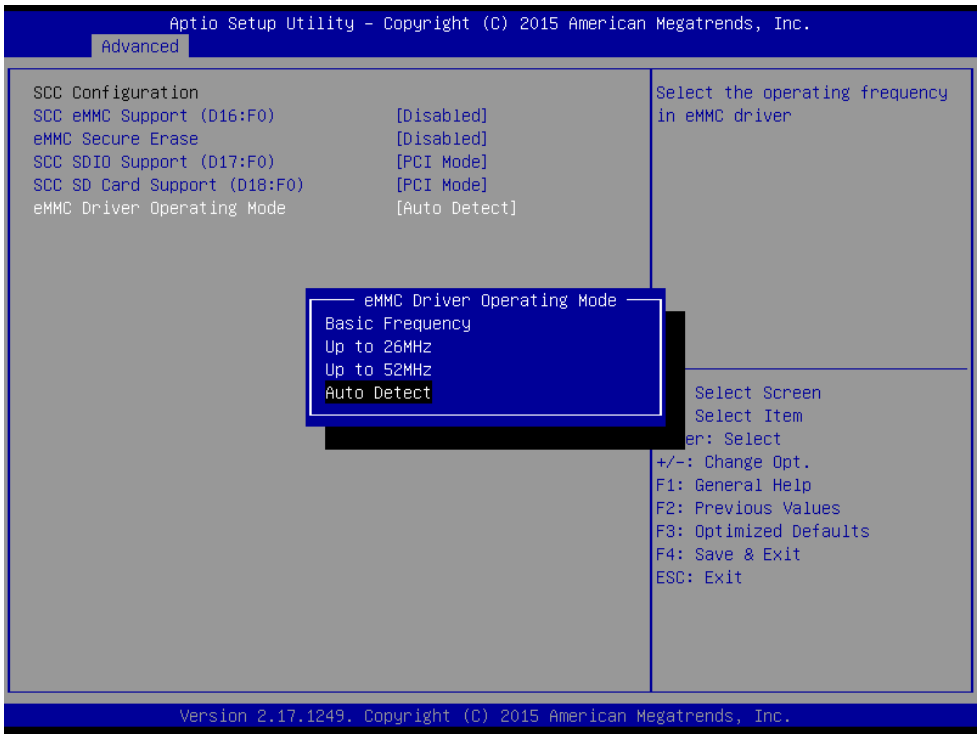





Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
SCC Configuration
SCC eMMC Support (D16:F0) [Disabled]
eMMC Secure Erase [Disabled]
SCC SDIO Support (D17:F0) [PCI Mode]
SCC SD Card Support (D18:F0) [PCI Mode]
eMMC Driver Operating Mode [Auto Detect]
Disable/Enable eMMC Secure Erase. When enabled, all the data on eMMC will be erased.
eMMC Secure Erase
Enabled
Disabled
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
SCC Configuration
SCC eMMC Support (D16:F0) [Disabled]
eMMC Secure Erase [Disabled]
SCC SDIO Support (D17:F0) [PCI Mode]
SCC SD Card Support (D18:F0) [PCI Mode]
eMMC Driver Operating Mode [Auto Detect]
SCC SDIO Support Enable\Disable
SCC SDIO Support (D17:F0)
ACPI Mode
PCI Mode
Disabled
Select Screen
Select Item
er: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

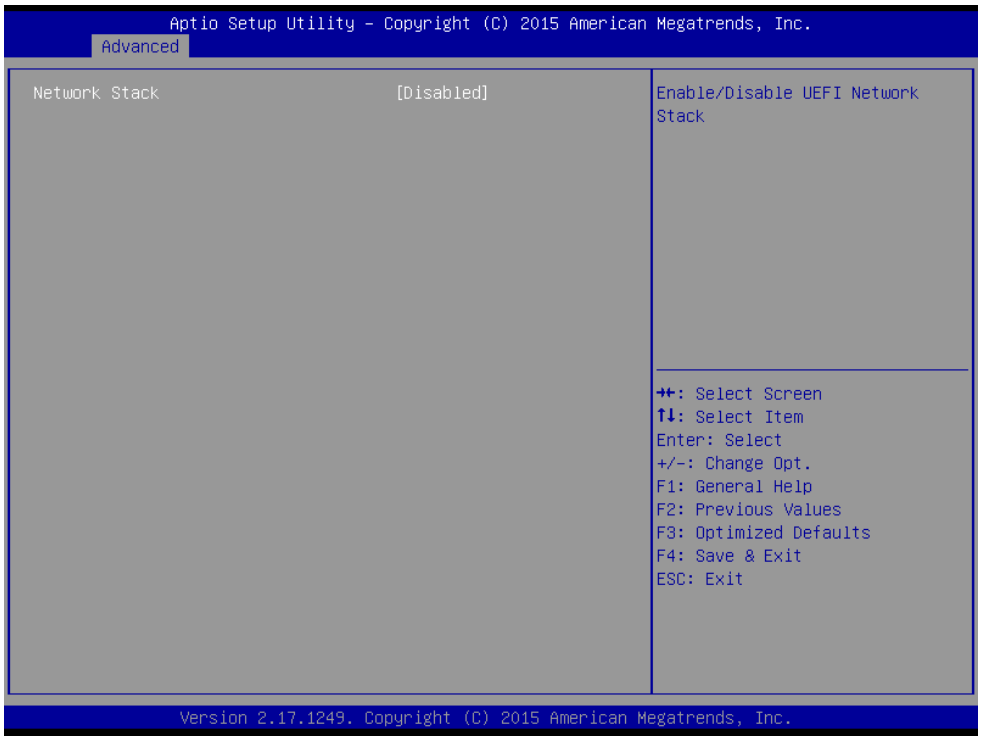


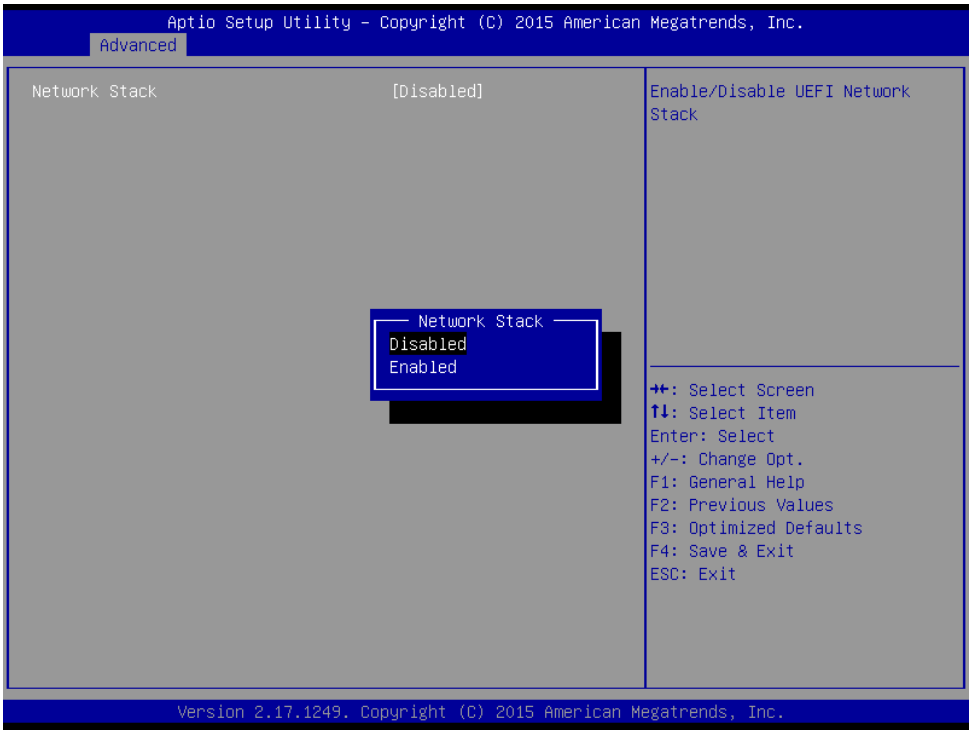


Item	Options	Description
SCC eMMC Support (D16:F0)	ACPI Mode PCI Mode Disabled**[Default]**	SCC eMMC power management function support selection.
eMMC Secure Erase	Enabled Disabled**[Default]**	Disable/Enable eMMC Secure Erase. When enabled, all the data on eMMC will

		be erased.
SCC SDIO Support (D17:F0)	ACPI Mode PCI Mode**[Default]** Disabled	SCC SDIO Support Enable/Disable.
SCC SD Card Support (D18:F0)	ACPI Mode PCI Mode**[Default]** Disabled	SCC SD Card Support Enable/Disable.
eMMC Driver Operating Mode	Basic Frequency Up to 26MHz Up to 52MHz Auto Detect**[Default]**	Select the operating frequency in eMMC driver.

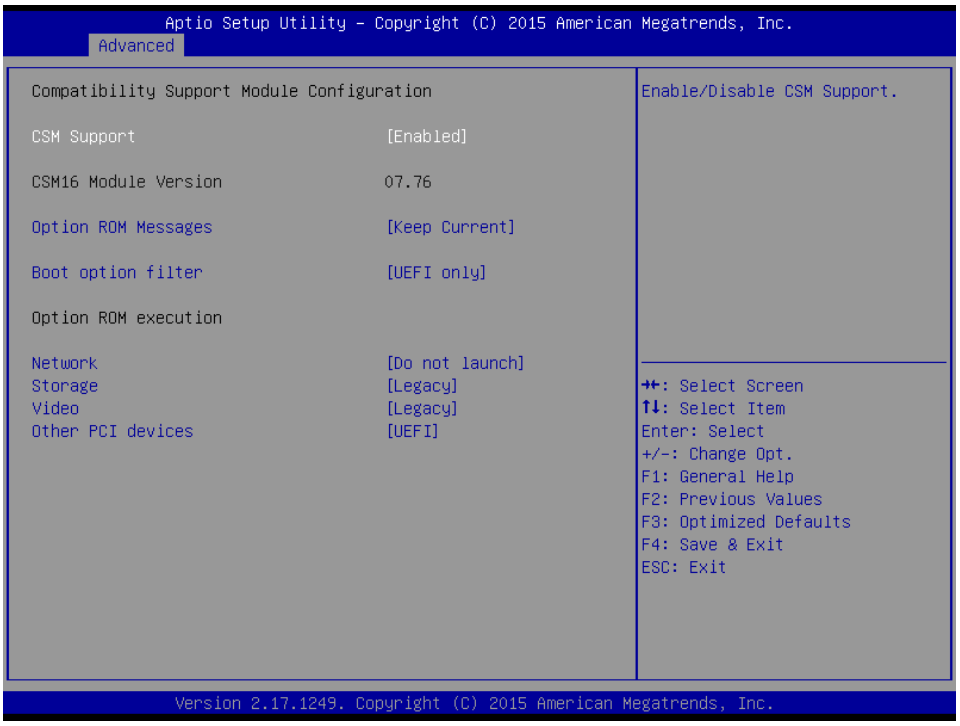
3.6.2.12 Network Stack Configuration

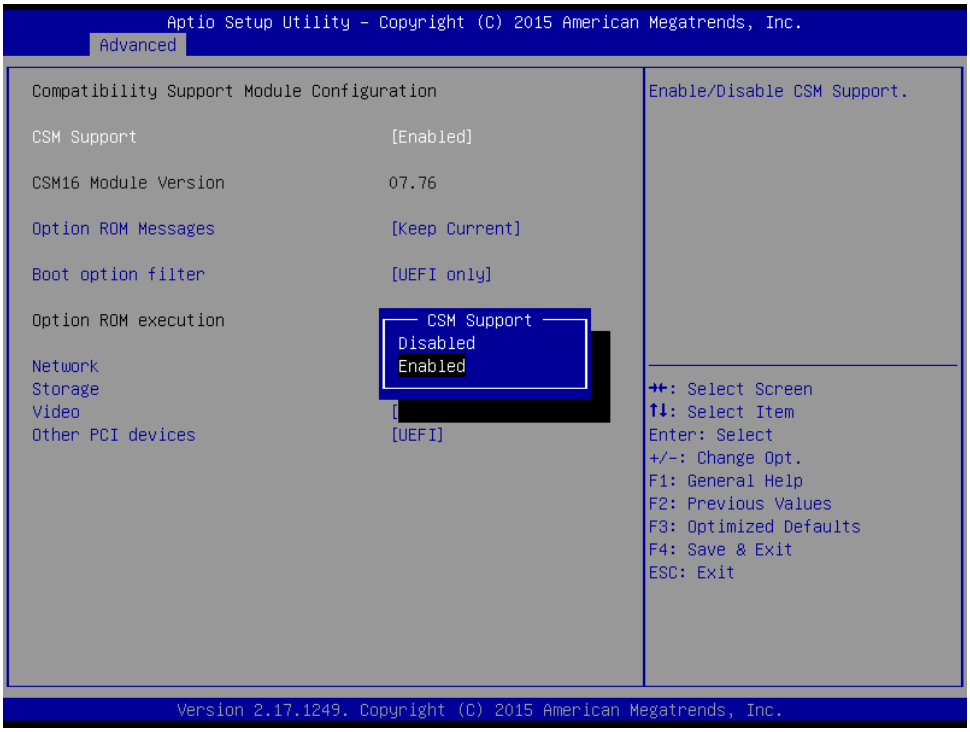


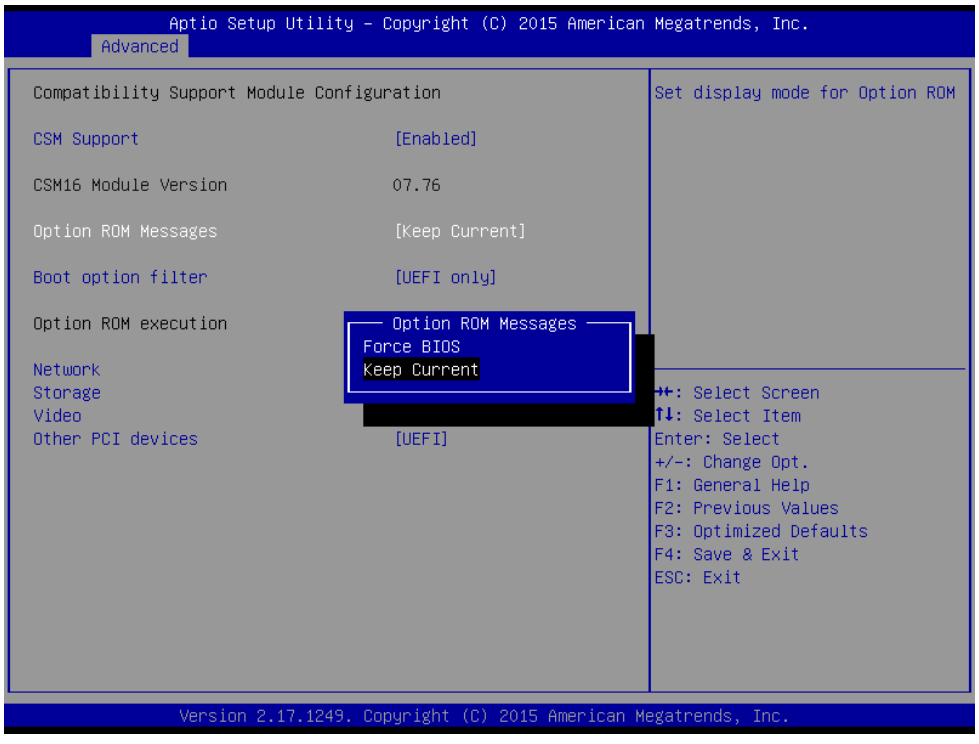


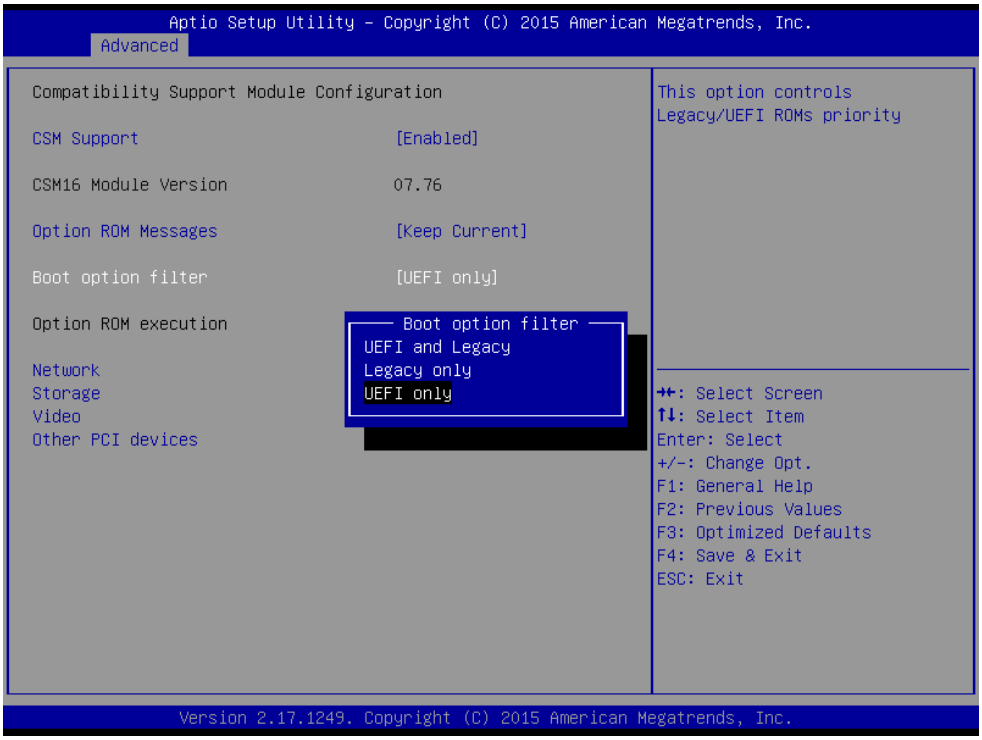
Item	Options	Description
Network Stack	Enabled Disabled**[Default]**	Enable/Disable UEFI Network Stack.

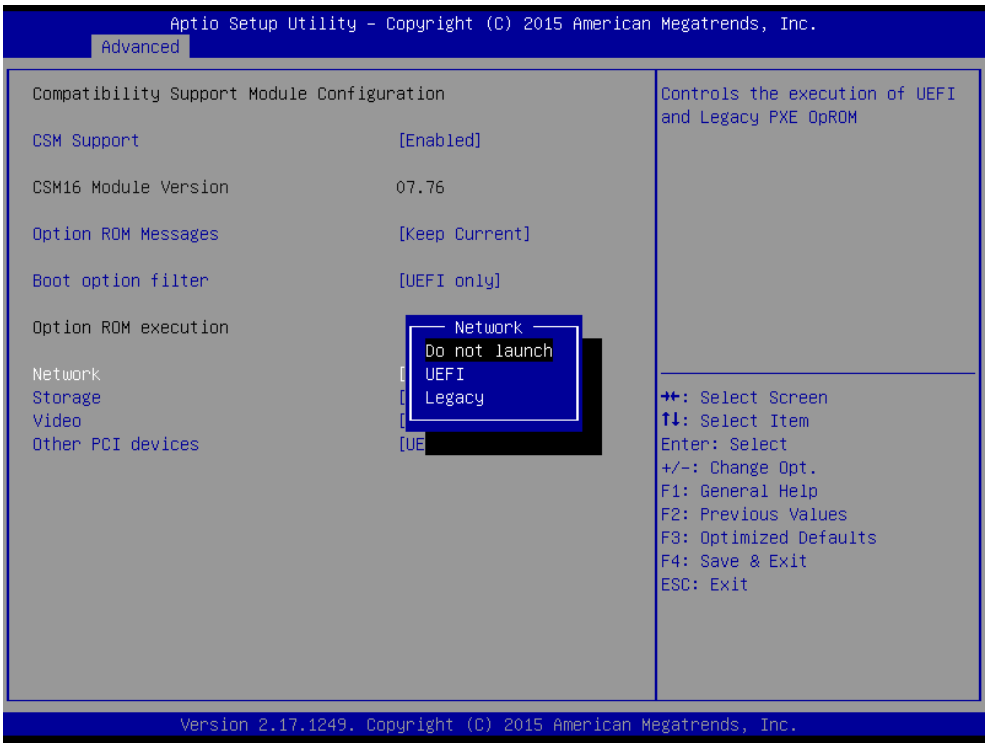
3.6.2.13 CSM Configuration

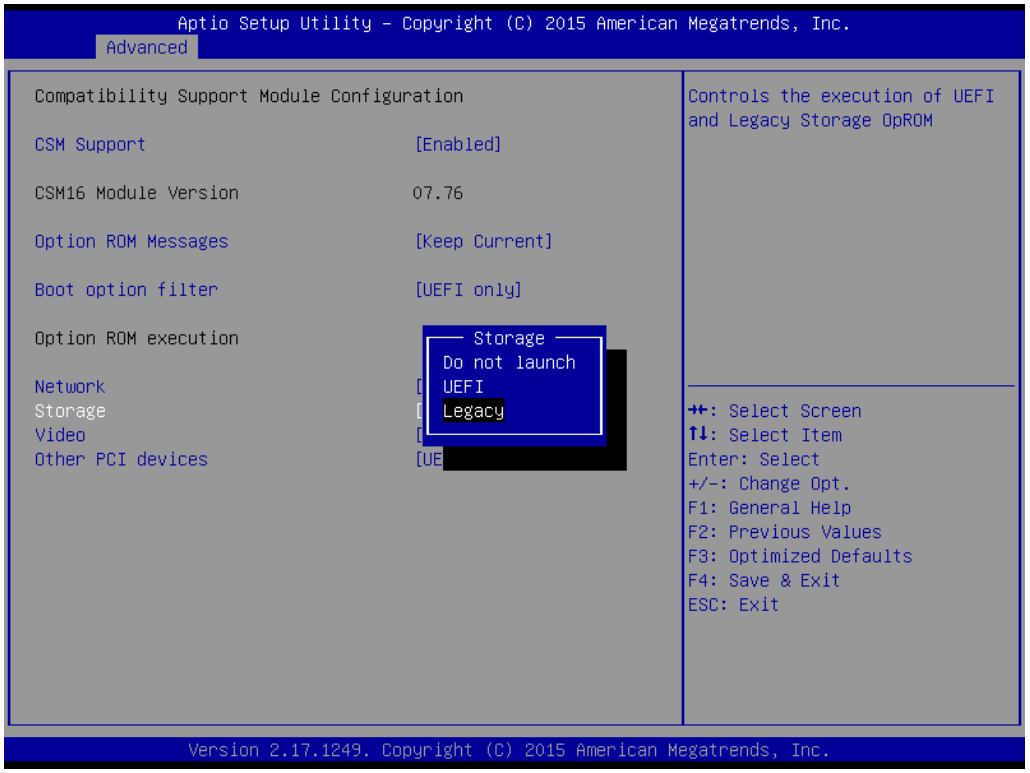


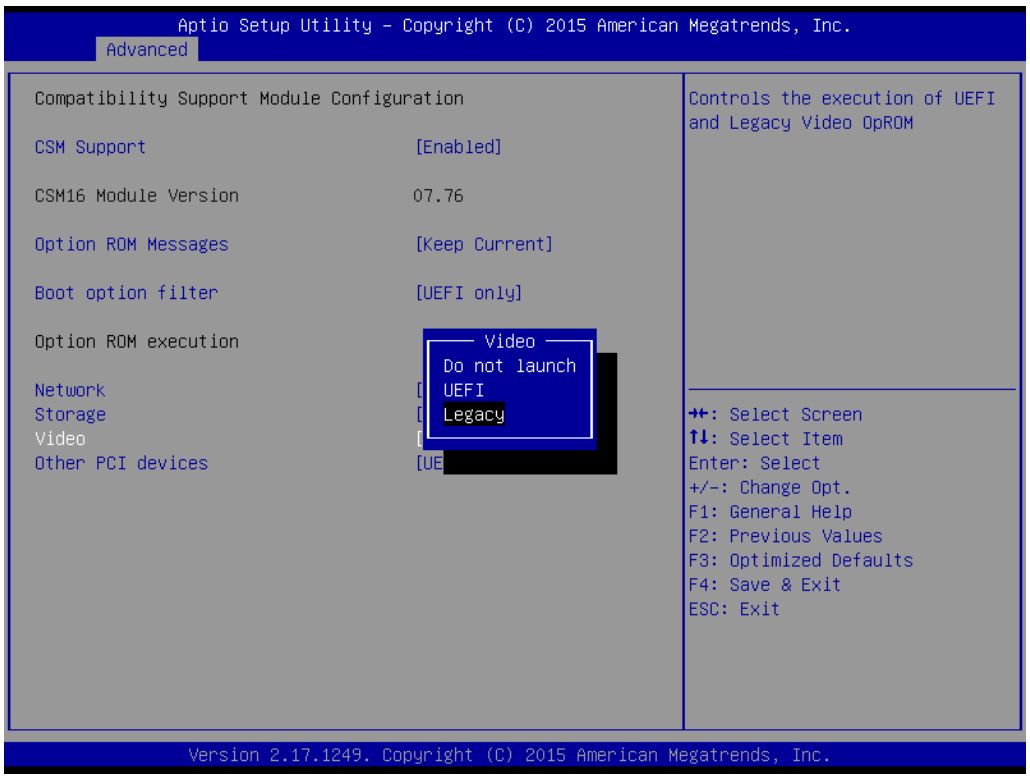

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices [UEFI]
CSM Support
Disabled
Enabled
Enable/Disable CSM Support.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

