

EAX-H81P

Intel® 4th Generation Core™ Refresh i7/ i5/ i3, Pentium® and Celeron® Processor ATX Motherboard With Intel® H81 Chipset

User's Manual



1st Ed –03 December 2018

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 UNDESIRE 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.

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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.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
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 EAX-H81P motherboard
- 2 x SATA cables
- 1 x I/O shield



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

1.3 Document Amendment History

Revision	Date	By	Comment
1 st	December 2018	Avalue	Initial Release

1.4 Manual Objectives

This manual describes in details Avalue Technology EAX-H81P 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 EAX-H81P 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® LGA1150 Socket Supports 4th Generation Core™ Refresh i7/ i5/ i3, Pentium® and Celeron® Processors (Max. TDP at 95W)
BIOS	AMI uEFI BIOS, 64Mbit SPI Flash ROM
System Chipset	Intel® H81 Chipset
I/O Chip	Nuvoton® NCT6106D
System Memory	Two 240-pin DDR3 1333/1600MHz DIMM socket, supports up to 16GB Max
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 PCI-e x16 1 x PCI-e x2 (Using PCI-e x 4 slot broken hole type) 1 x PCI-e x1 (Using PCI-e x 4 slot broken hole type) 4 x PCI
S3/S4	Yes (S0/S3/S4/S5)
I/O	
USB	2 x USB 3.0, 4 x USB 2.0
GPIO	16 bits
Display	
Chipset	Intel® H81 Express chipset
Resolution	VGA: 2048 x 1536 @ 60 Hz HDMI: 3840 x 2160 @ 30 Hz, 2560 x 1600@ 30 Hz (Note: This resolution is actual test result. Intel resolution: 4096x2304 @ 24 Hz 2560x1600 @ 60 Hz) DP: 3840x2160@60Hz
Multiple Display	Dual Display
HDMI	1 x HDMI
Audio	
AC97 Codec	Realtek ALC892 HD Audio Decoding Controller with 3W Amplifier
Audio Amp	1 x 4ohm 3W Amplifier
Ethernet	
LAN Chip	2 x Intel® I211AT PCI-e Gigabit Ethernet
Ethernet Interface	Gigabit

Internal I/O Connectors	
Fan	1 x 1 x 4 pin, pitch 2.54mm CPU fan connector with smart fan function supported 1 x 1 x 4 pin, pitch 2.54mm System fan connector with smart fan function supported 1 x 1 x 3 pin, pitch 2.54mm System fan connector
Buzzer	Onboard
CMOS Battery	1 x Vertical type battery connector Co-lay 1 x 2 Pin Pitch 1.25mm horizontal type battery connector
Power ON	1 x 2 x 5 pin, pitch 2.54mm connector for front panel
Audio	1 x 2 x 5 pin, pitch 2.54mm connector for front Audio
Internal I/O Connector	Storage: 2 x SATA III 2 x SATA II Optional Onboard Infineon SLB9635 support TPM 1.2 COM 2 & 3 : Support RS232/422/485 selected by BIOS selection 3 x 2 x 3 pin, pitch 2.00mm connector for COM 1~3 support RS232 with Pin 9, +5V/+12V/RI by jumper 2 x 2 x 3 pin, pitch 2.00mm connector for COM 2/3 support RS422/485 connector, Pin 5 with +5V 1 x 2 x 5 pin, pitch 2.00mm connector for COM 2 support RS-232 connector COM 3~6 1 x 2 x 20 pin, pitch 2.00mm connector for COM 3~6 support RS-232 connector COM 7~10 1 x 2 x 20 pin, pitch 2.00mm connector for COM 7~10: support RS-232 connector 6 x USB 2.0 by pin header r, 1 x USB 2.0 By Vertical type A connector USB Wake up by BIOS Setting 1 x 1 x 4 pin, pitch 2.54mm CPU fan connector with smart fan function supported 1 x 1 x 4 pin, pitch 2.54mm System fan connector with smart fan function supported 1 x 1 x 3 pin, pitch 2.54mm System fan connector 1 x 2 x 5 pin, pitch 2.54mm connector for front panel 1 x 2 x 10 pin, pitch 2.54mm connector for Auxiliary panel 1 x 4 pin, pitch 2.54mm connector for Speaker Buzzer 1 x 2 x 5 pin, pitch 2.54mm connector for front Audio 1 x 4 pin, pitch wafer 2.00mm connector for 2W Speaker 1 x 1 x 4 pin, pitch 2.54mm connector for S/PDIF 1 x 1 x 3pin, pitch 2.54mm connector for COMS Clear 1 x Vertical type battery connector Co-lay 1 x 2 Pin Pitch 1.25mm horizontal type battery connector 1 x 2 x 10 pin, pitch 2.00mm connector for GPIO: 16 bits & +5VS Level SMBus

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	1 x 5 pin, pitch 2.54mm connector for +3.3S Level SMBus 1 x 2 x 4 pin, pitch 2.00mm connector for BIOS SPI 1 x 2 x 5 pin, pitch 2.0mm connector for LPC Onboard buzzer 1 x 2 x 13 pin, pitch 2.54mm wafer connector for LPT 1 x 1 x 6 pin, pitch 2.5mm wafer connector for KB / Mouse 1 x 1 x 3 pin pitch 2.00mm connector for AT/ATX jumper 1 x 2 x 12 pin ATX power connector 1 x 2 x 4 pin ATX 12V power connector
Rear I/O Connectors	
USB	2 x USB 3.0, 4 x USB 2.0
LAN	2 x Intel® I211AT PCI-e Gigabit Ethernet
Rear Side External I/O Connector	1 x RJ-45 with Dual deck USB3.0 connector 1 x RJ-45 with Dual deck USB2.0 connector 1 x VGA 1 x DP++ 1 x HDMI COM1 support RS-232 DB9 connector, Pin 9 with / +5V&+12V/RI Supported 1 x Line-out ,1 x Mic-In,1 x Line-in PS/2 KB/MS + USB2.0 connector
Mechanical & Environmental	
Power Requirement	+12V / +5V / 5VSB /+3.3V / -12V
ACPI	Single power ATX Support S0, S3, S4, S5
Power on Type	AT/ATX mode
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) (Please consult product engineers for the production feasibility if the size is larger than 410x360mm or smaller than 80x70mm)	12" x 9.6" (304.8mm x 243.84mm)
Weight	0.60 kg
OS Support	BIOS Support:

(listed in accordance with Intel document)	1.Win7 64bit CSM mode Win10 64bit UEFI Intel® LGA1150 Socket Supports 4th Generation CPU
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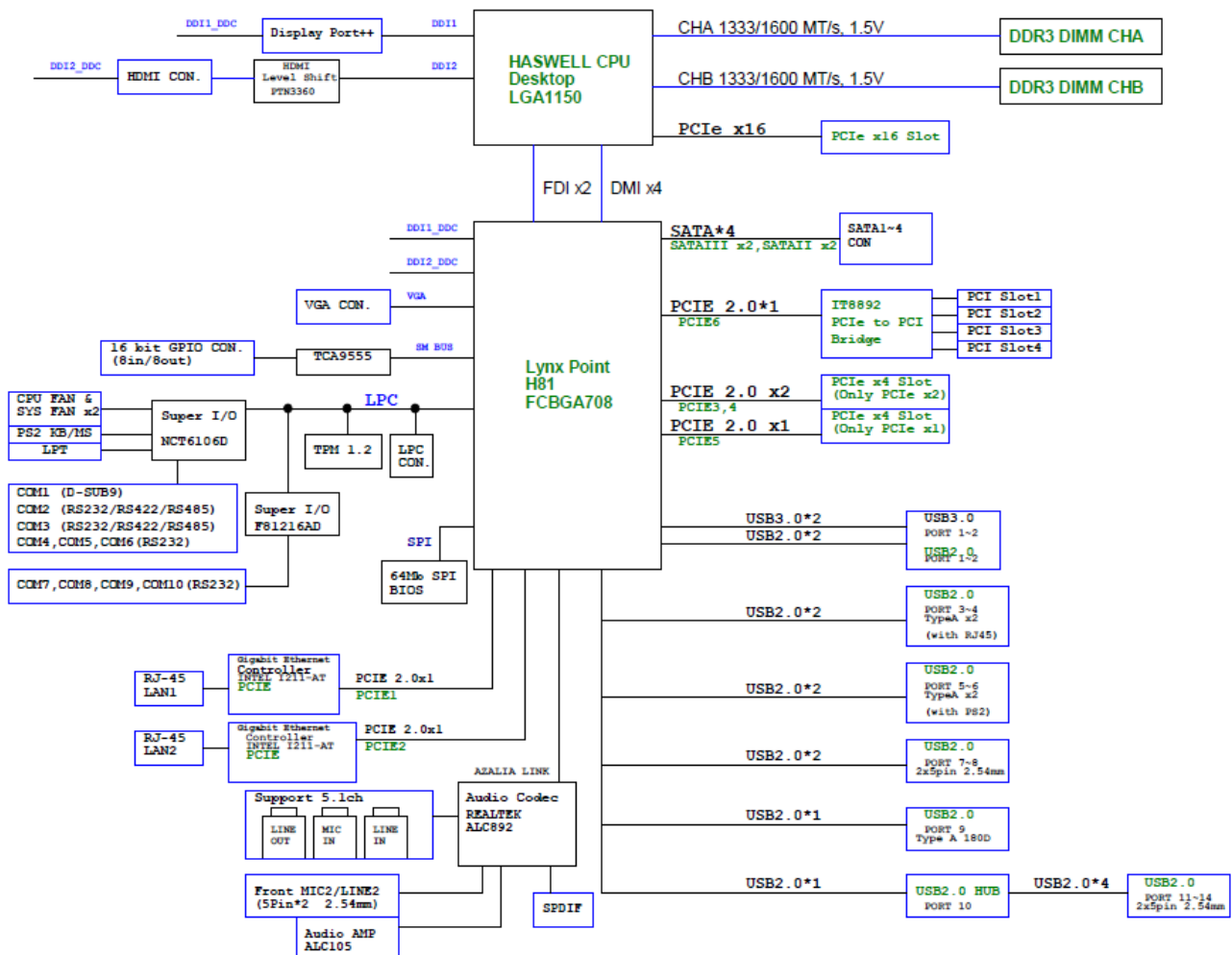