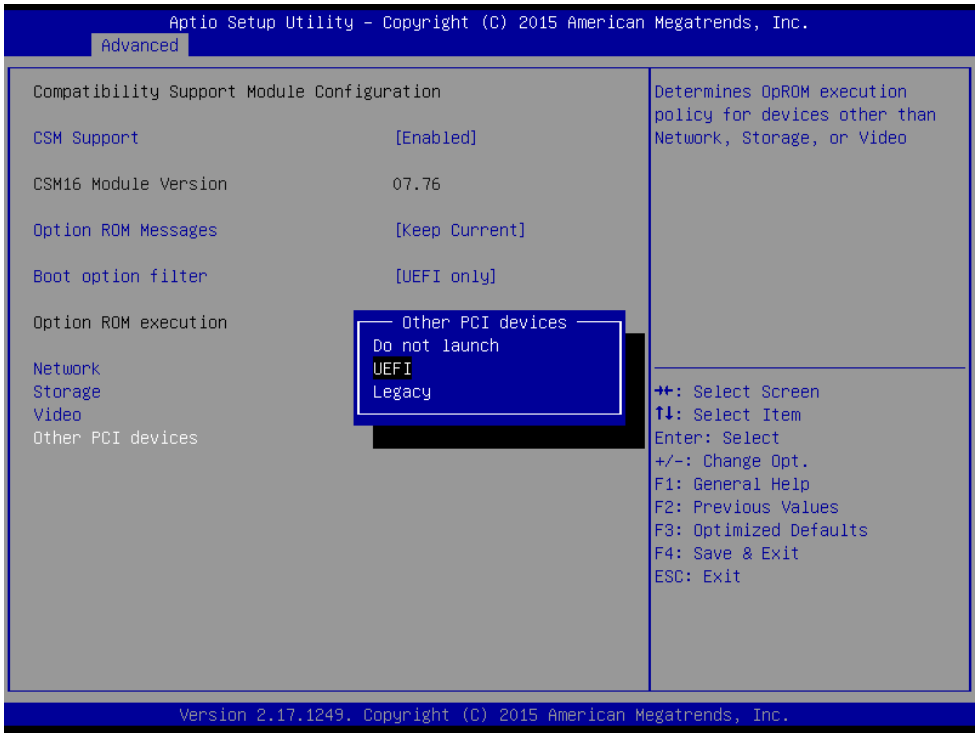

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices [UEFI]
Option ROM Messages
Force BIOS
Keep Current
Set display mode for Option ROM
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices
Boot option filter
UEFI and Legacy
Legacy only
UEFI only
This option controls Legacy/UEFI ROMs priority
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices
Network
Do not launch
UEFI
Legacy
Controls the execution of UEFI and Legacy PXE OpROM
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

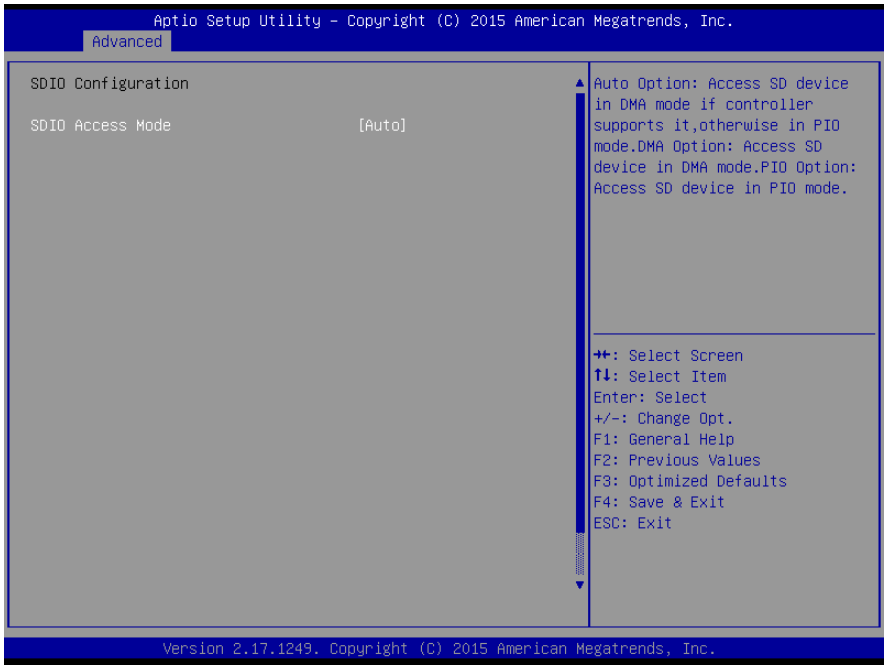

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices
Storage
Do not launch
UEFI
Legacy
Controls the execution of UEFI and Legacy Storage OpROM
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

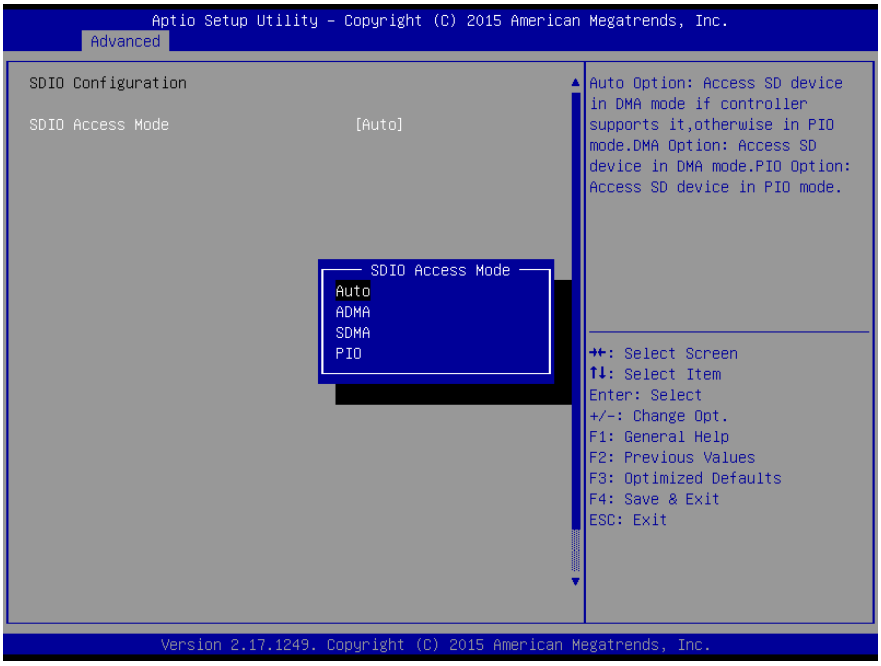

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
Compatibility Support Module Configuration
CSM Support [Enabled]
CSM16 Module Version 07.76
Option ROM Messages [Keep Current]
Boot option filter [UEFI only]
Option ROM execution
Network
Storage
Video
Other PCI devices
Video
Do not launch
UEFI
Legacy
Controls the execution of UEFI and Legacy Video OpROM
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.



Item	Options	Description
CSM Support	Enabled**[Default]** Disabled,	Enable/Disable CSM Support.
Option ROM Messages	Force BIOS Keep Current**[Default]**	Set display mode for Option ROM.
Boot option filter	UEFI and Legacy Legacy only UEFI only**[Default]**	This option controls Legacy/UEFI ROMs priority.
Network	Do not launch**[Default]** UEFI Legacy	Controls the execution of UEFI and Legacy PXE OpROM.
Storage	Do not launch UEFI Legacy**[Default]**	Controls the execution of UEFI and Legacy Storage OpROM.
Video	Do not launch UEFI Legacy**[Default]**	Controls the execution of UEFI and Legacy Video OpROM.
Other PCI devices	Do not launch UEFI**[Default]** Legacy	Determines OpROM execution policy for devices other than Network, Storage, or Video.

3.6.2.14 SDIO Configuration

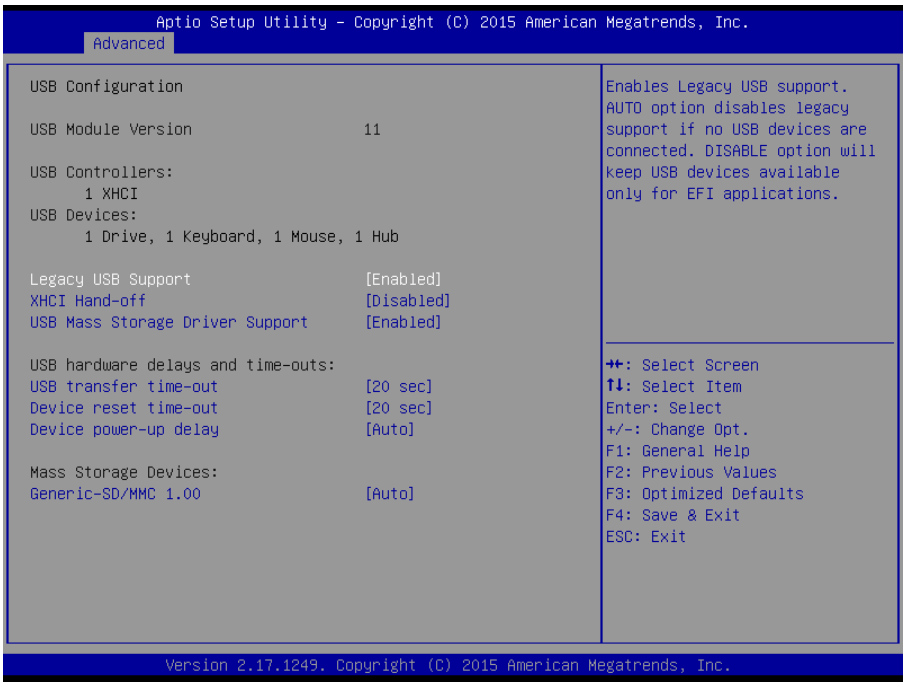


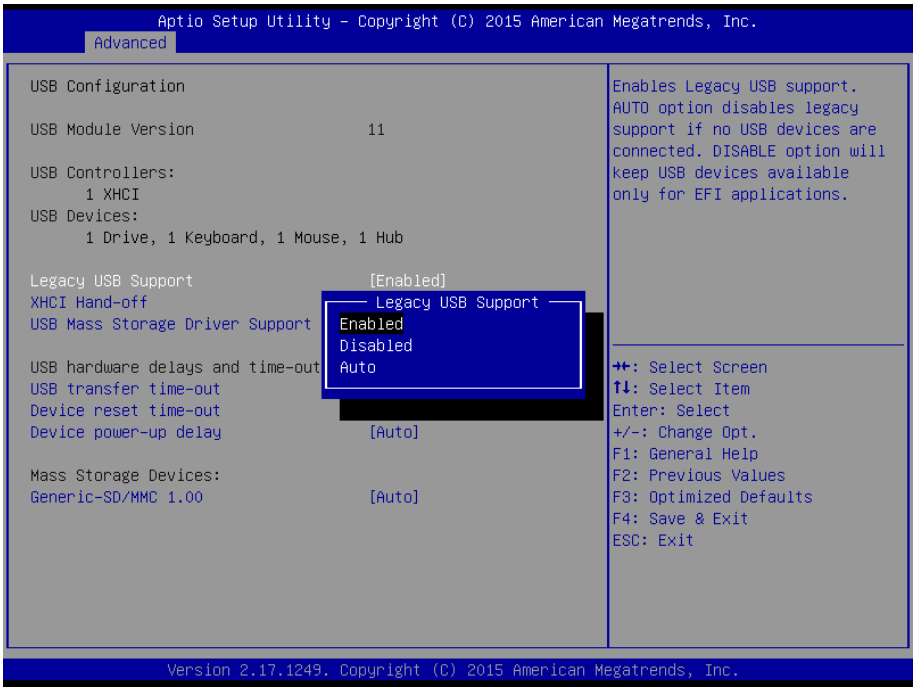


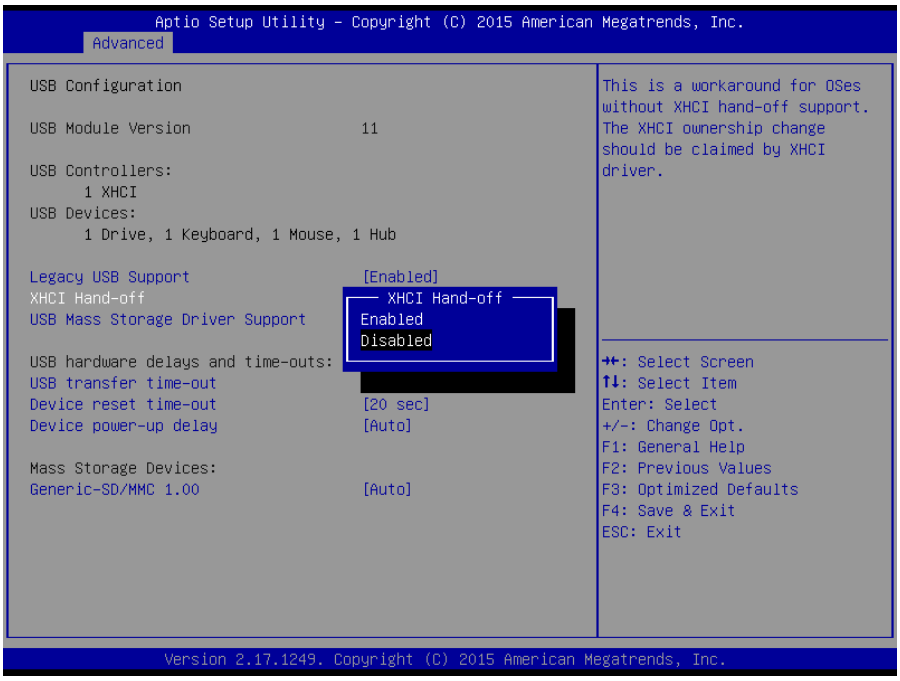
Item	Options	Description
SDIO Access Mode	Auto**[Default]** ADMA SDMA PIO	Auto Option: Access SD device in DMA mode if controller supports it , otherwise in PIO mode. DMA Option: Access SD device in DMA mode. PIO Option: Access SD device in PIO mode.

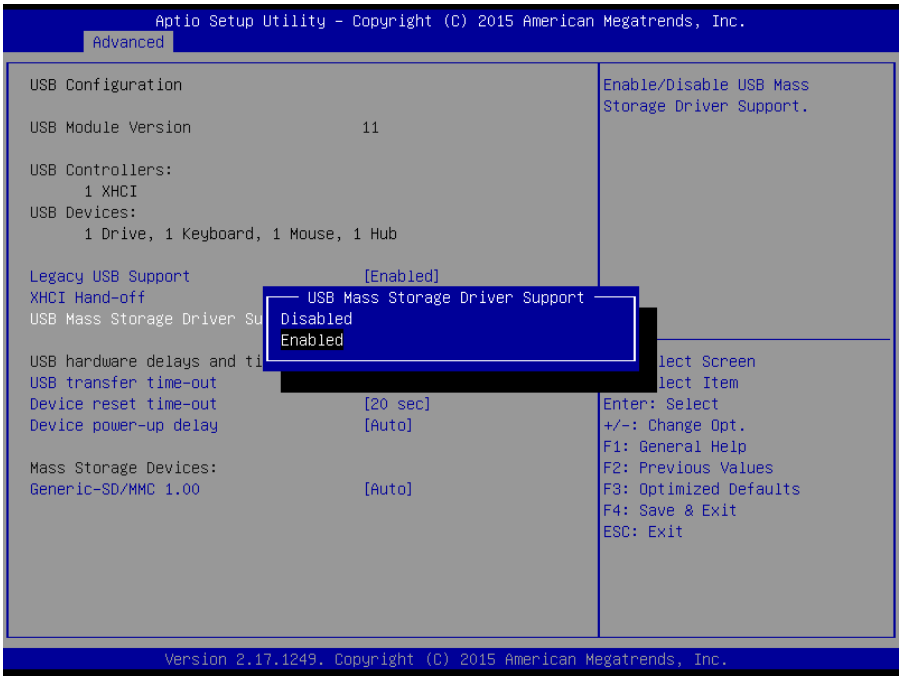
3.6.2.15 USB Configuration

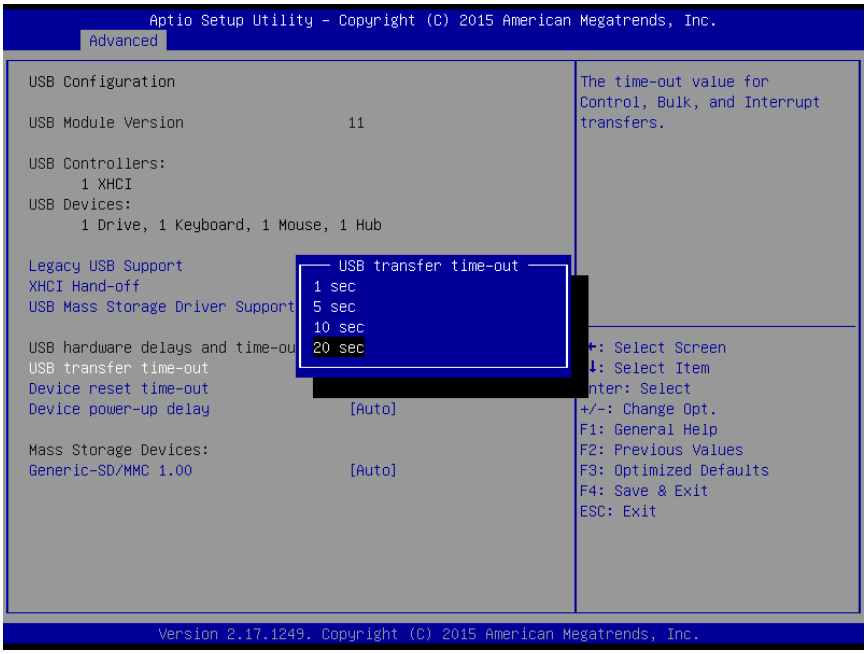
The USB Configuration menu helps read USB information and configures USB settings.