Note:

- It is suggested that customer to design powerful CPU cooler kit for their system when using 88W CPU.
- For internet connection via Intel® I211AT PCI-e Gigabit Ethernet, there may be pop-up Security Alert Window and internet laggy when using Internet Explorer, under Windows XP Operation System, while Firefox working normally.
- If installing Windows XP OS System, it is suggested to use USB DVD-ROM instead of SATA DVD-ROM.
- Due to Intel Haswell H81 Chipset limitation, 4K reslution quality report is not available.

1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of EAX-H81P.



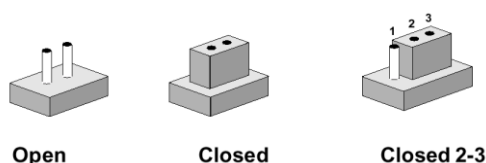
2. Hardware Configuration



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	Serial port 1/2/3 pin9 signal select	3 x 2 header, pitch 2.00mm
JATATX1	AT/ATX Power Mode Select	3 x 1 header, pitch 2.00mm
JCMOS1	Clear CMOS	3 x 1 header, pitch 2.54mm

Connectors

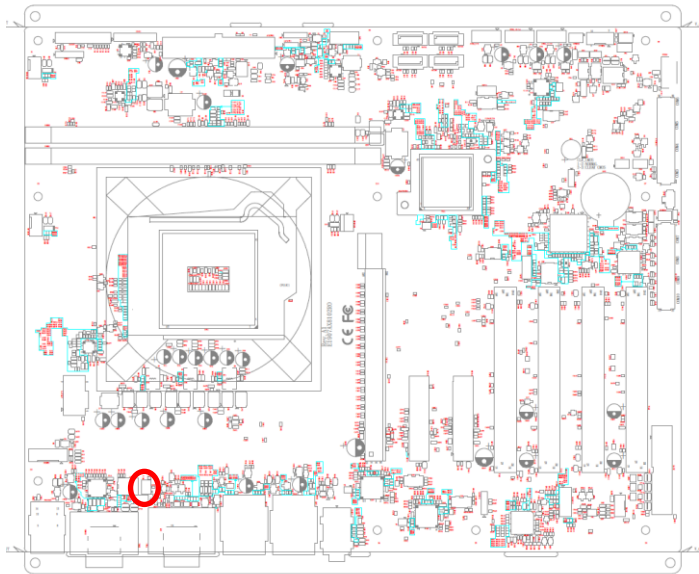
Label	Function	Note
CPUFAN1	CPU fan connector	4 x 1 wafer, pitch 2.54mm
SYSFAN1	System fan connector 1 (with smart fan function supported)	4 x 1 wafer, pitch 2.54mm
SYSFAN2	System fan connector 2	3 x 1 wafer, pitch 2.54mm
JFP1	Miscellaneous setting connector	5 x 2 header, pitch 2.54 mm
DIMM1/2	240 PIN DDR3 DIMM socket	

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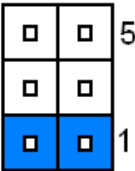
JAUDIO1	Audio connector 2	5 x 2 header, pitch 2.54 mm
JAUXP1	Auxiliary Panel connector	10 x 2 header, pitch 2.54 mm
JSPI1	SPI connector	4 x 2 header, pitch 2.00mm
JCOM2A	Serial Port 2 connector	5 x 2 wafer, pitch 2.00mm
JCOM2B	COM2 RS485/422 connector	3 x 2 header, pitch 2.00 mm
JCOM3B	COM2 RS485/422 connector	3 x 2 header, pitch 2.00 mm
JCOM3/4/5/6	Serial Port 3/4/5/6 connector	20 x 2 header, pitch 2.00 mm
JCOM7/8/9/10	Serial Port 7/8/9/10 connector	20 x 2 header, pitch 2.00 mm
JBZ1	External Speaker connector	4 x 1 header, pitch 2.54 mm
JDIO1	General purpose I/O connector	10 x 2 header, pitch 2.00 mm
JSPK1	Speaker connector	1 x 4 wafer, pitch 2.00 mm
JKBMS1	PS/2 keyboard & mouse connector	6 x 1 wafer, pitch 2.50 mm
LAN1/2	2 x RJ-45 with Dual deck USB 3.0 connector	
JUSB7/8	USB connector 7/8	5 x 2 header, pitch 2.54mm
JUSB11/12	USB connector 11/12	5 x 2 header, pitch 2.54mm
JUSB13/14	USB connector 13/14	5 x 2 header, pitch 2.54mm
JLPT1	LPTconnector	13 x 2 header, pitch 2.54 mm
JSPI1	SPI connector	5 x 2 header, pitch 2.00 mm
PCIE1/2/3	PCIe slot 1/2/3	
PCI1/2/3/4	PCI slot 1/2/3/4	
JBAT1	Battery connector	2 x 1 wafer, pitch 1.25mm
ATXPWR1	ATX Power connector	12 x 2 wafer, pitch 4.20mm
ATX12V1	Power connector	2 x 4 wafer, pitch 4.20mm
SATA1~4	Serial ATA connector 1~4	
HDMI1	HDMI connector	
DP1	DP connector	
VGA1	VGA connector	
JSPDIF1	S/PDIF connector	1 x 4 header, pitch 2.54mm
JSMB1	SMBus connector	5 x 1 header, pitch 2.54mm

2.3 Setting Jumpers & Connectors

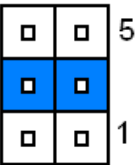
2.3.1 Serial port 1 pin9 signal select (JRI1)



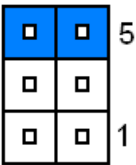
Ring*



+5V

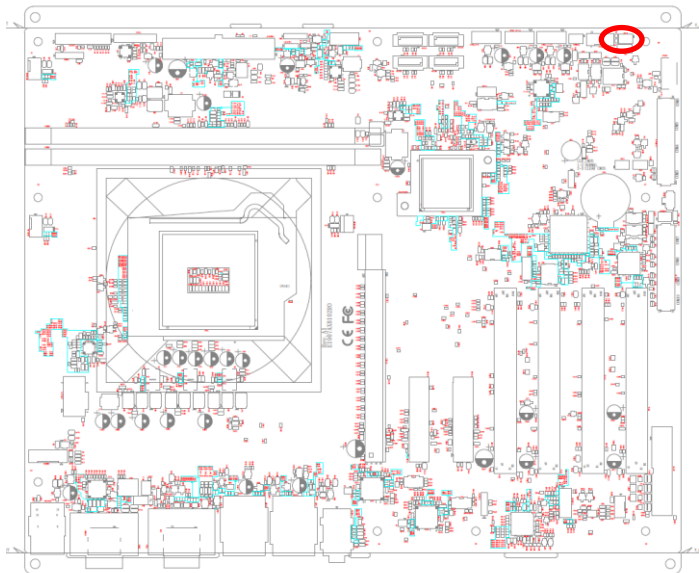


+12V

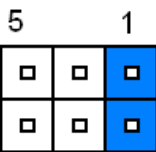


* Default

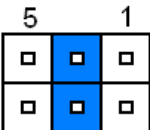
2.3.2 Serial port 2 pin9 signal select (JRI2)