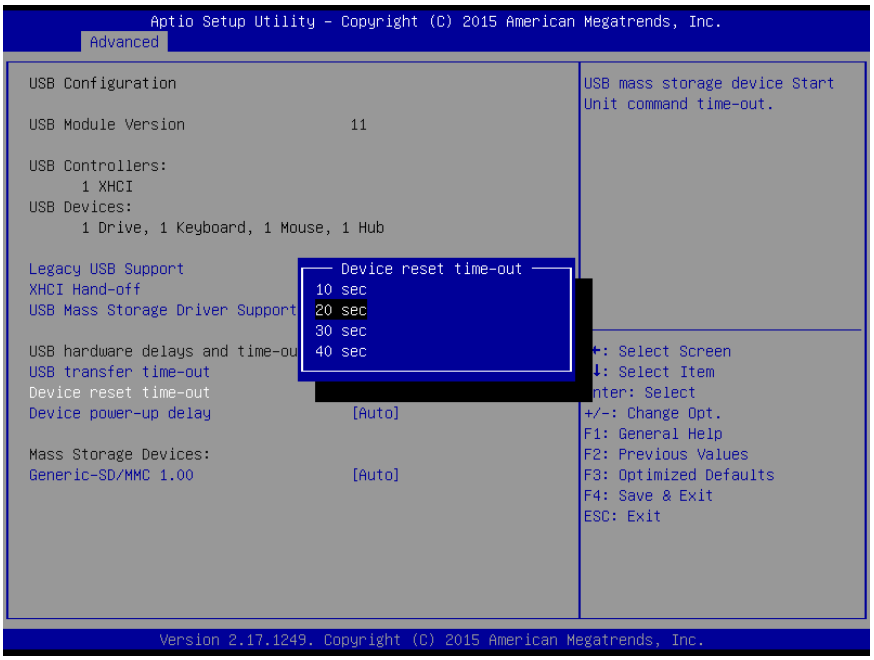


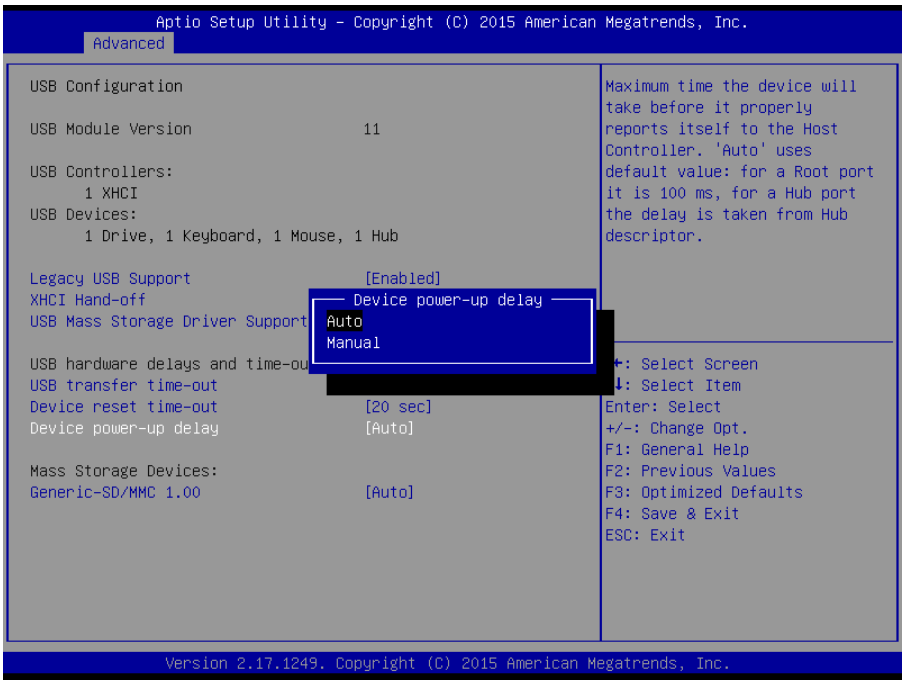


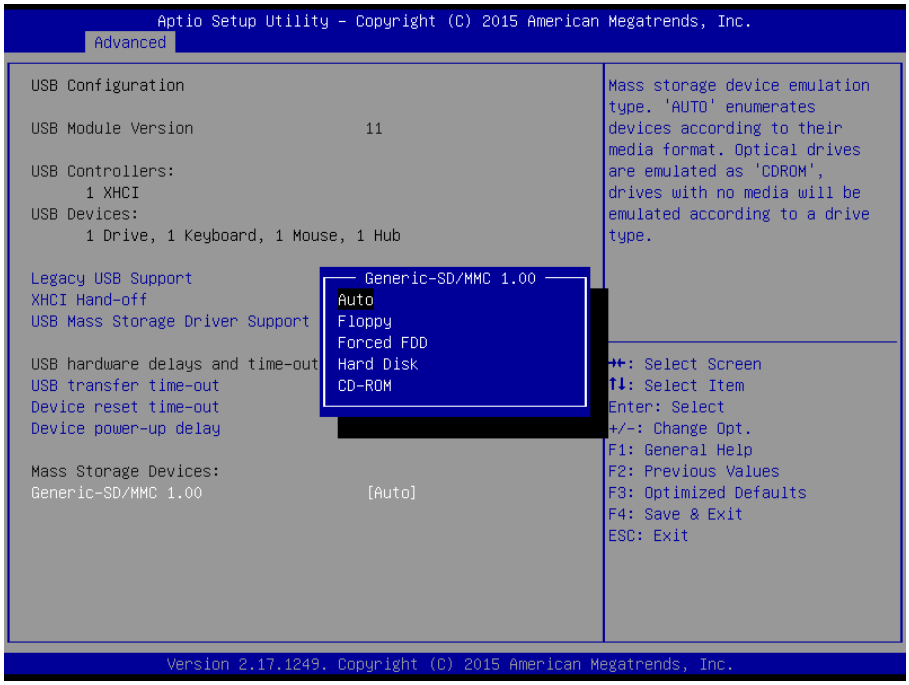

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
USB Configuration
USB Module Version 11
USB Controllers:
1 XHCI
USB Devices:
1 Drive, 1 Keyboard, 1 Mouse, 1 Hub
Legacy USB Support [Enabled]
XHCI Hand-off
USB Mass Storage Driver Support
USB hardware delays and time-outs:
USB transfer time-out
Device reset time-out [20 sec]
Device power-up delay [Auto]
Mass Storage Devices:
Generic-SD/MMC 1.00 [Auto]
XHCI Hand-off
Enabled
Disabled
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
USB Configuration
USB Module Version 11
USB Controllers:
1 XHCI
USB Devices:
1 Drive, 1 Keyboard, 1 Mouse, 1 Hub
Legacy USB Support [Enabled]
XHCI Hand-off
USB Mass Storage Driver Su
USB hardware delays and ti
USB transfer time-out
Device reset time-out [20 sec]
Device power-up delay [Auto]
Mass Storage Devices:
Generic-SD/MMC 1.00 [Auto]
USB Mass Storage Driver Support
Disabled
Enabled
Enable/Disable USB Mass Storage Driver Support.
lect Screen
lect Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
USB Configuration
USB Module Version 11
USB Controllers:
1 XHCI
USB Devices:
1 Drive, 1 Keyboard, 1 Mouse, 1 Hub
Legacy USB Support
XHCI Hand-off
USB Mass Storage Driver Support
USB hardware delays and time-ou
USB transfer time-out
Device reset time-out
Device power-up delay [Auto]
Mass Storage Devices:
Generic-SD/MMC 1.00 [Auto]
USB transfer time-out
1 sec
5 sec
10 sec
20 sec
The time-out value for Control, Bulk, and Interrupt transfers.
+: Select Screen
↓: Select Item
nter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Advanced
USB Configuration
USB Module Version 11
USB Controllers:
1 XHCI
USB Devices:
1 Drive, 1 Keyboard, 1 Mouse, 1 Hub
Legacy USB Support
XHCI Hand-off
USB Mass Storage Driver Support
USB hardware delays and time-ou
USB transfer time-out
Device reset time-out
Device power-up delay [Auto]
Mass Storage Devices:
Generic-SD/MMC 1.00 [Auto]
Device reset time-out
10 sec
20 sec
30 sec
40 sec
USB mass storage device Start Unit command time-out.
+: Select Screen
↓: Select Item
nter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

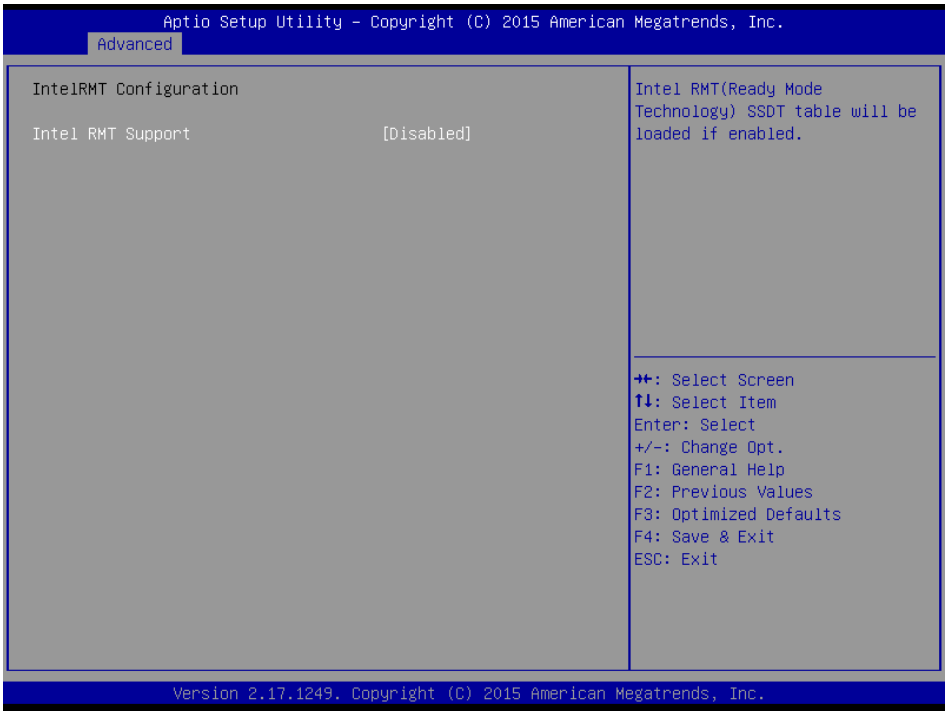


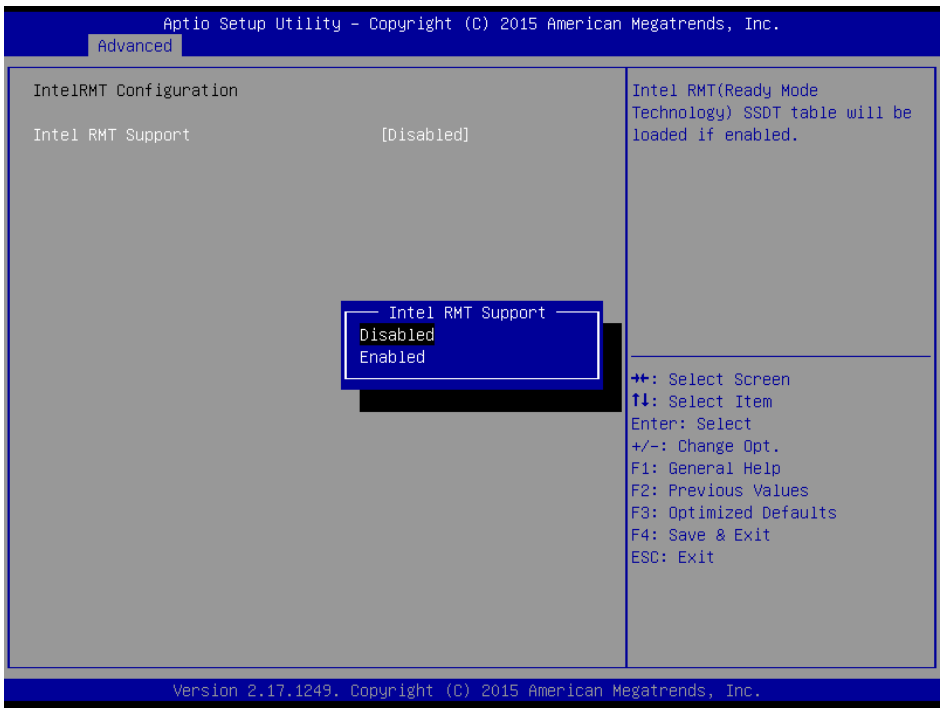


Item	Options	Description
Legacy USB Support	Enabled**[Default]** Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
XHCI Hand-off	Enabled Disabled**[Default]**	This is a workaround for OSew without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enabled**[Default]**	Enable/Disable USB Mass Storage Driver

	Disabled	Support.
USB transfer time-out	1 sec 5 sec 10 sec 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec**[Default]** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	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 100ms, for a Hub port the delay is taken form Hub descriptor.
Generic-SD/MMC 1.00	Auto**[Default]** Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

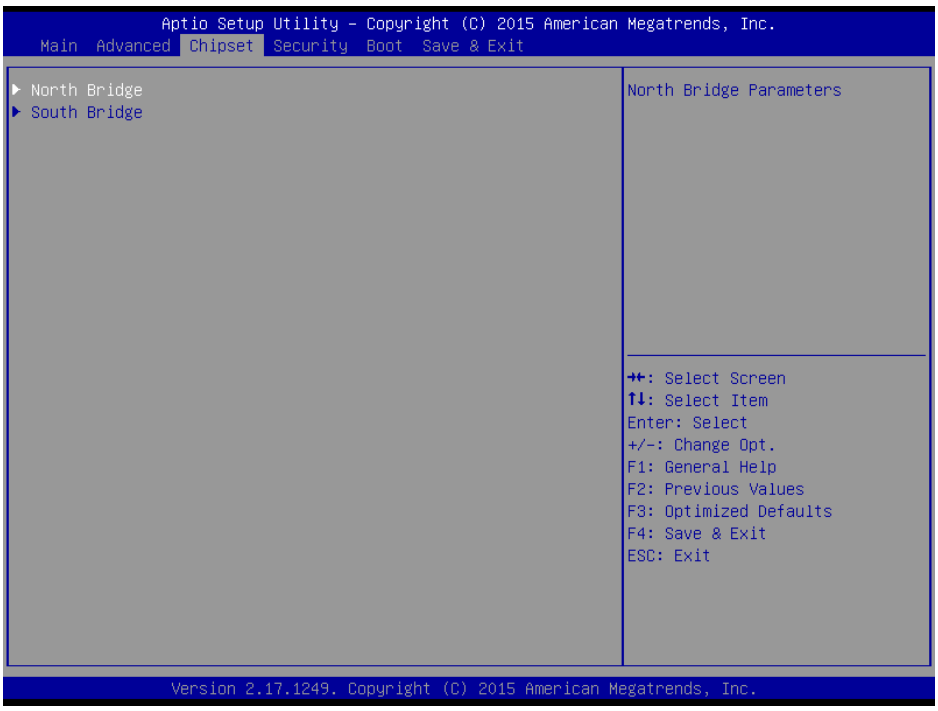
3.6.2.16 IntelRMT Configuration



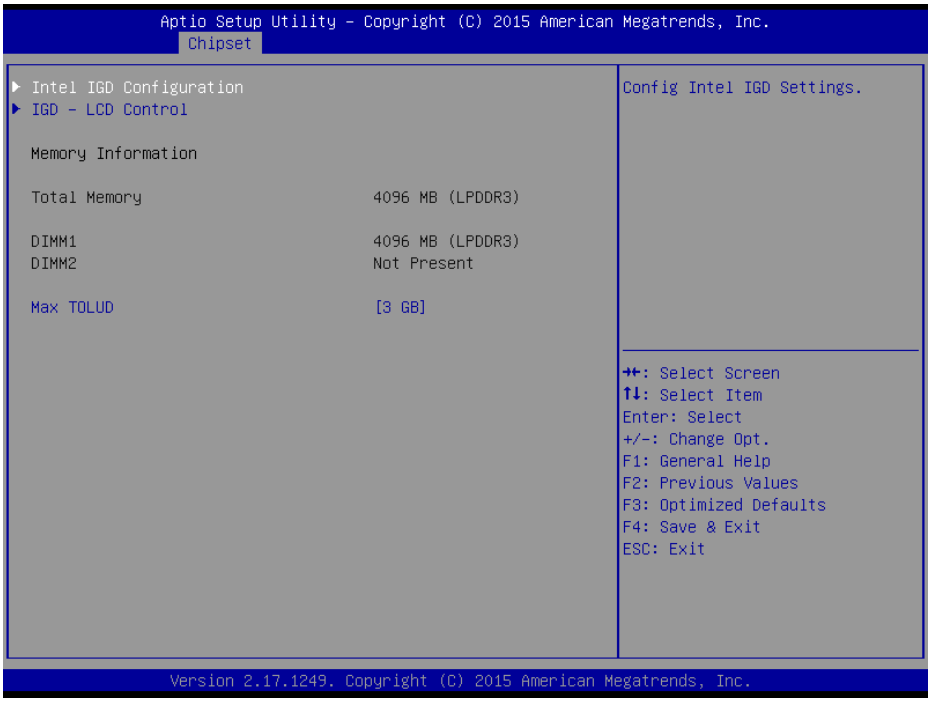


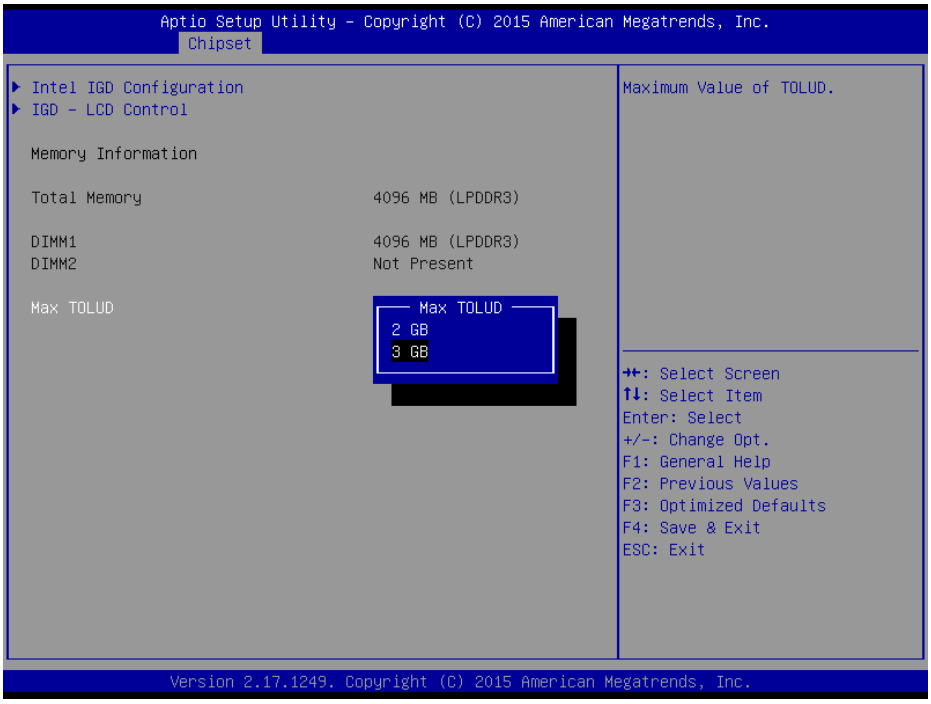
Item	Options	Description
Intel RMT Support	Disabled**[Default]** Enabled,	Intel RMT(Ready Mode Technology) SSDT table will be loaded if enabled.

3.6.3 Chipset



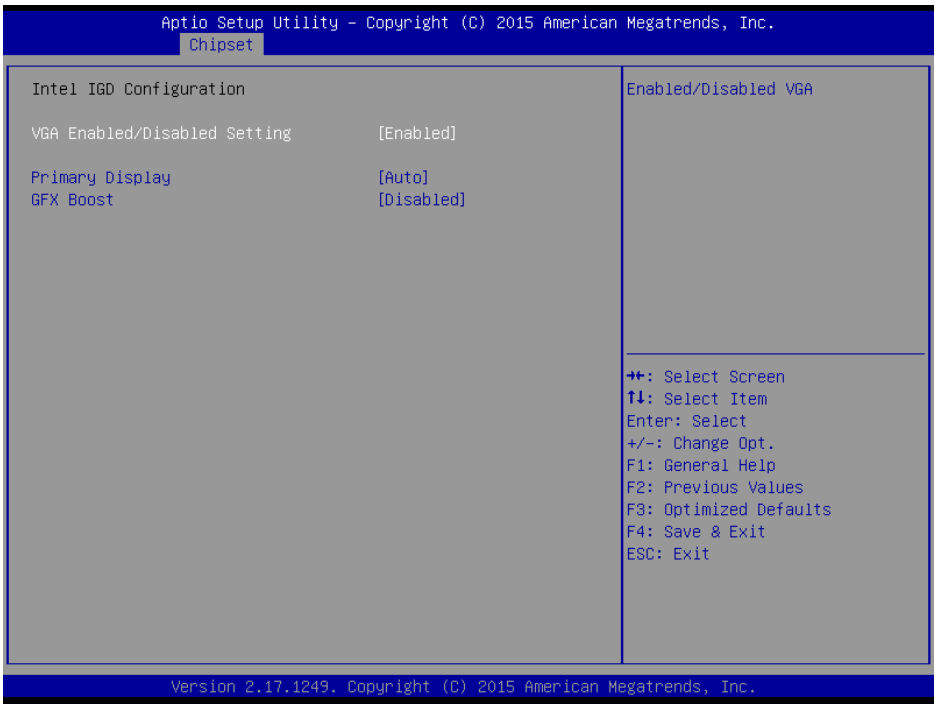
3.6.3.1 North Bridge

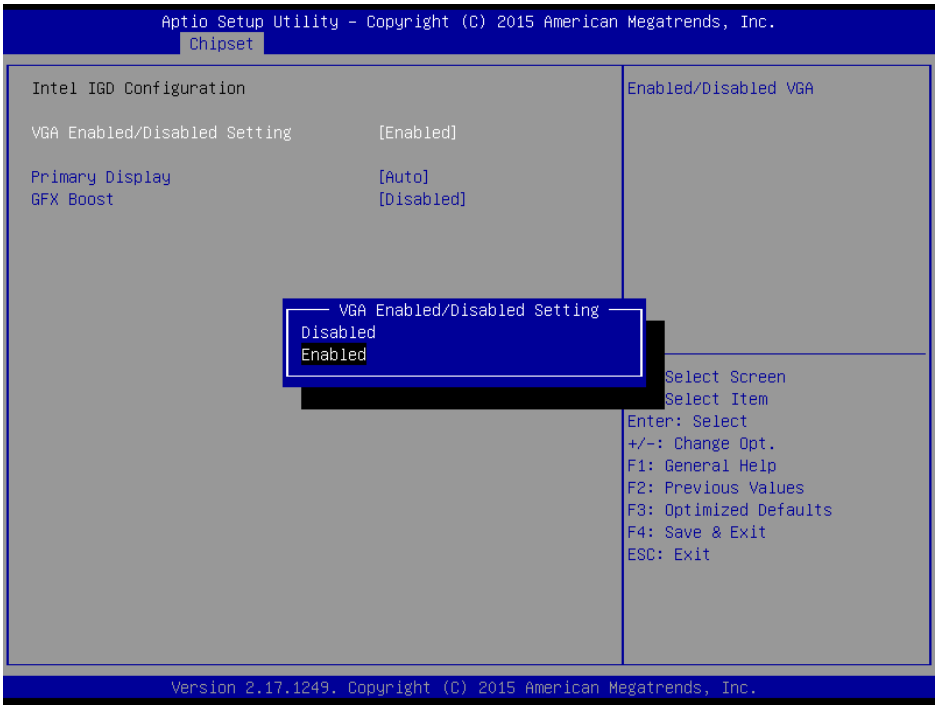


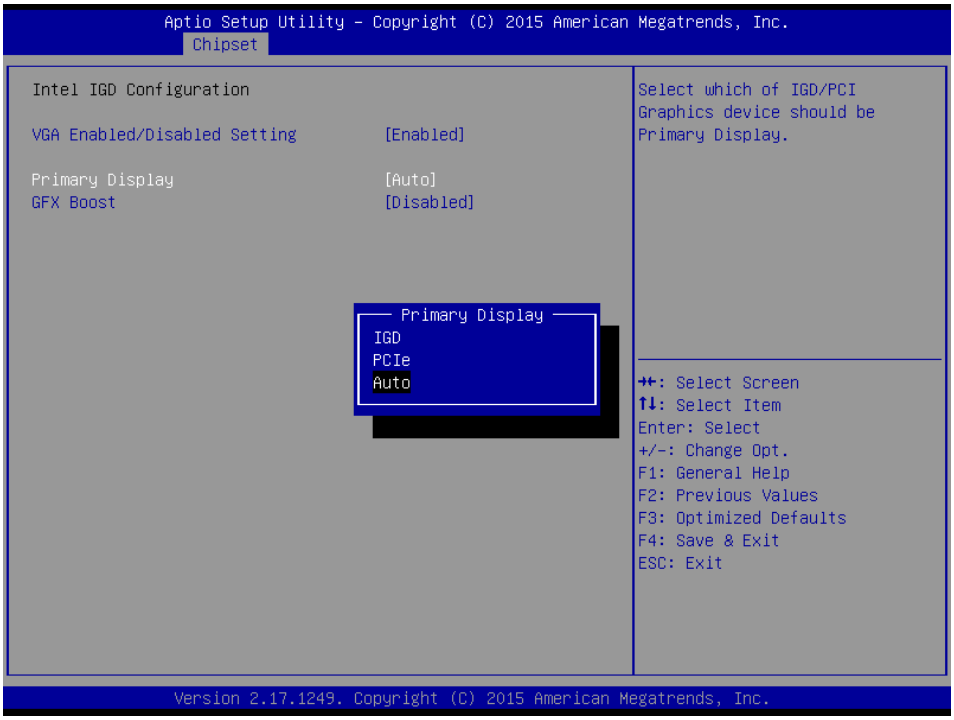


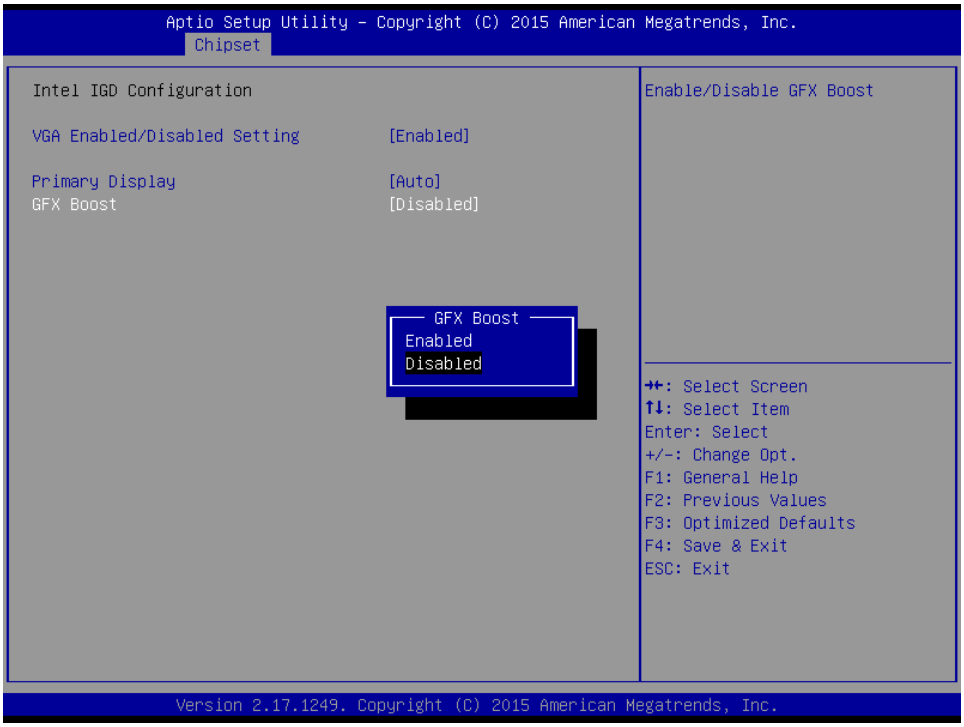
Item	Option	Description
Max TOLUD	2 GB 3 GB**[Default]**	Maximum Value of TOLUD.

3.6.3.1.1 Intel IGD Configuration



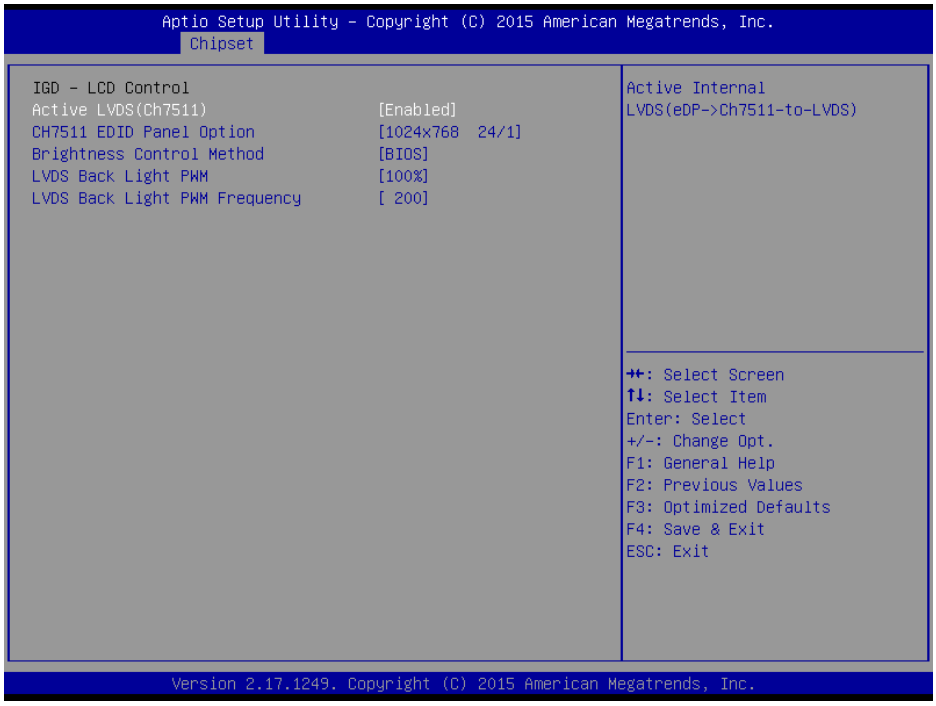


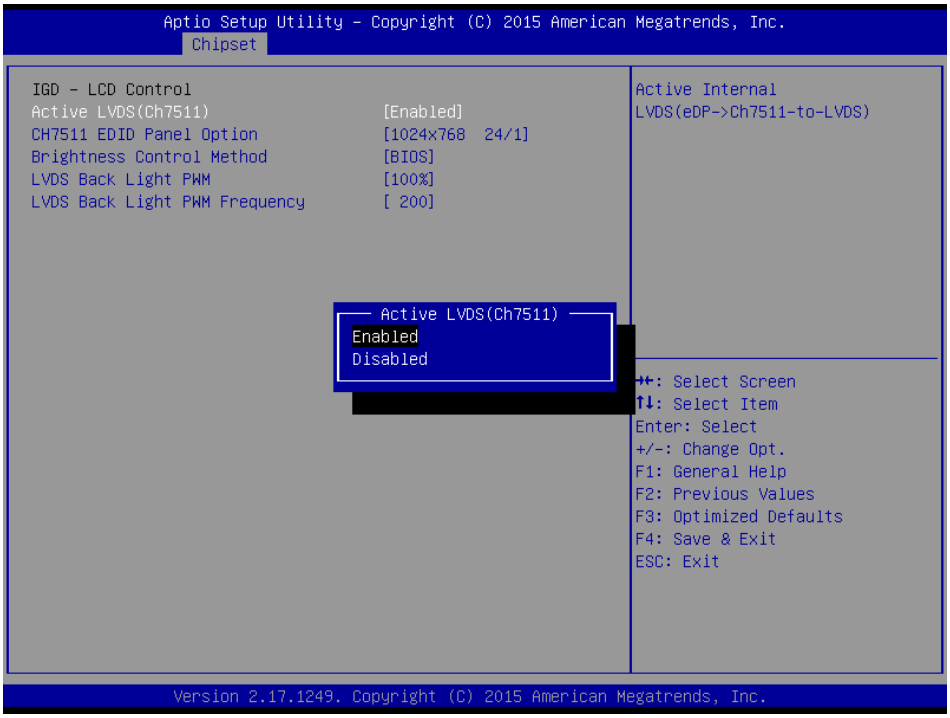


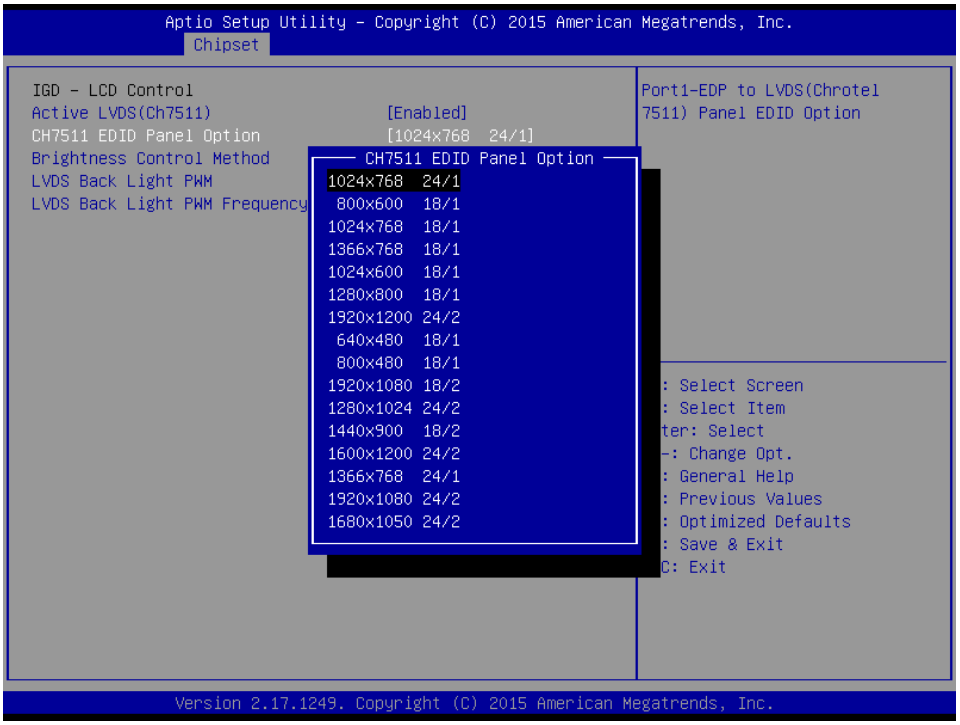


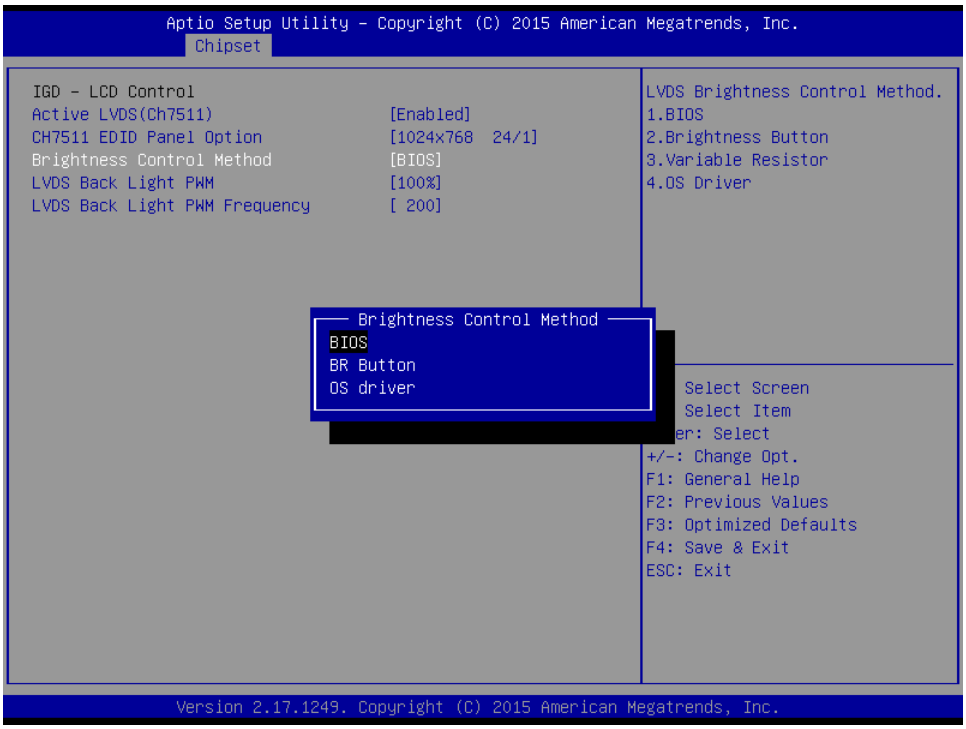
Item	Option	Description
VGA Enabled/Disabled Setting	Enabled**[Default]**, Disabled	Enable GOP Driver will unload VBIOS; Disable it will load VBIOS.
Primary Display	IGD PCIe Auto**[Default]**	Select which of IGD/PCI Graphics device should be Primary Display.
GFX Boost	Enabled, Disabled**[Default]**	Enable/Disable GFX Boost.

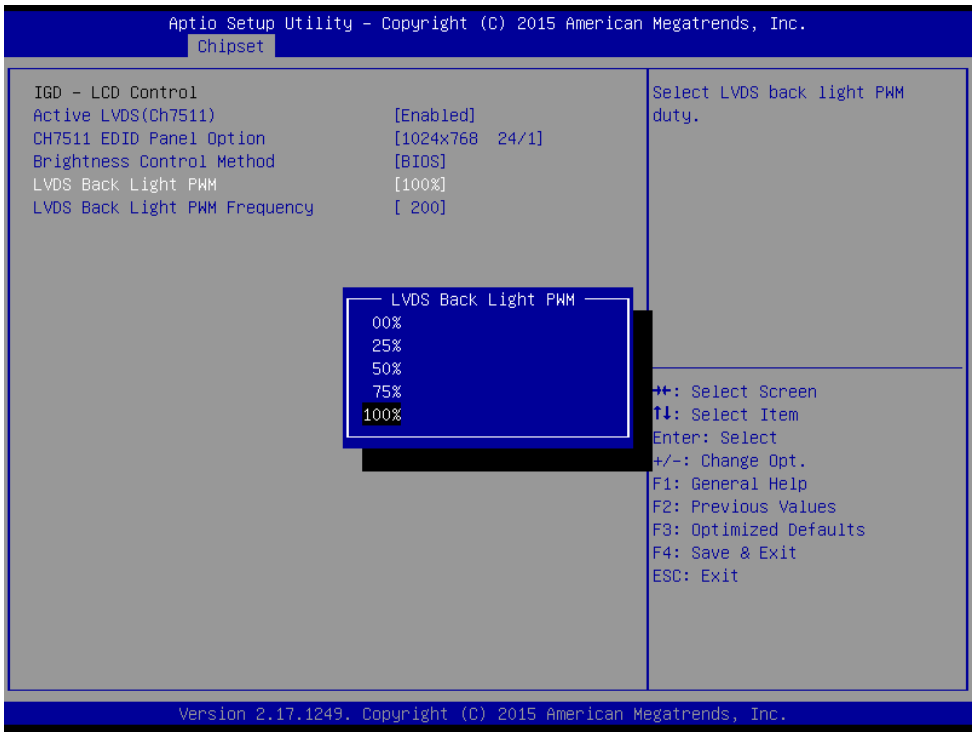
3.6.3.1.2 IGD - LCD Control

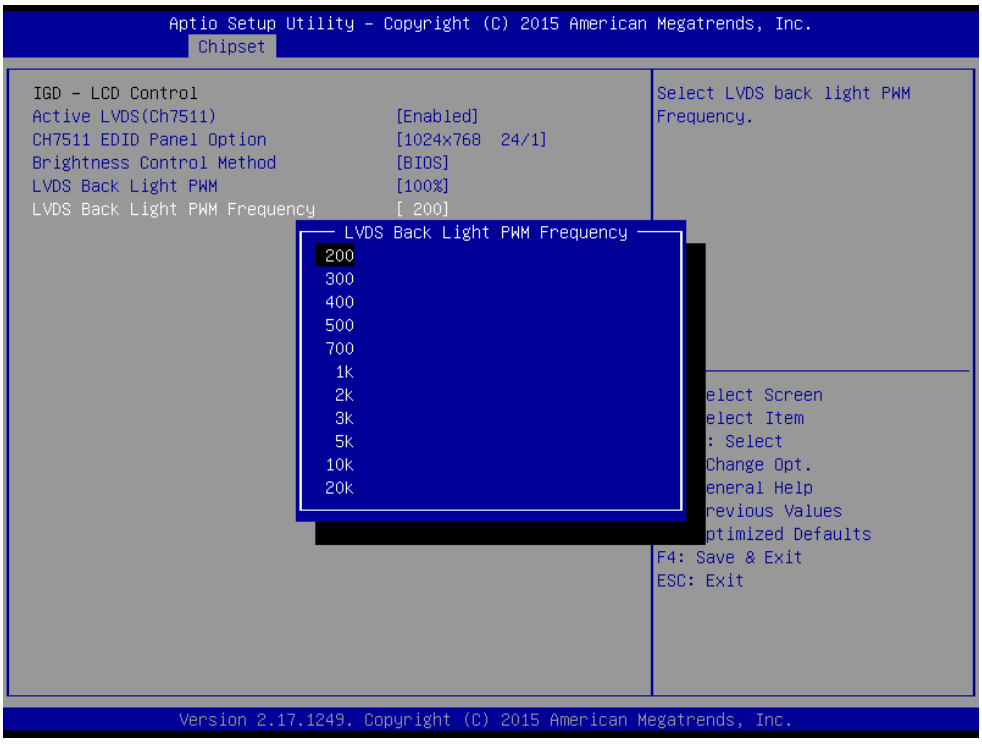





Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
IGD – LCD Control
Active LVDS(Ch7511) [Enabled]
CH7511 EDID Panel Option [1024x768 24/1]
Brightness Control Method
LVDS Back Light PWM
LVDS Back Light PWM Frequency
CH7511 EDID Panel Option
1024x768 24/1
800x600 18/1
1024x768 18/1
1366x768 18/1
1024x600 18/1
1280x800 18/1
1920x1200 24/2
640x480 18/1
800x480 18/1
1920x1080 18/2
1280x1024 24/2
1440x900 18/2
1600x1200 24/2
1366x768 24/1
1920x1080 24/2
1680x1050 24/2
Port1-EDP to LVDS(Chrotel 7511) Panel EDID Option
: Select Screen
: Select Item
ter: Select
-: Change Opt.
: General Help
: Previous Values
: Optimized Defaults
: Save & Exit
C: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
IGD – LCD Control
Active LVDS(Ch7511) [Enabled]
CH7511 EDID Panel Option [1024x768 24/1]
Brightness Control Method [BIOS]
LVDS Back Light PWM [100%]
LVDS Back Light PWM Frequency [200]
Brightness Control Method
BIOS
BR Button
OS driver
LVDS Brightness Control Method.
1.BIOS
2.Brightness Button
3.Variable Resistor
4.OS Driver
Select Screen
Select Item
er: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

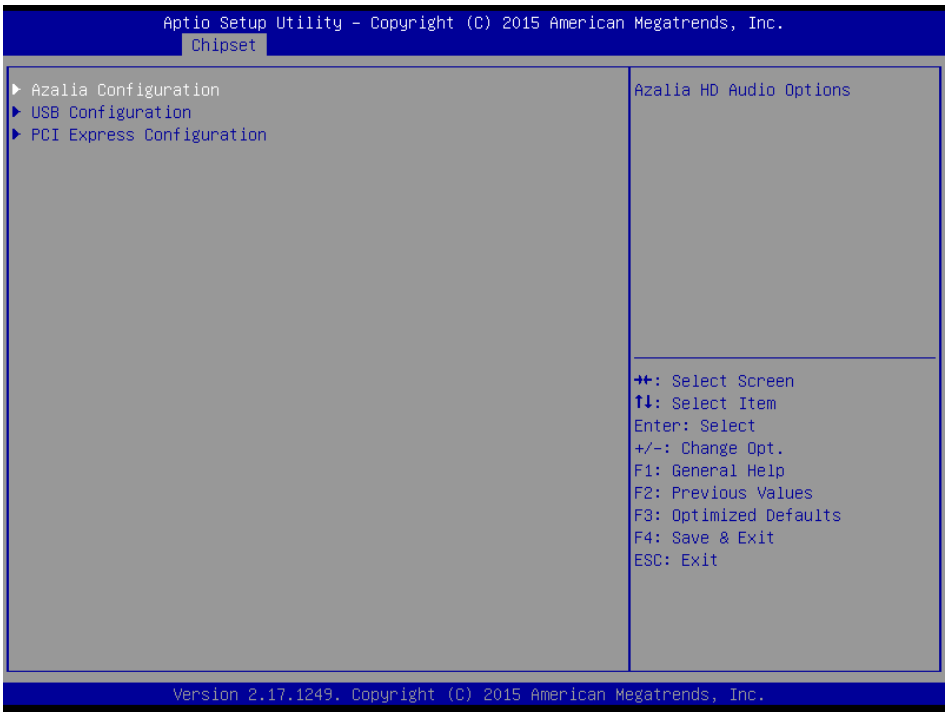




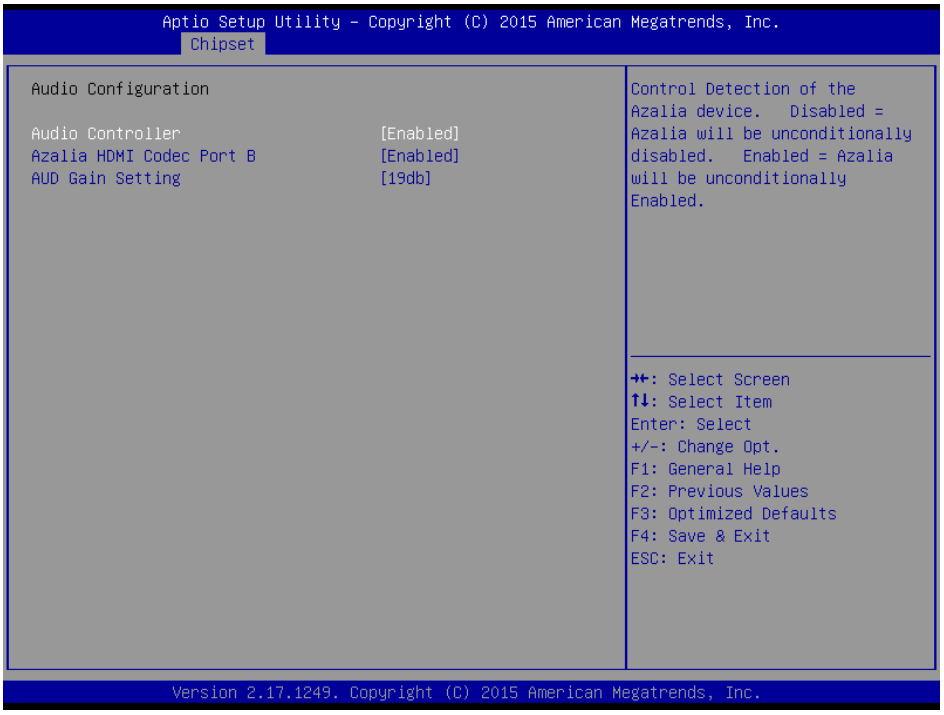
Item	Option	Description
Active LVDS (Ch7511)	Enabled**[Default]** Disabled	Active Internal LVDS(eDP->Ch7511-to –LVDS).
CH7511 EDID Panel Option	1024x768 24/1**[Default]** 800x600 18/1 1024x768 18/1	Port1-EDP to LVDS (Chrontel 7511) Panel EDID Option.