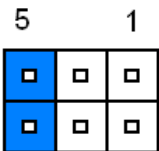
Ring*



+5V

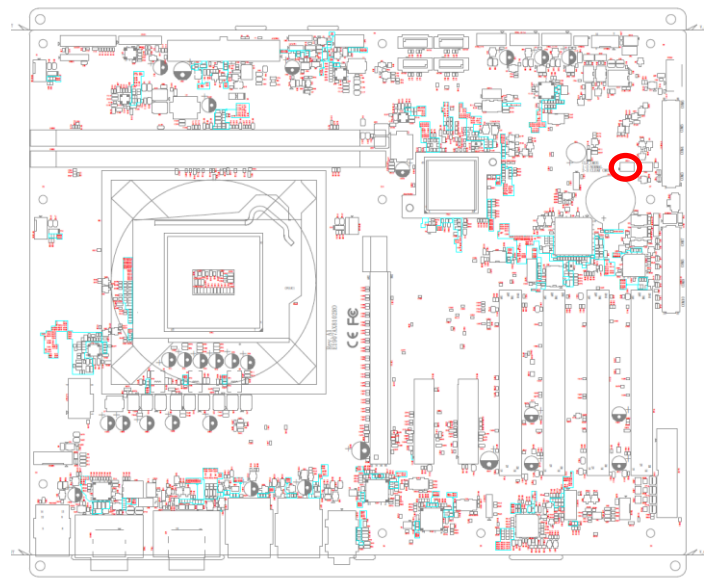


+12V

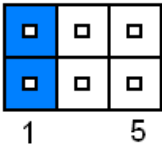


* Default

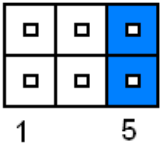
2.3.3 Serial port 3 pin9 signal select (JRI3)



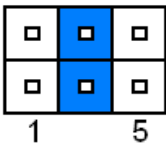
Ring*



+12V

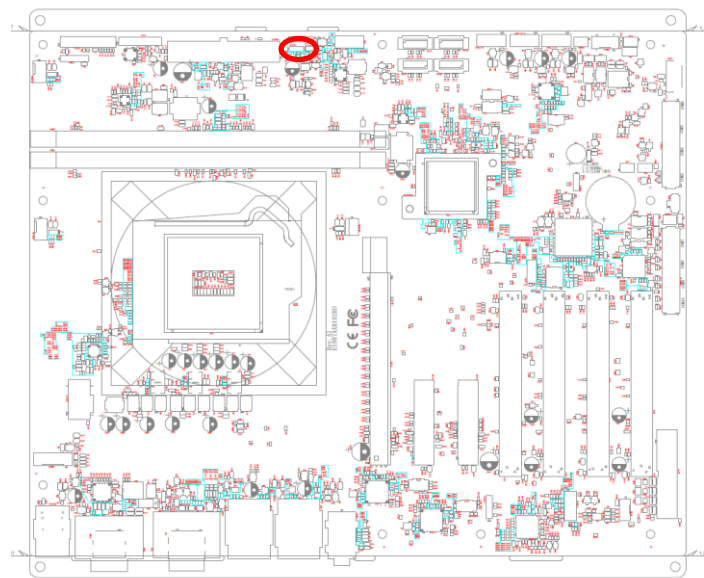


+5V

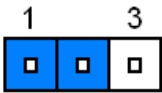


* Default

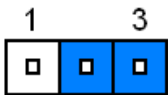
2.3.4 AT/ATX Power Mode Select (JATATX1)