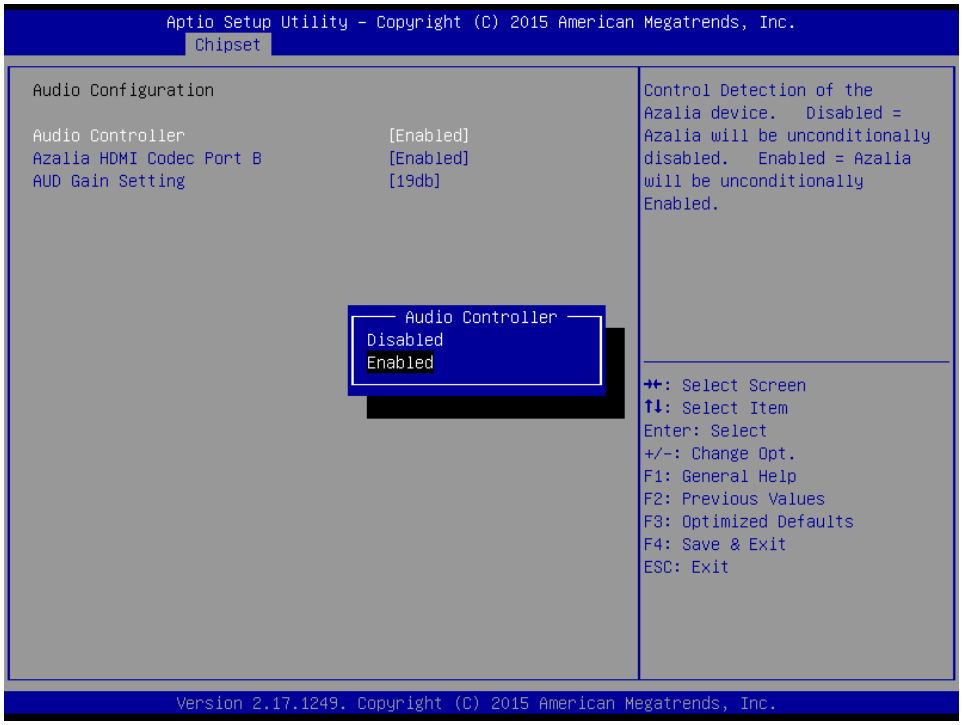
	1366x768 18/1 1024x600 18/1 1280x800 18/1 1920x1200 24/2 640x480 18/1 800x480 18/1 1920x1080 18/2 1280x1024 24/2 1440x900 18/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2 1680x1050 24/2	
Brightness Control Method	BIOS**[Default]** BR Button OS driver	LVDS Brightness Control Method. 1.BIOS 2.Brightness Button 3.Variable Resistor. Note: BR Button: Must be use FPT-2 Pin4 and Pin6.
LVDS Back Light PWM	00% 25% 50% 75% 100%**[Default]**	Select LVDS back light PWM duty.
LVDS Back Light PWM Frequency	200**[Default]** 300 400 500 700 1k 2k 3k 5k 10k 20k	Select LVDS back light PWM Frequency.

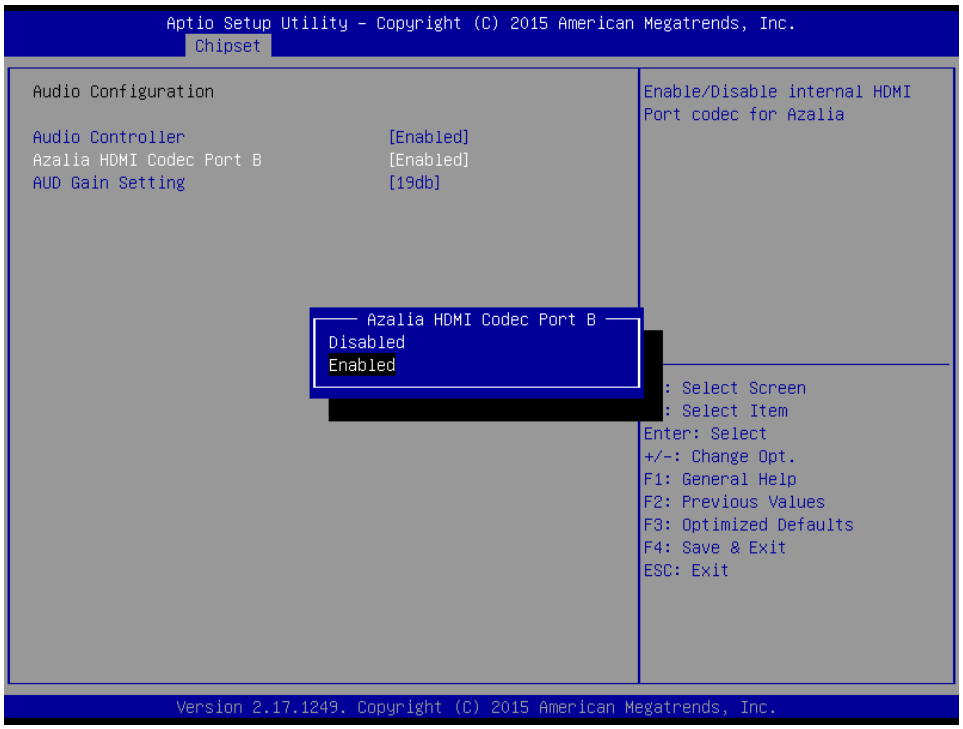
3.6.3.2 South Bridge

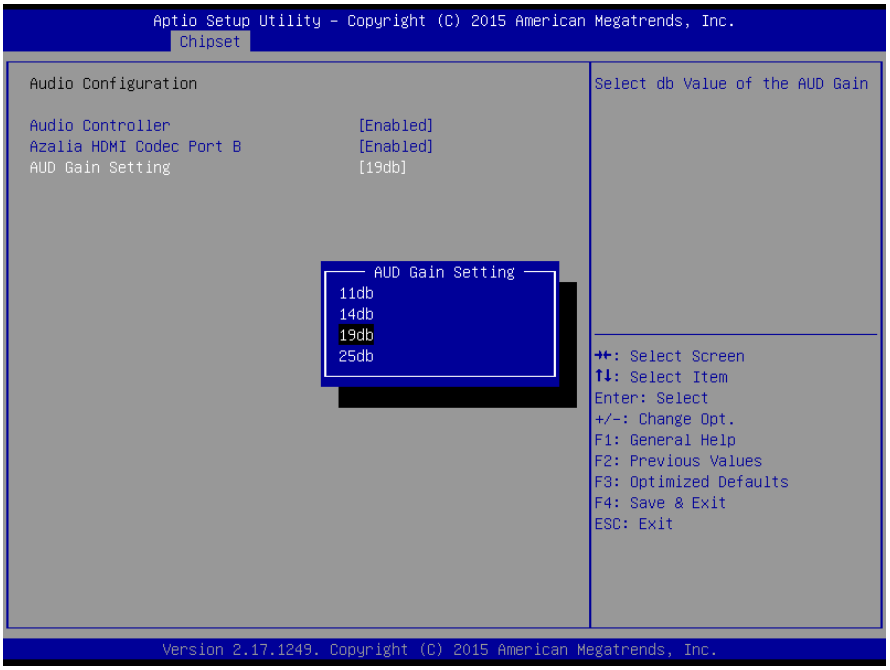


3.6.3.2.1 Azalia Configuration



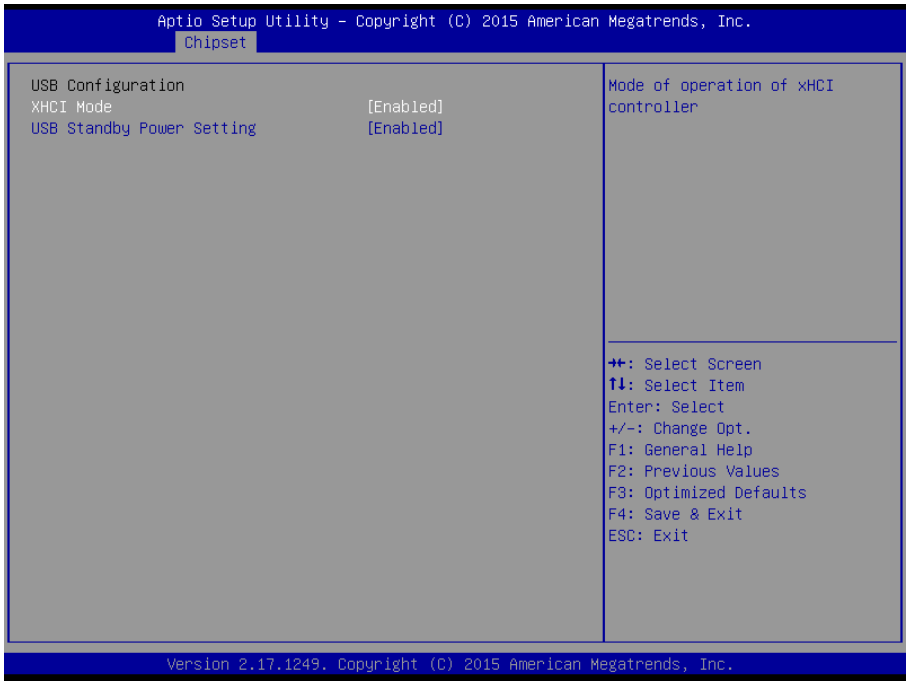

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
Audio Configuration
Audio Controller [Enabled]
Azalia HDMI Codec Port B [Enabled]
AUD Gain Setting [19db]
Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.
Audio Controller
Disabled
Enabled
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

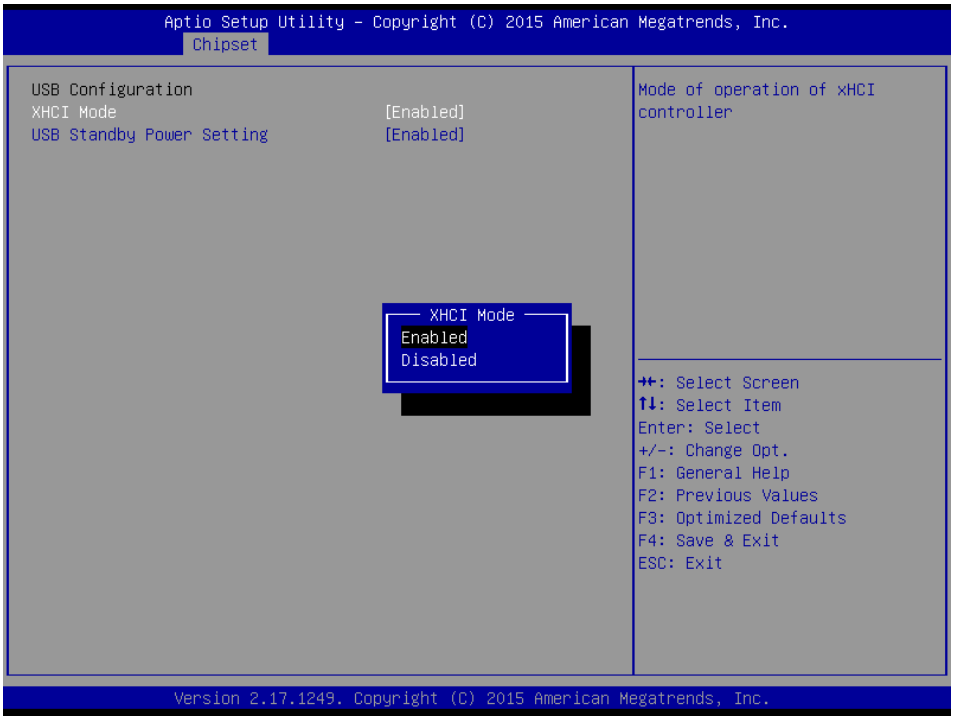

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
Audio Configuration
Audio Controller [Enabled]
Azalia HDMI Codec Port B [Enabled]
AUD Gain Setting [19db]
Enable/Disable internal HDMI Port codec for Azalia
Azalia HDMI Codec Port B
Disabled
Enabled
: Select Screen
: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

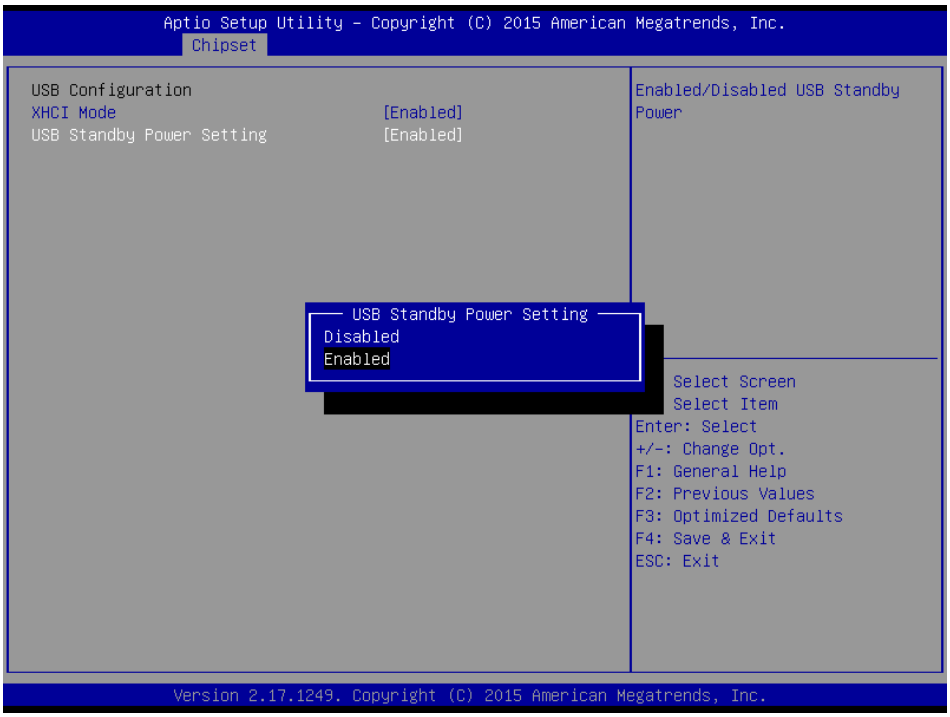


Item	Option	Description
Audio Controller	Enabled**[Default]**, Disabled	Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.
Azalia HDMI Codec Port B	Enabled**[Default]**, Disabled	Enable/Disable HDMI Port codec for Azalia.
AUD Gain Setting	11db 14db 19db**[Default]** 25db	Select db Value of the AUD Gain.

3.6.3.2.2 USB Configuration

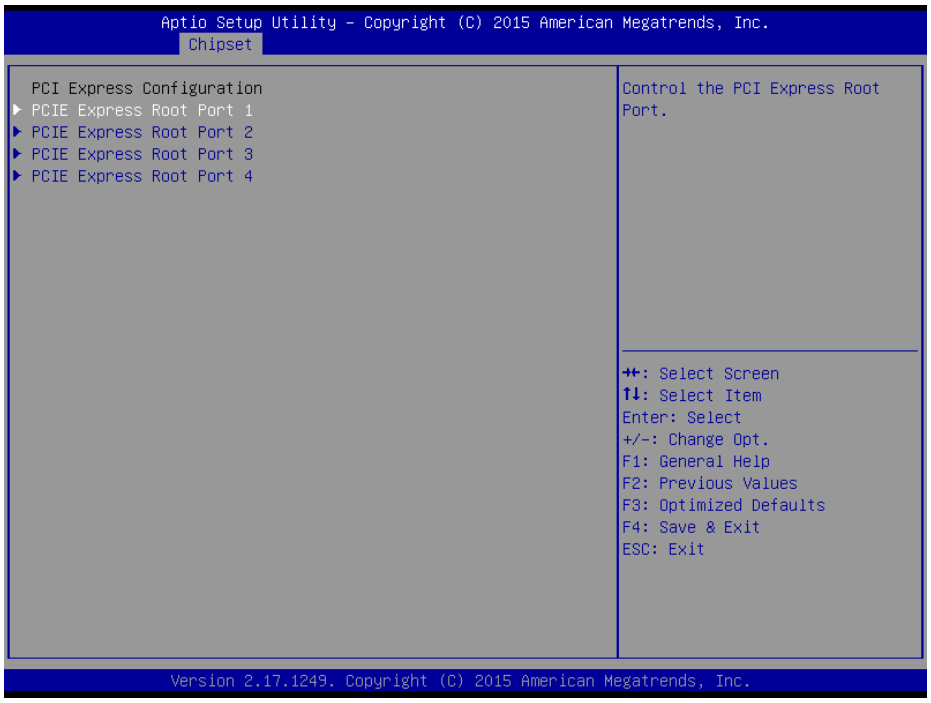




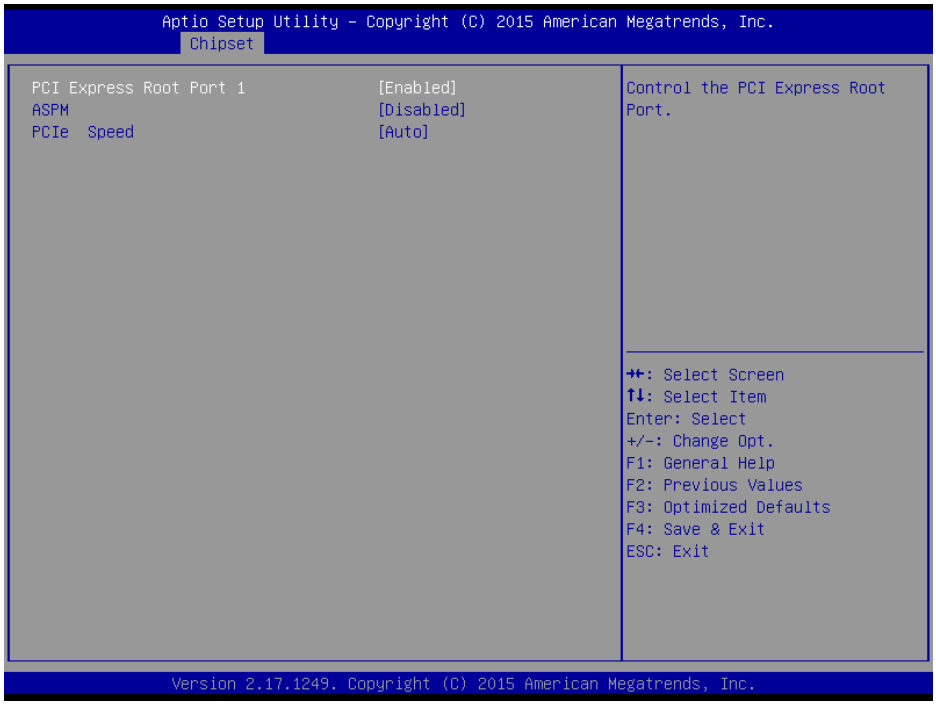


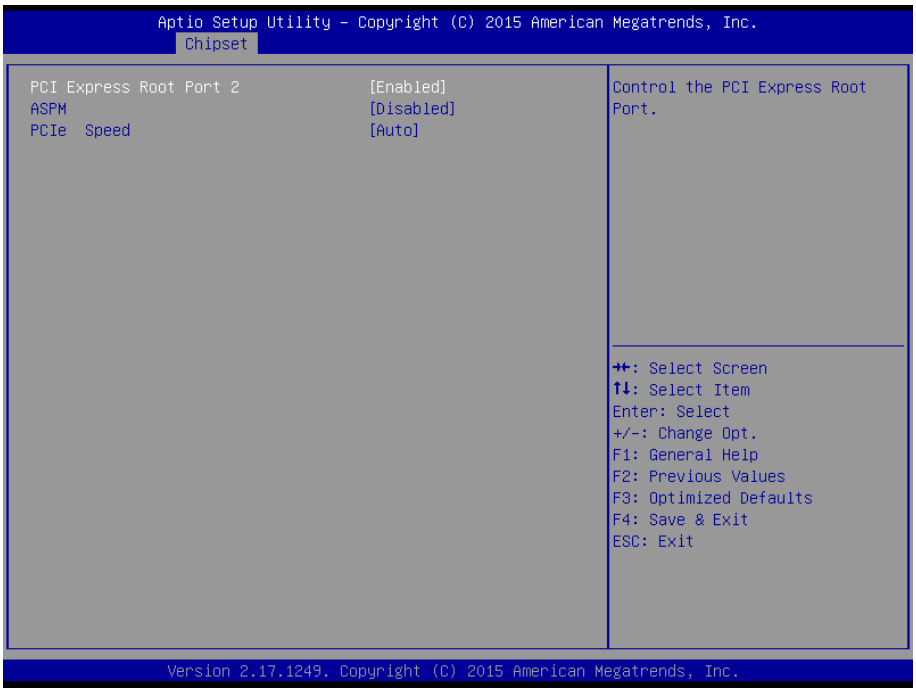
Item	Option	Description
XHCI Mode	Enabled**[Default]**, Disabled	Mode of operation of xHCI controller.
USB Standby Power Setting	Enabled**[Default]**, Disabled	Enabled/Disabled USB Standby Power.