AT*

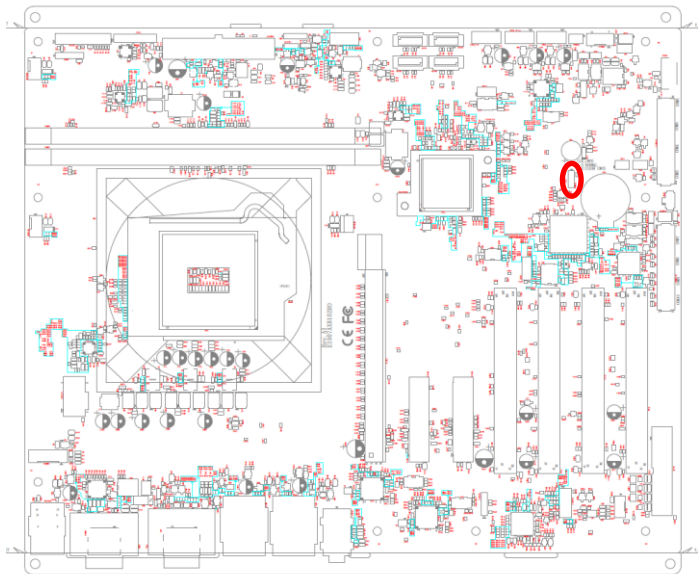


ATX

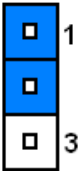


* Default

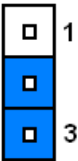
2.3.5 Clear CMOS (JCMOS1)



Protect*

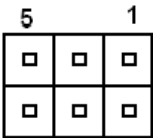
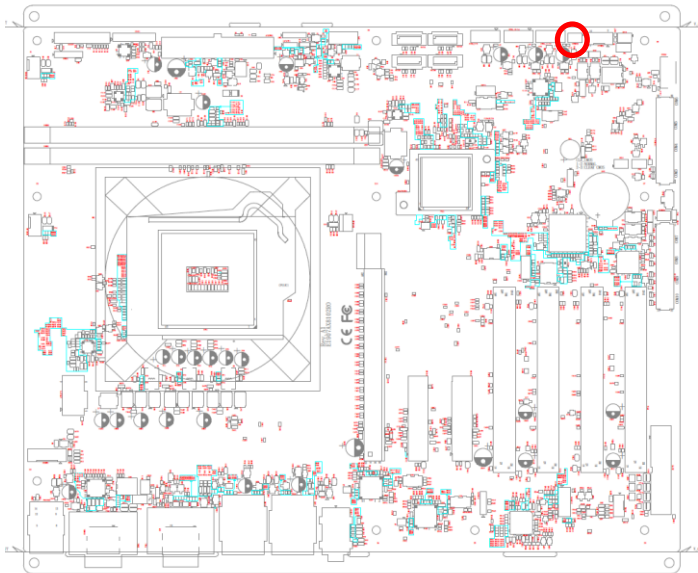


Clear CMOS



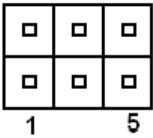
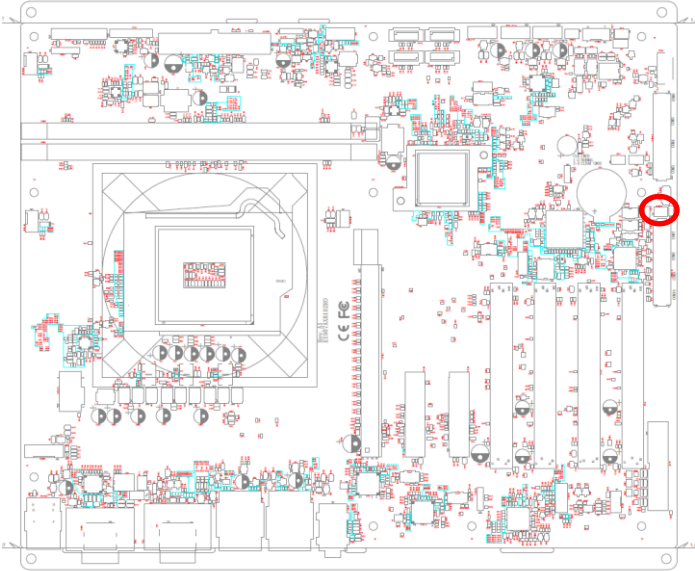
* Default