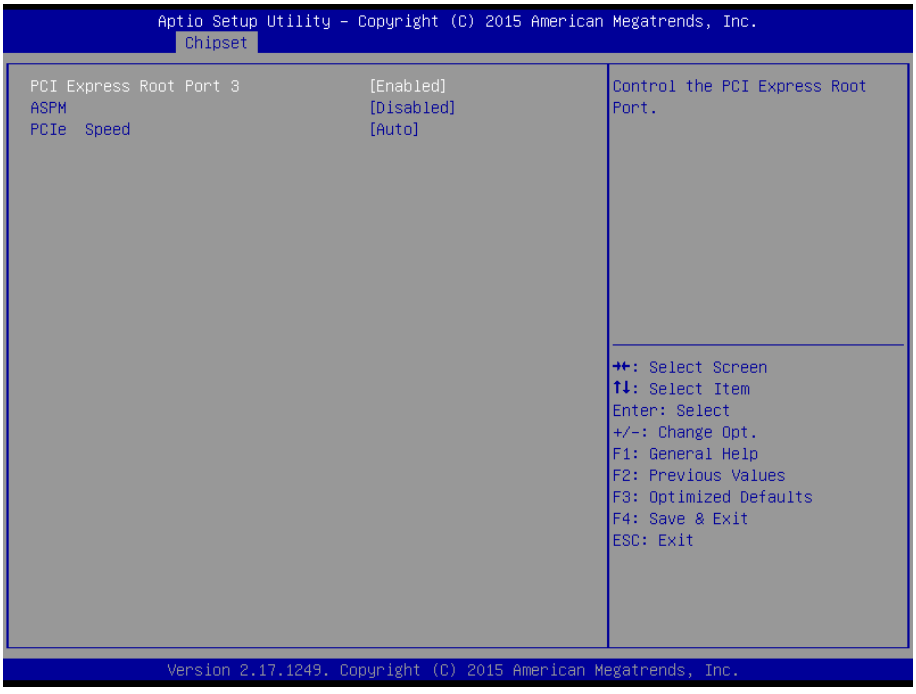
3.6.3.2.3 PCI Express Configuration

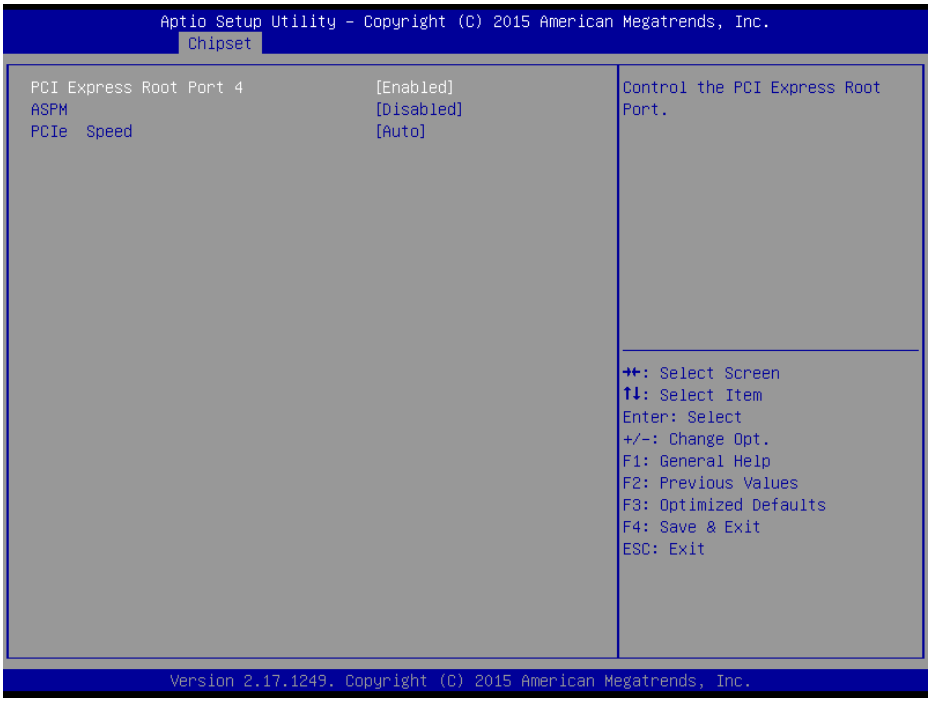


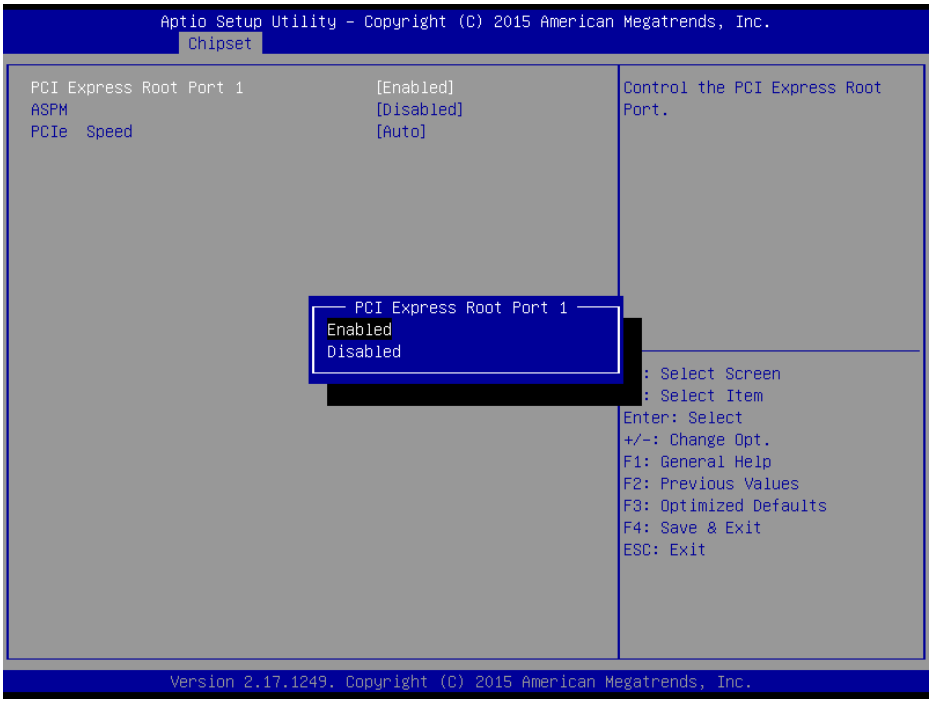
3.6.3.2.3.1 PCIE Express Root Port1

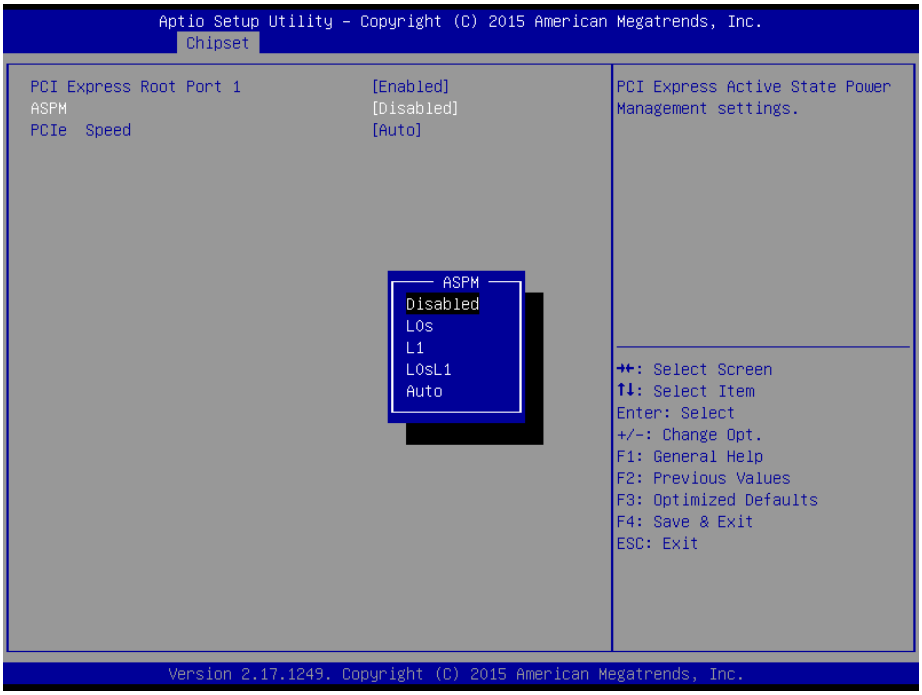


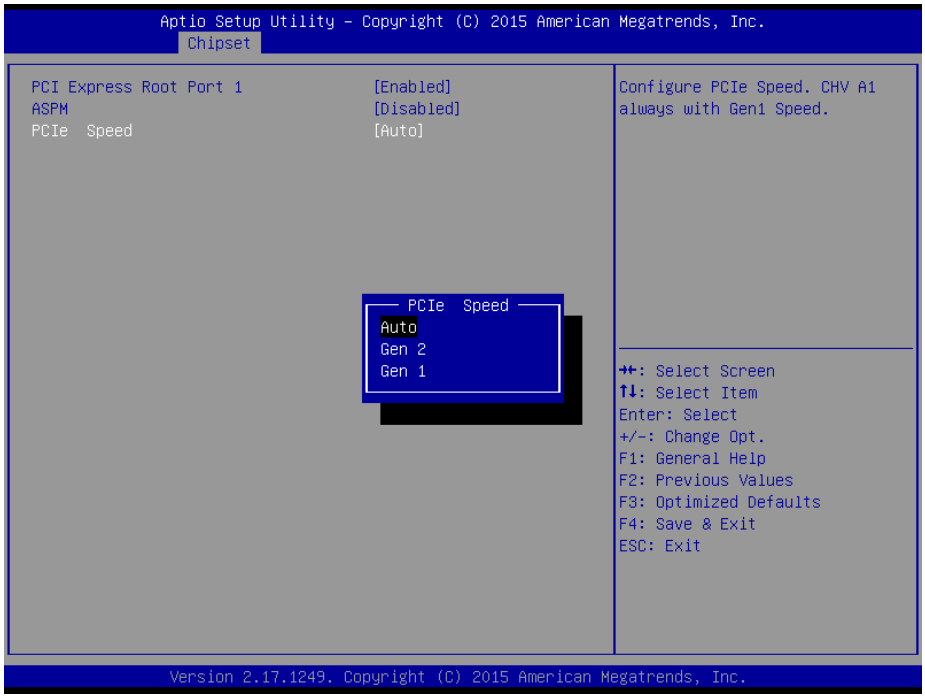

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
PCI Express Root Port 2 [Enabled]
ASPM [Disabled]
PCIe Speed [Auto]
Control the PCI Express Root Port.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
PCI Express Root Port 3 [Enabled]
ASPM [Disabled]
PCIe Speed [Auto]
Control the PCI Express Root Port.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
PCI Express Root Port 4 [Enabled]
ASPM [Disabled]
PCIe Speed [Auto]
Control the PCI Express Root Port.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Chipset
PCI Express Root Port 1 [Enabled]
ASPM [Disabled]
PCIe Speed [Auto]
Control the PCI Express Root Port.
PCI Express Root Port 1
Enabled
Disabled
: Select Screen
: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

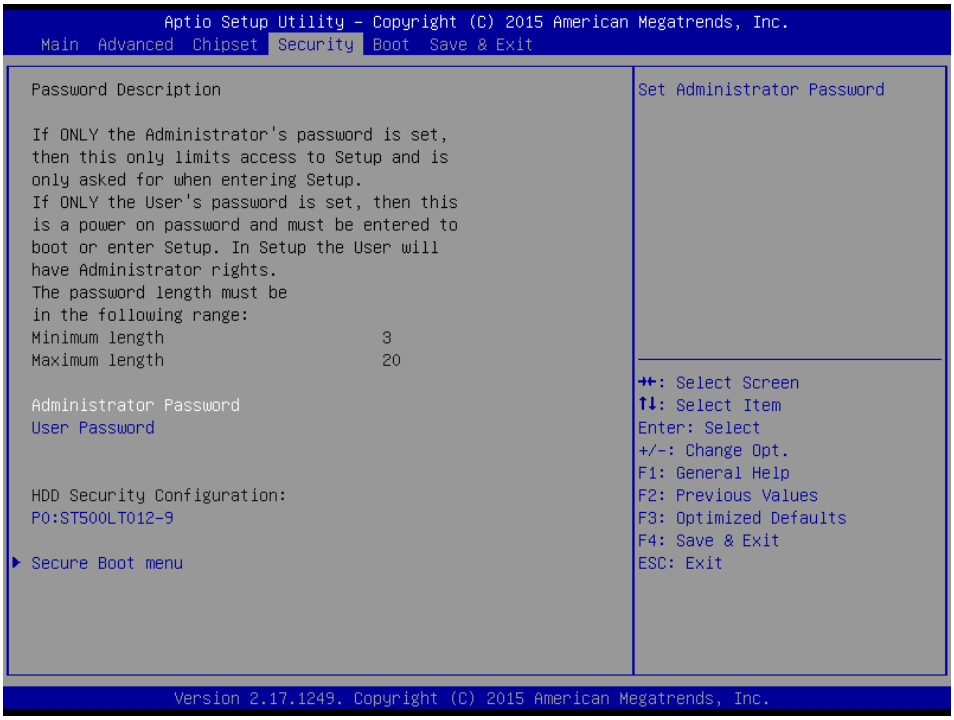




Item	Option	Description
PCI Express Root Port 1/2/3/4	Enabled**[Default]**, Disabled	Control the PCI Express Root Port.
ASPM	Disabled**[Default]** L0s L1 L0sL1 Auto	PCI Express Active State Power Management settings.

PCIe Speed	Auto**[Default]** Gen 2 Gen 1	Configure PCIe Speed. CHV A1 always with Gen 1 Speed.

3.6.4 Security



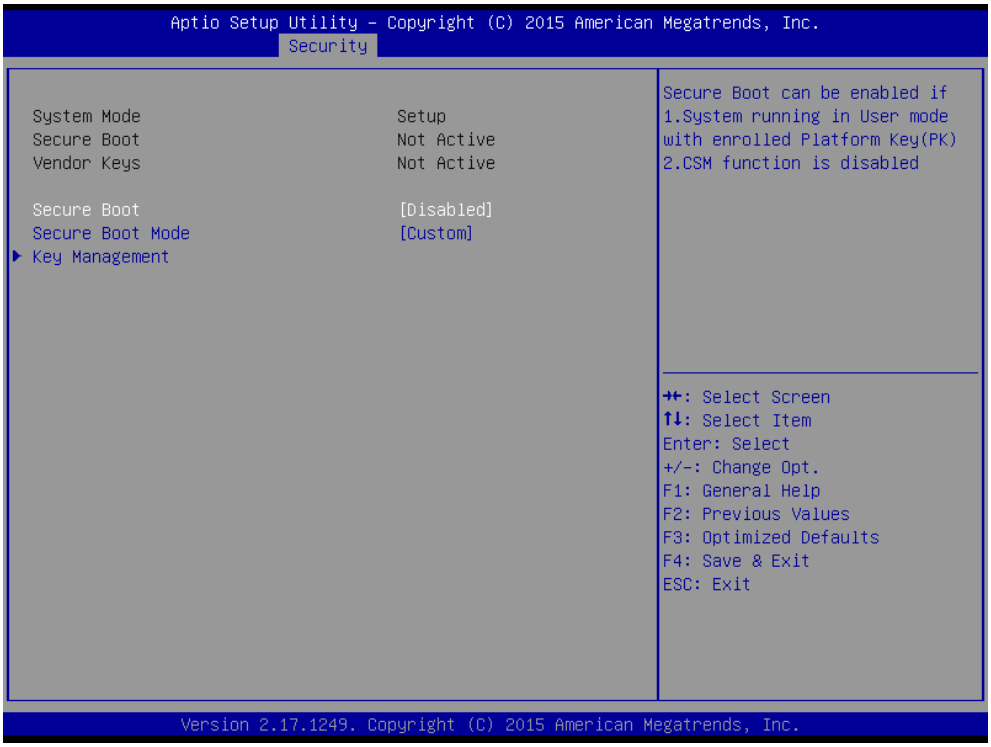
- **Administrator Password**

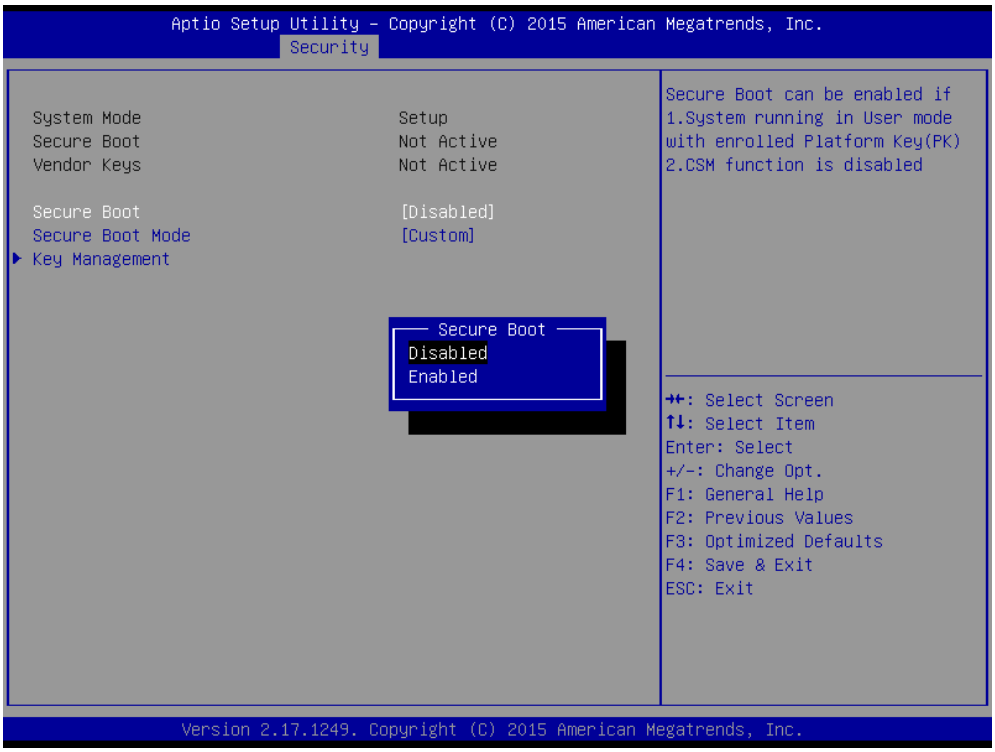
Set setup Administrator Password

- **User Password**

Set User Password

3.6.4.1 Secure Boot menu

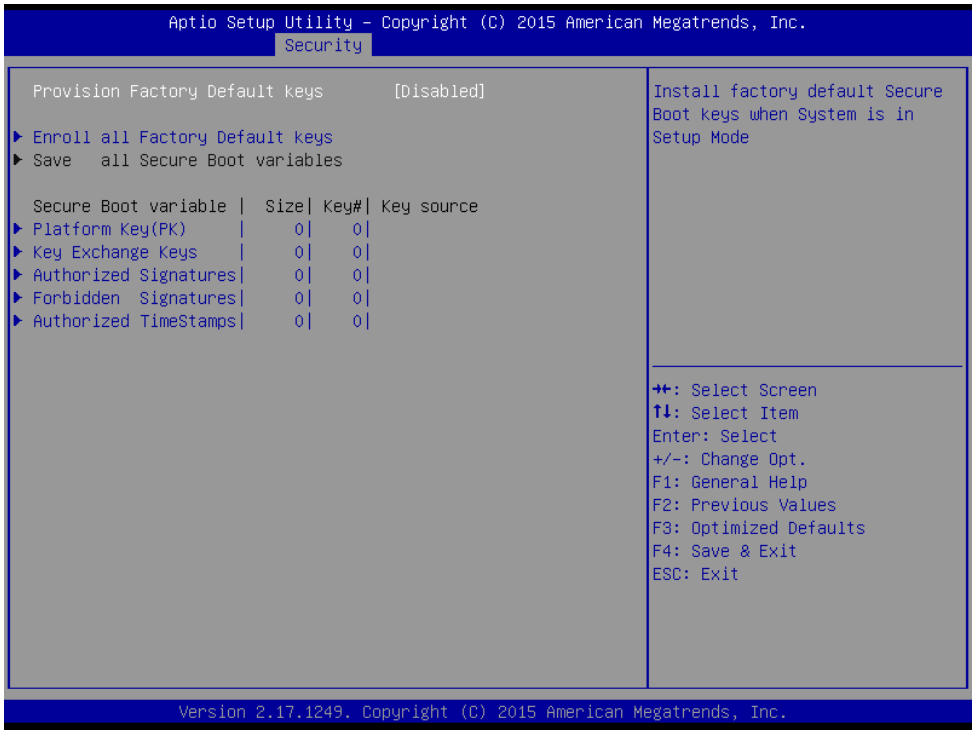




Item	Option	Description
Secure Boot	Disabled**[Default]** Enabled	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled.