2.3.6 COM2 RS485/422 connector (JCOM2B)



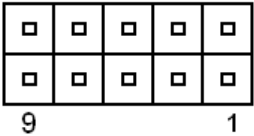
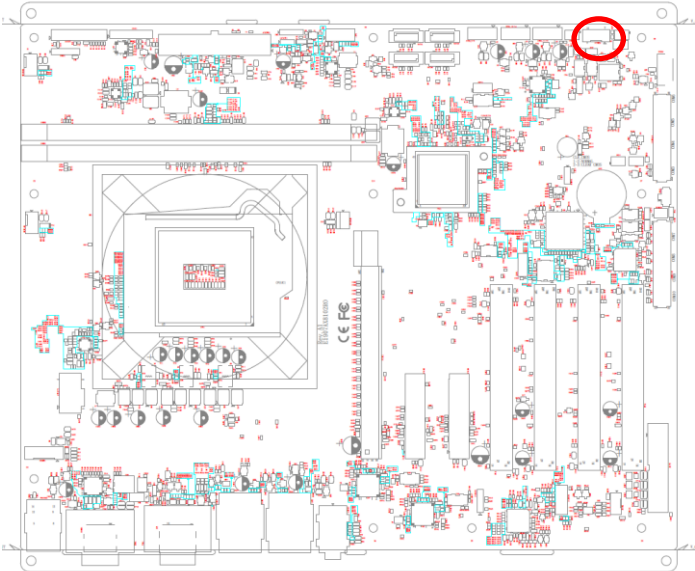
Signal	PIN	PIN	Signal
485TX-	1	2	422RX-
485TX+	3	4	422RX+
+5V	5	6	GND

2.3.7 COM2 RS485/422 connector (JCOM3B)



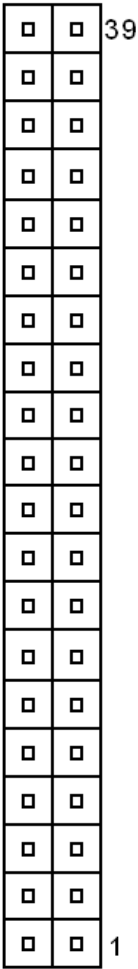
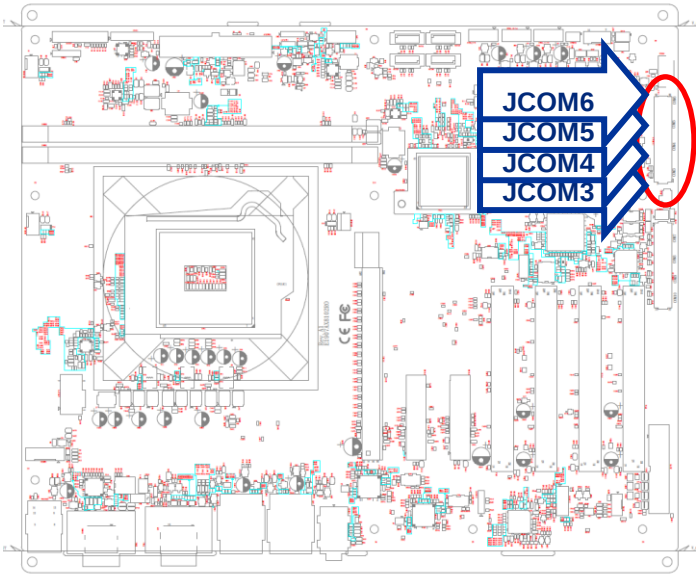
Signal	PIN	PIN	Signal
485TX-_C	1	2	422RX-_C
485TX+_C	3	4	422RX+_C
+5V	5	6	GND