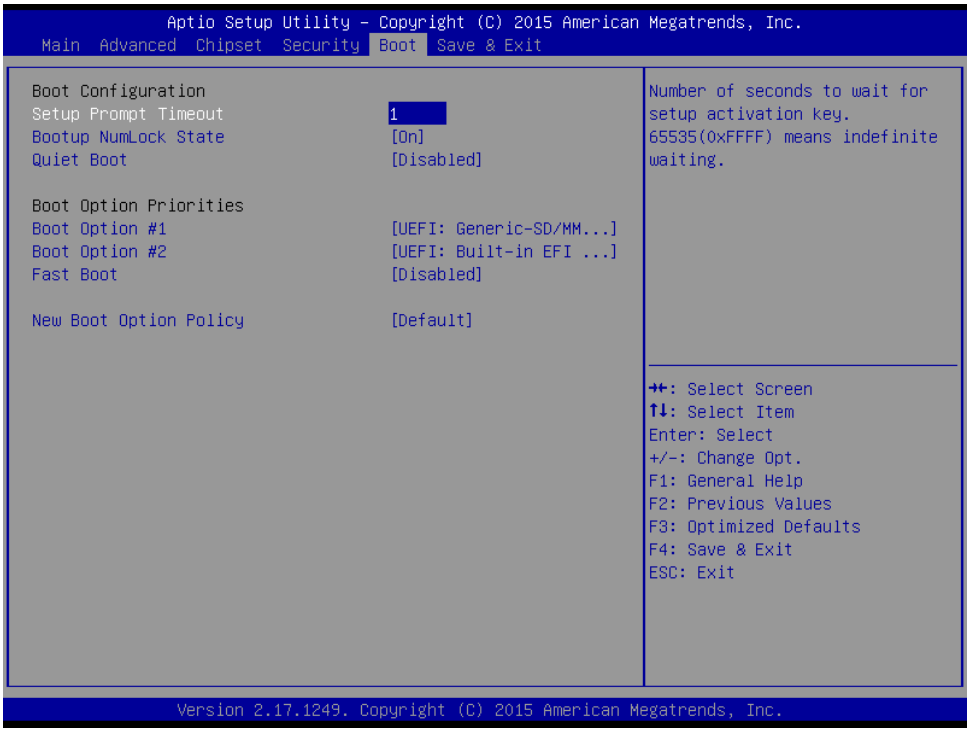
Secure Boot Mode	Standard Custom**[Default]**	Secure Boot mode selector. 'Custom' Mode enables users to change Image Execution policy and manage Secure Boot Keys.

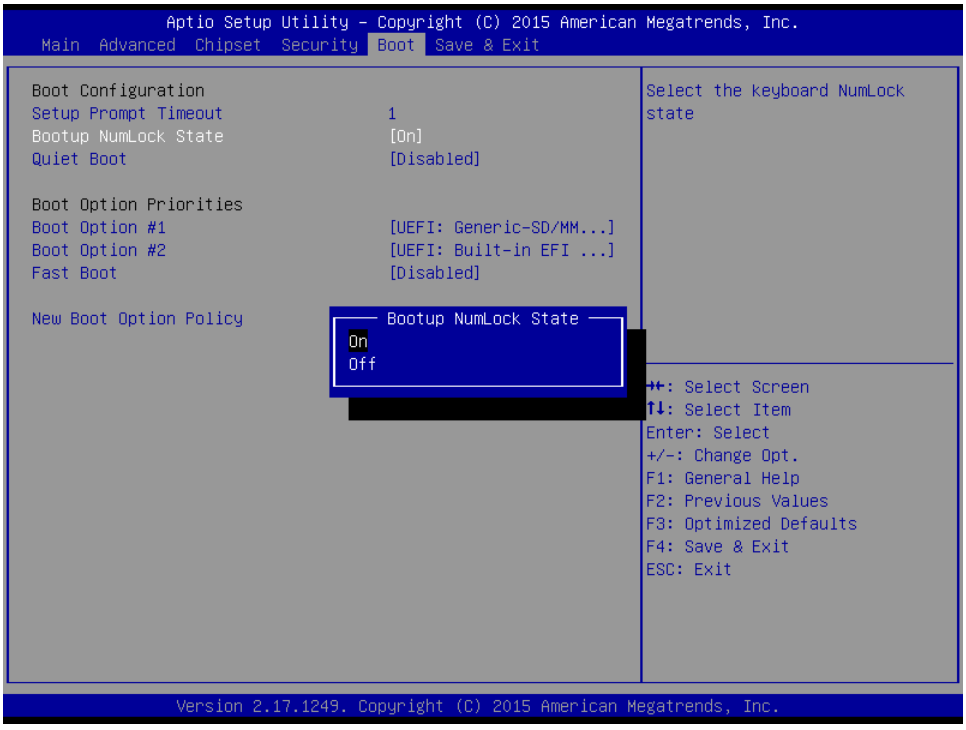
3.6.4.1.1 Key Management

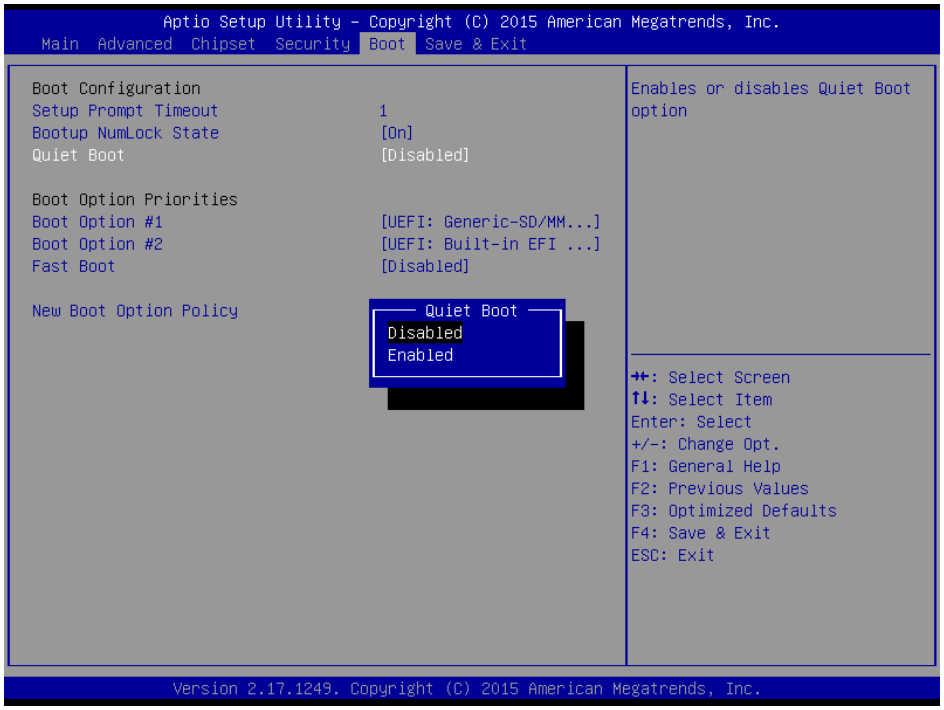


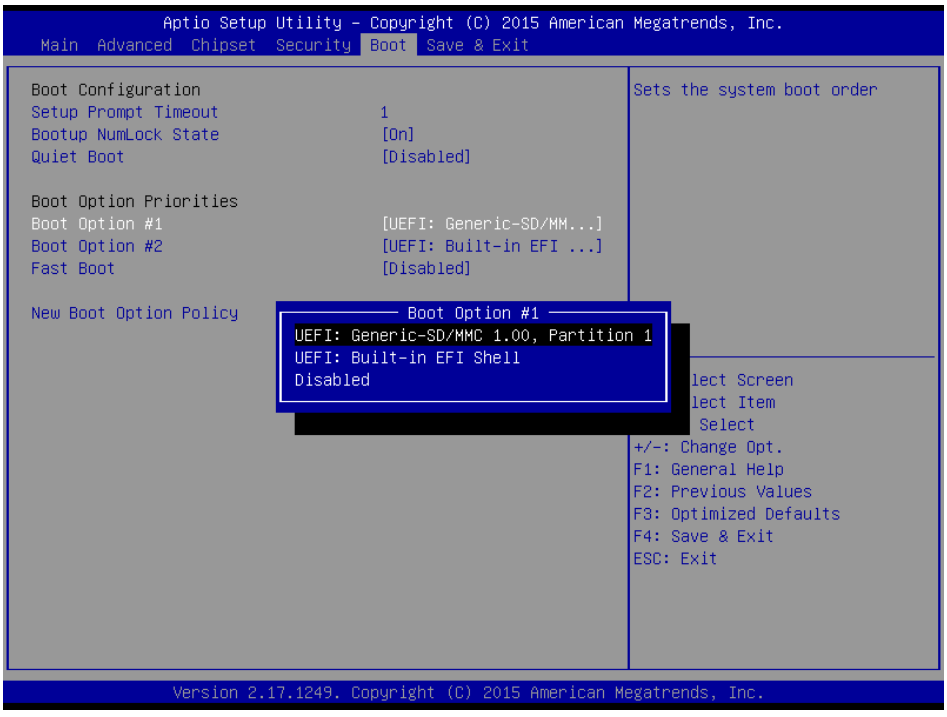
Item	Option	Description
Provision Factory Default Keys	Enabled, Disabled**[Default]**	Install Factory default Secure Boot Keys when System is in Setup Mode.

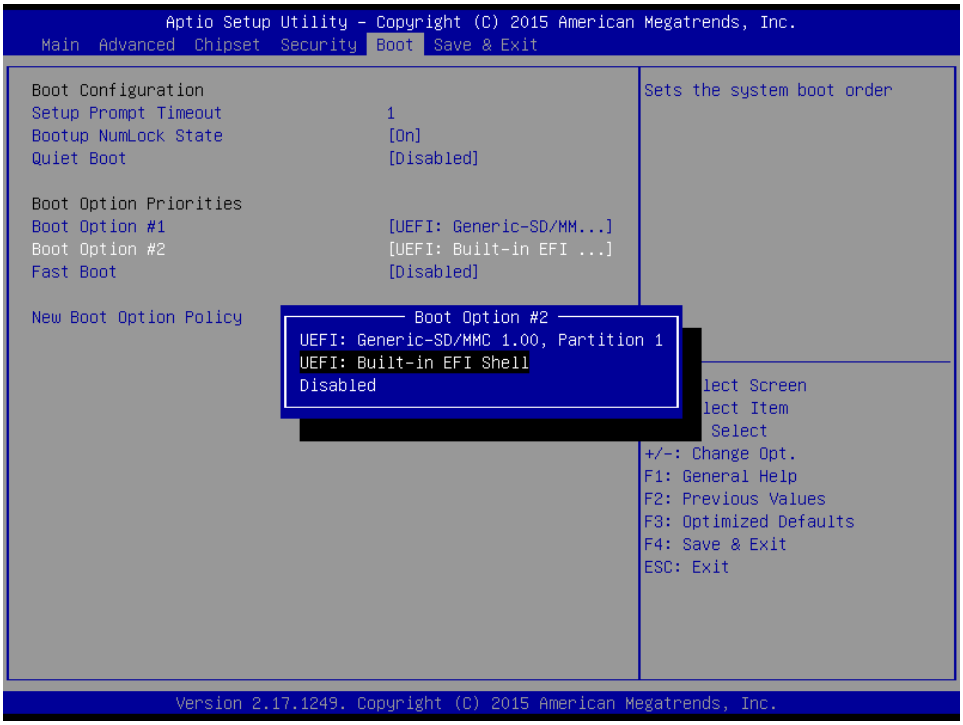
3.6.5 Boot

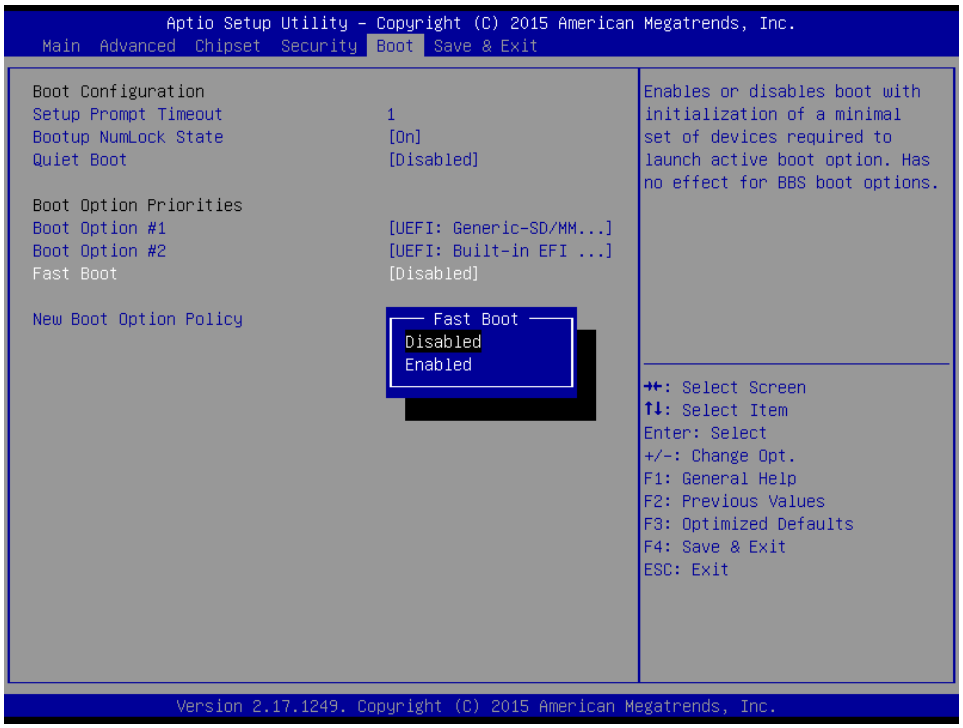

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy [Default]
Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

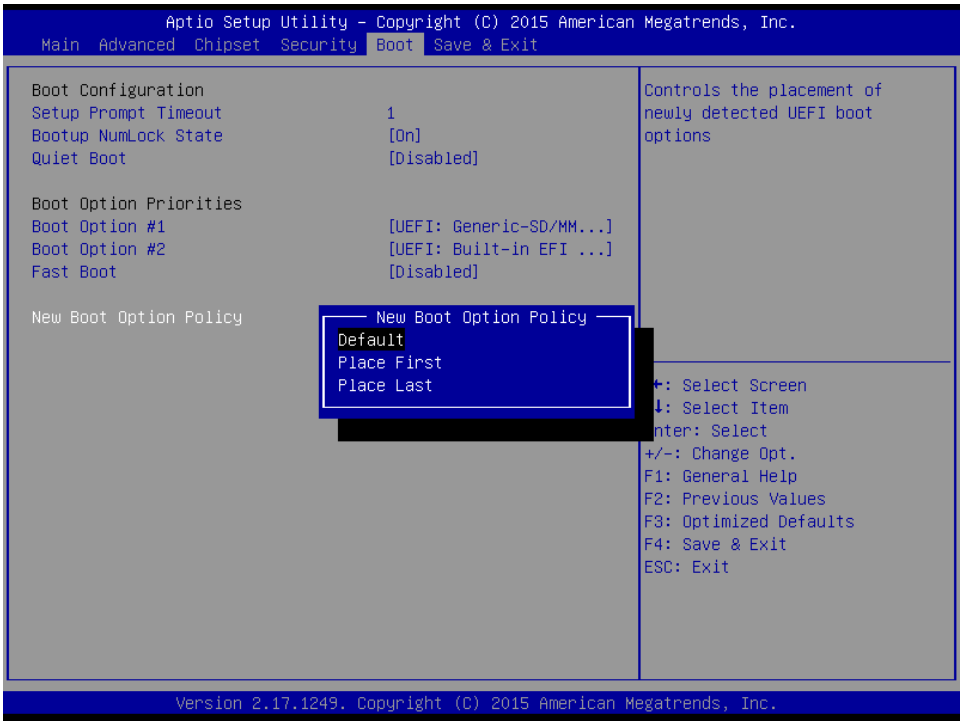

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy
Bootup NumLock State
On
Off
Select the keyboard NumLock state
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy
Quiet Boot
Disabled
Enabled
Enables or disables Quiet Boot option
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy
Boot Option #1
UEFI: Generic-SD/MMC 1.00, Partition 1
UEFI: Built-in EFI Shell
Disabled
Sets the system boot order
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

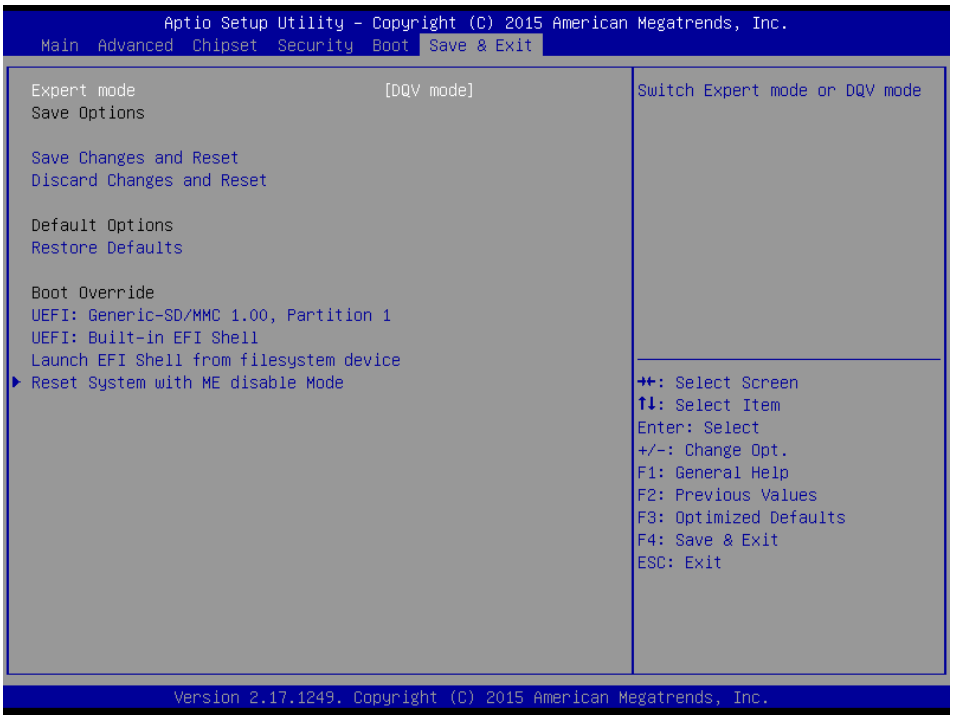

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy
Boot Option #2
UEFI: Generic-SD/MMC 1.00, Partition 1
UEFI: Built-in EFI Shell
Disabled
Sets the system boot order
lect Screen
lect Item
Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.

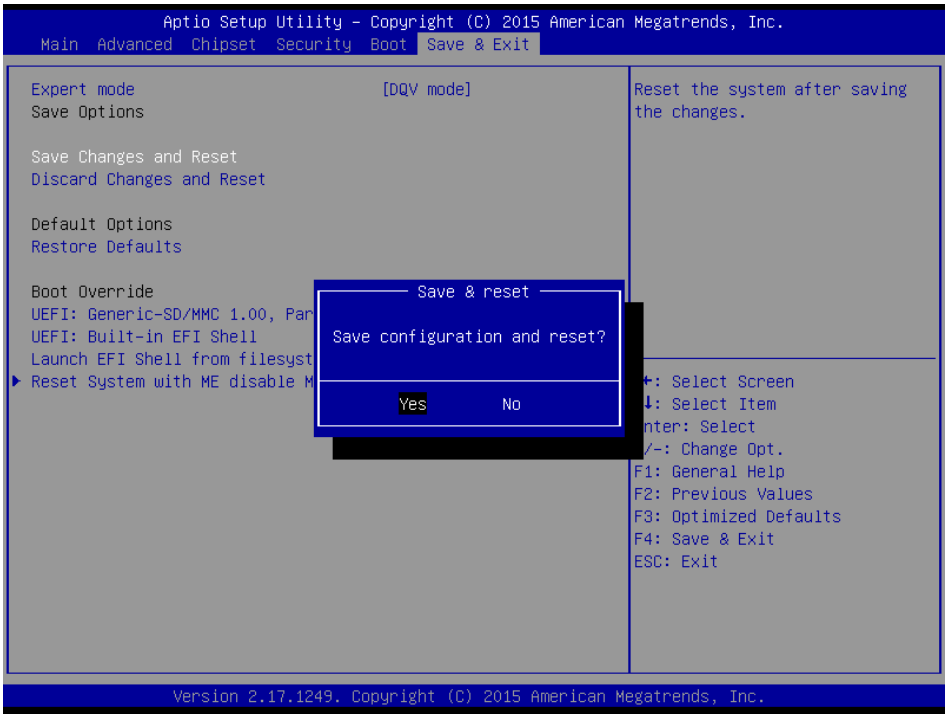

Aptio Setup Utility – Copyright (C) 2015 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout 1
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [UEFI: Generic-SD/MM...]
Boot Option #2 [UEFI: Built-in EFI ...]
Fast Boot [Disabled]
New Boot Option Policy
Fast Boot
Disabled
Enabled
Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.17.1249. Copyright (C) 2015 American Megatrends, Inc.



Item	Option	Description
Setup Prompt Timeout	1~ 65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the Keyboard NumLock state
Quiet Boot	Disabled**[Default]** Enabled	Enables or disables Quiet Boot option
Fast Boot	Disabled**[Default]** Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
New Boot Option Policy	Default**[Default]** Place First Place Last	Controls the placement of newly detected UEFI boot options.
Boot Option #1/2	Set the system boot order.	

3.6.6 Save and exit





Item	Option	Description
Expert mode	DQV mode**[Default]** Expert mode	Switch Expert mode or DQV mode.
Save Changes and Reset	Reset the system after saving the changes.	
Discard Changes and Reset	Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and	

	reboots the controller.
Restore Defaults	This option restores all BIOS settings to the factory default. This option is useful if the controller exhibits unpredictable behavior due to an incorrect or inappropriate BIOS setting.
Launch EFI Shell from filesystem device	Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

4. Drivers Installation

Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

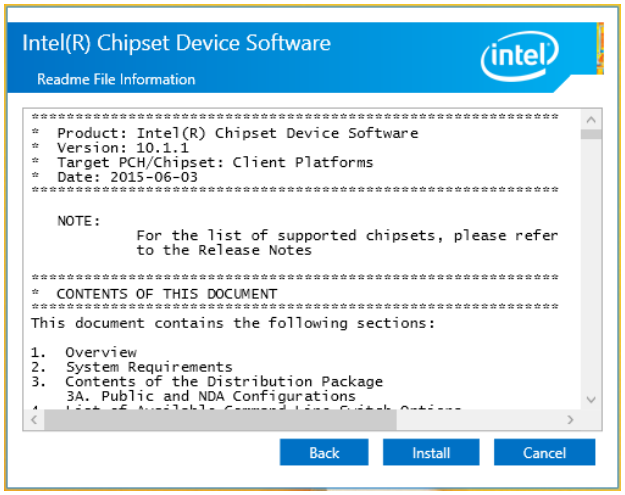
4.1 Install Chipset Driver

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system. If the warning message appears while the installation process, click Continue to go on.

Step1. Click **Next**.

Step 2. Click **Accept**.



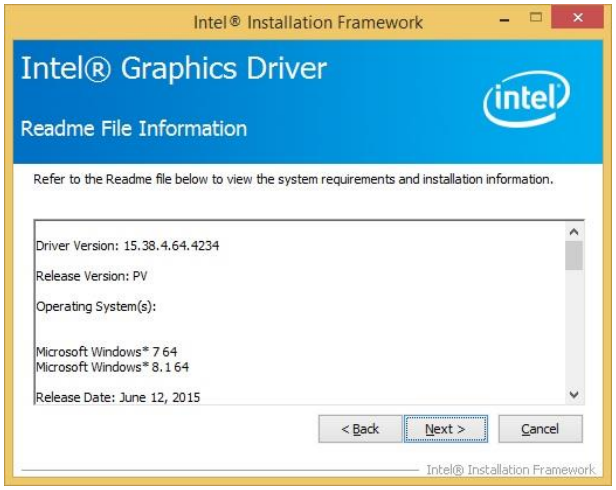
Step 3. Click **Install**.

Step 4. Click **Finish** to complete setup.

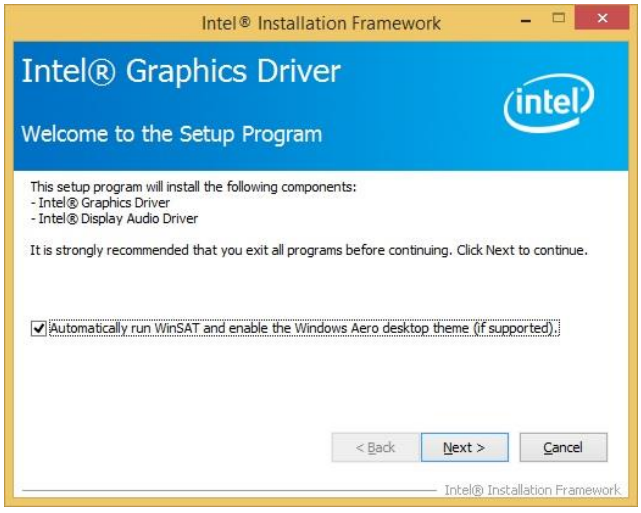
4.2 Install VGA Driver

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

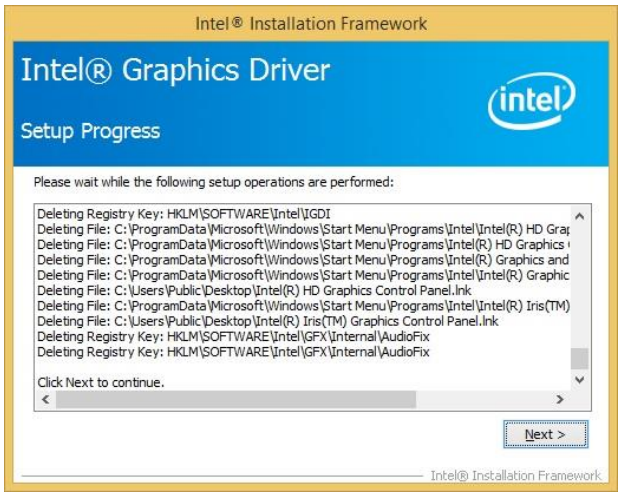
Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.



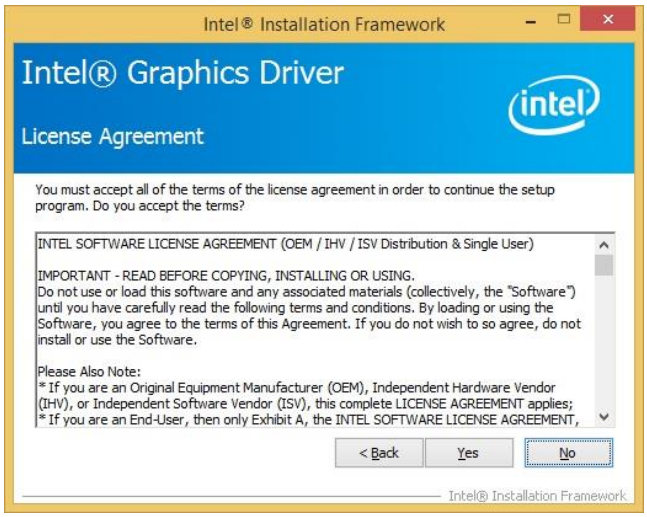
Step 3. Click **Next.**



Step 1. Click **Next** to continue installation.

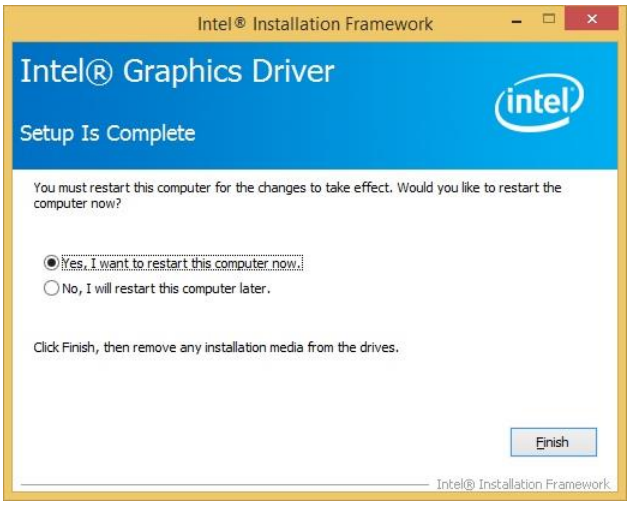


Step 4. Click **Next**.



Step 2.

Click **Yes** to accept license agreement.

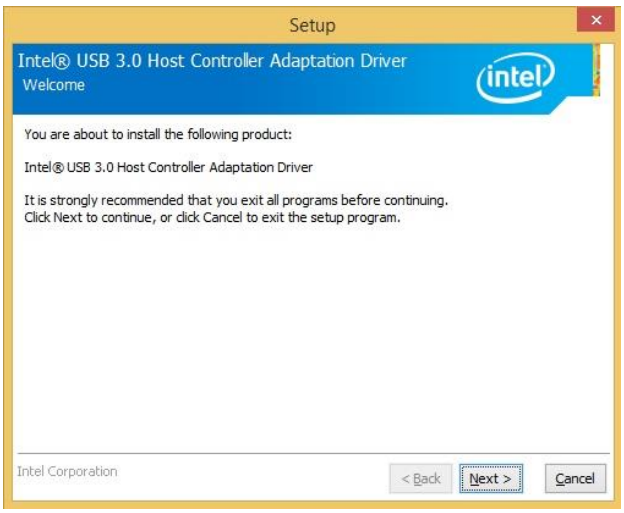


Step 5. Click **Finish** to complete setup.

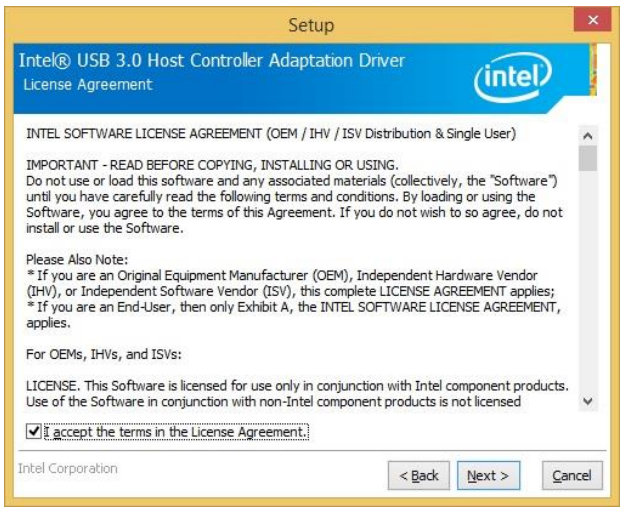
4.3 Install USB3.0 Driver

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

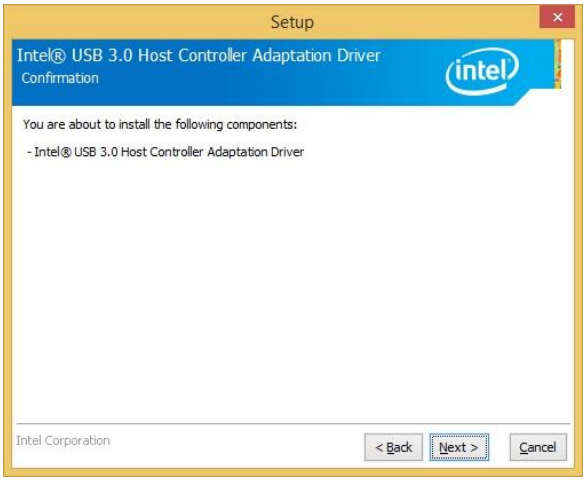
Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.



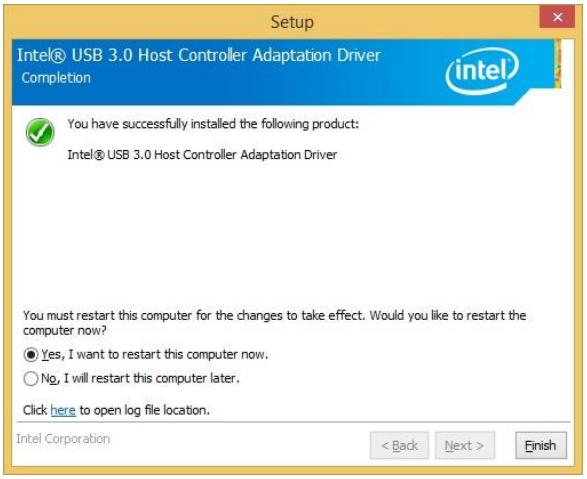
Step 1. Click **Next** to continue setup.



Step 2. Click **Next**.



Step 3. Click **Next**



Step 4. Click **Finish** to complete the setup

4.4 Install Serial IO Driver

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.

Step 1. Click **Next** to continue setup.

Step 2. Click **Finish** to complete the setup.

4.5 Install SMSC Hub Driver

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.

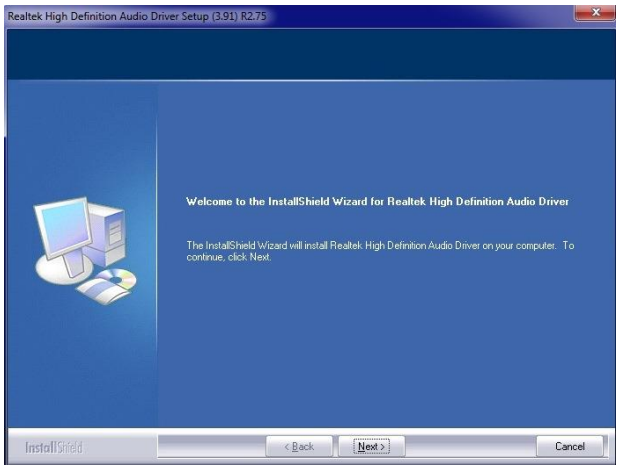
Step 1. Click **Install** to continue setup.

Step 2. Click **Yes** to complete the setup.

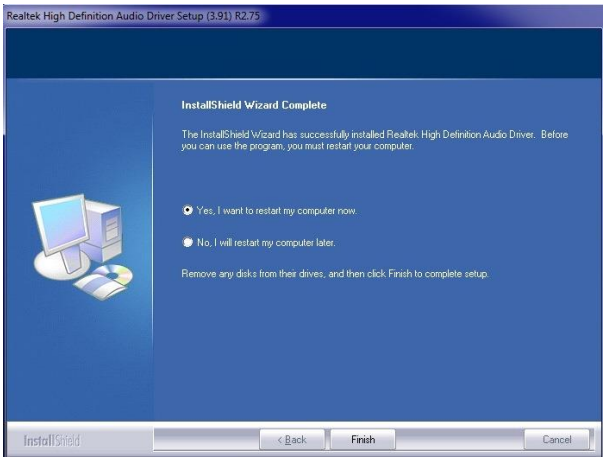
4.6 Install Audio Driver (For Realtek ALC662 HD Audio)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system. If the warning message appears while the installation process, click Continue to go on.



Step1. Click **Next** to Install.

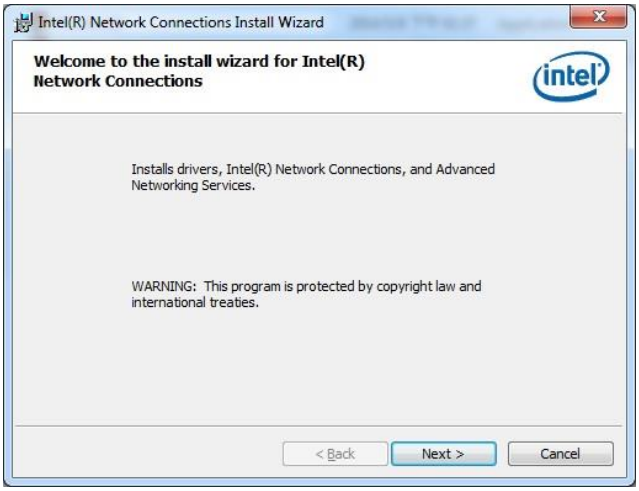


Step 2. Select **Finish** to complete Installation.

4.7 Install LAN Driver (For Intel I211AT)

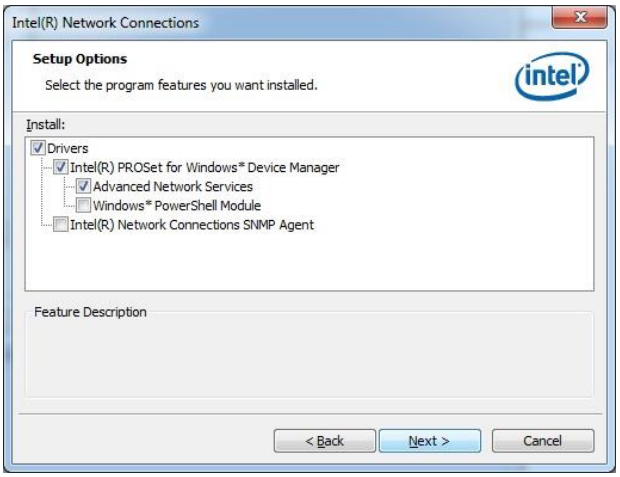
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.

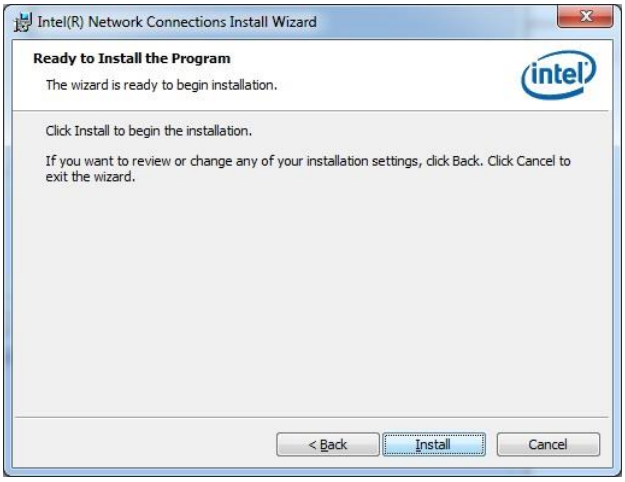


Step 1. Click **Next** to continue installation.

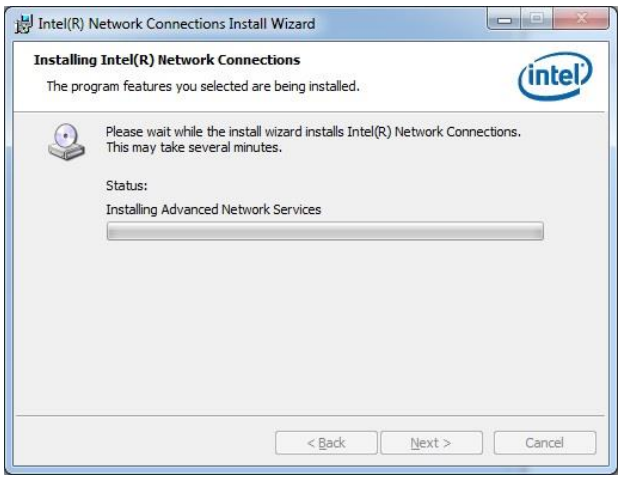
Step 2. Click **Next**.



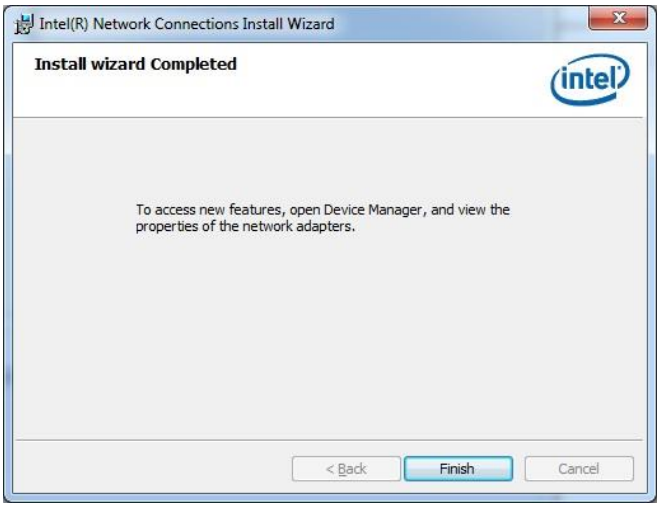
Step 3. Click **Next**.



Step 4. Click **Install**.

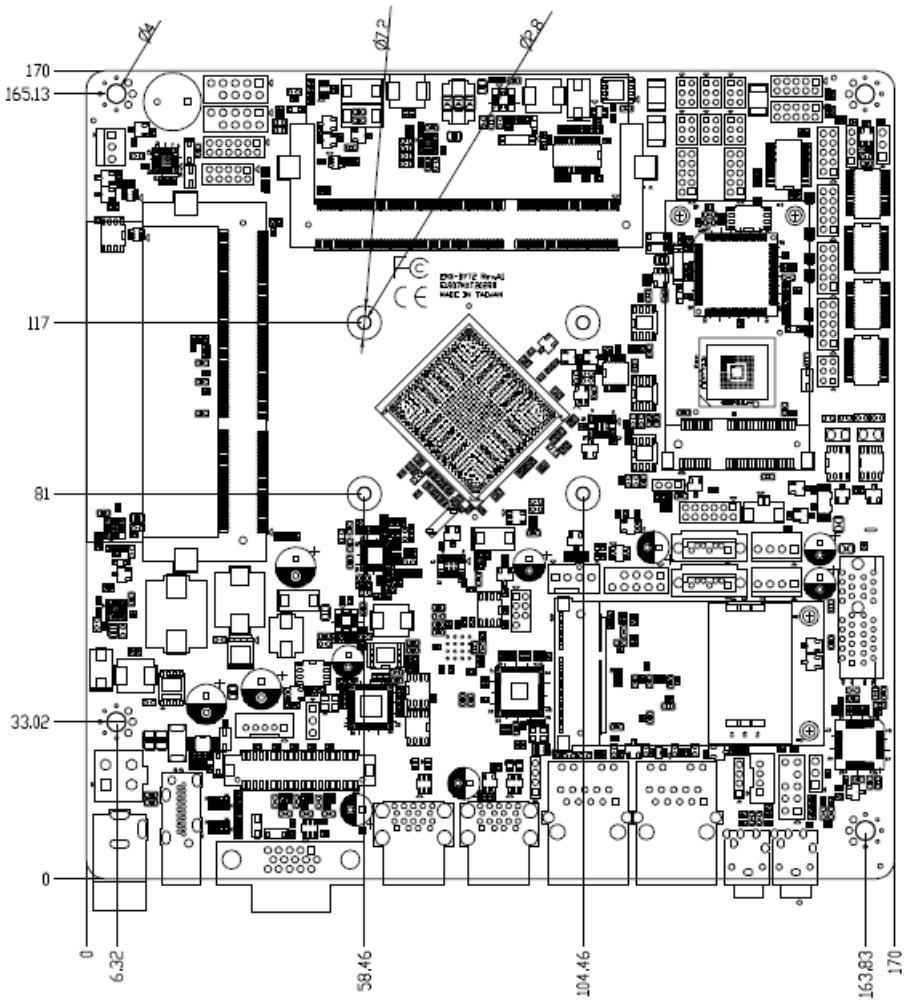


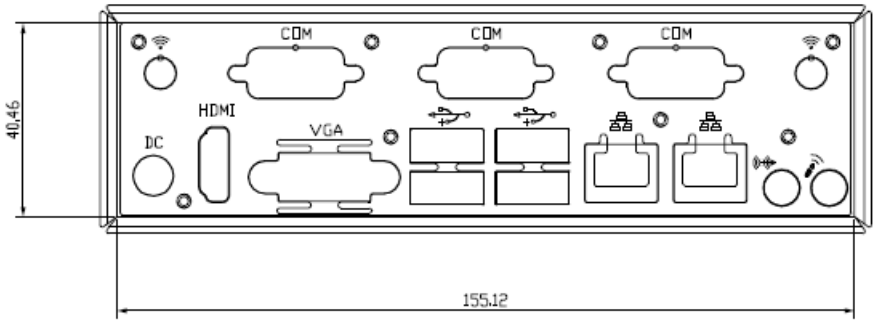
Step 5. Wait while installing.



Step 6. Click **Finish** to complete setup.

5. Mechanical Drawing


Ø4
Ø7.2
Ø2.8
170
165.13
117
81
33.02
0
0
6.32
58.46
104.46
163.83
170


COM
COM
COM
HDMI
VGA
DC
40.46
155.12

Unit: mm