2.3.8 Serial Port2 connector (JCOM2A)

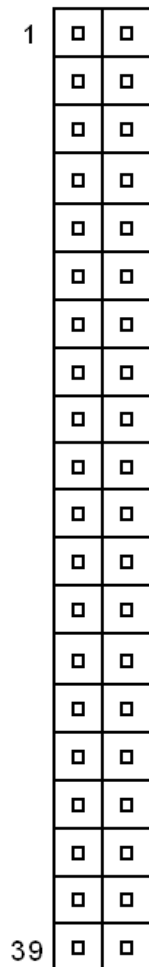


Signal	PIN	PIN	Signal
NRXDB	2	1	NDCDB#
NDTRB#	4	3	NTXDB
NDSRB#	6	5	GND
NCTSB#	8	7	NRTSB#
NC	10	9	JNRIB#

2.3.9 Serial port 3/4/5/6 connector (JCOM3-6)

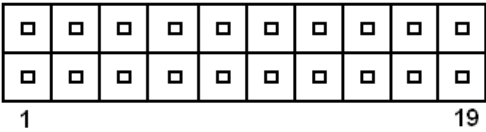
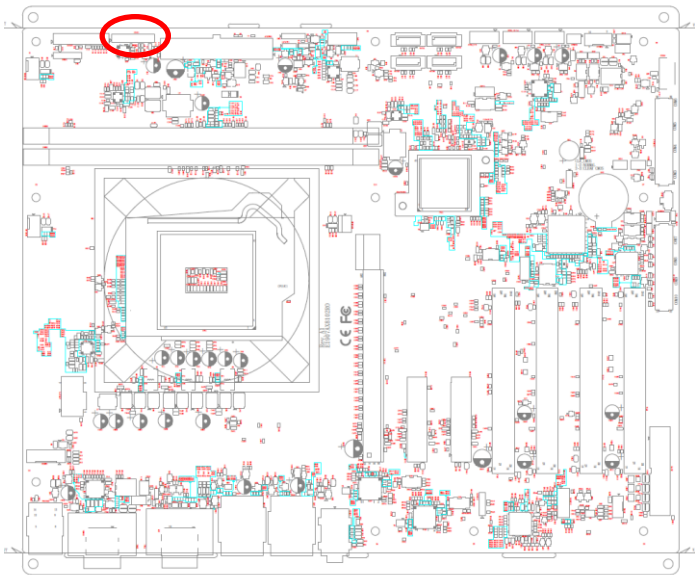


Signal	PIN	PIN	Signal
NC	40	39	NRIF#
NCTSF#	38	37	NRTSF#
NDSRF#	36	35	GND
NDTRF#	34	33	NTXDF
NRXDF	32	31	NDCDF#
NC	30	29	NRIE#
NCTSE#	28	27	NRTSE#
NDSRE#	26	25	GND
NDTRE#	24	23	NTXDE
NRXDE	22	21	NDCDE#
NC	20	19	NRID#
NCTSD#	18	17	NRTSD#
NDSRD#	16	15	GND
NDTRD#	14	13	NTXDD
NRXDD	12	11	NDCDD#
NC	10	9	JNRIC#
NCTSC#	8	7	NRTSC#
NDSRC#	6	5	GND
NDTRC#	4	3	NTXDC
NRXDC	2	1	NDCDC#



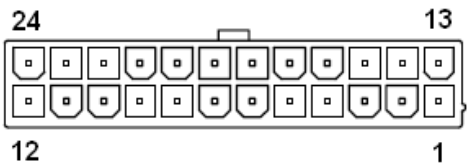
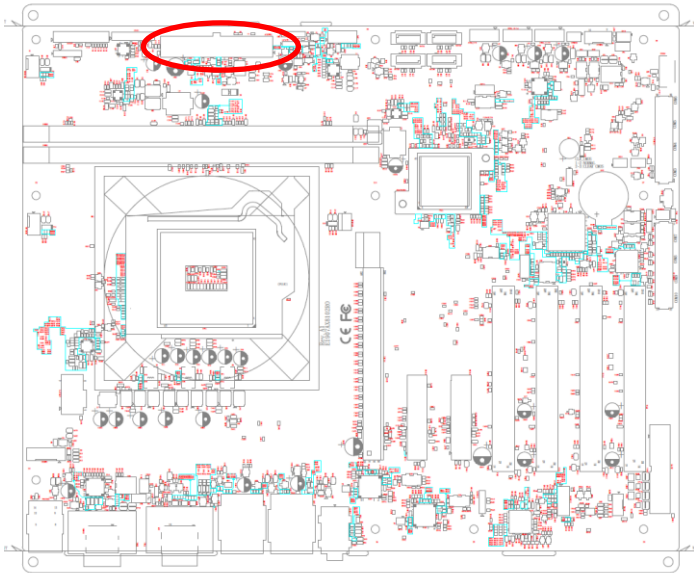
Signal	PIN	PIN	Signal
COM_DCD#_7	1	2	COM_RXD_7
COM_TXD_7	3	4	COM_DTR#_7
GND	5	6	COM_DSR#_7
COM_RTS#_7	7	8	COM_CTS#_7
COM_RI#_7	9	10	NC
COM_DCD#_8	11	12	COM_RXD_8
COM_TXD_8	13	14	COM_DTR#_8
GND	15	16	COM_DSR#_8
COM_RTS#_8	17	18	COM_CTS#_8
COM_RI#_8	19	20	NC
COM_DCD#_9	21	22	COM_RXD_9
COM_TXD_9	23	24	COM_DTR#_9
GND	25	26	COM_DSR#_9
COM_RTS#_9	27	28	COM_CTS#_9
COM_RI#_9	29	30	NC
COM_DCD#_10	31	32	COM_RXD_10
COM_TXD_10	33	34	COM_DTR#_10
GND	35	36	COM_DSR#_10
COM_RTS#_10	37	38	COM_CTS#_10
COM_RI#_10	39	40	NC

2.3.11 General purpose I/O connector (JDIO1)



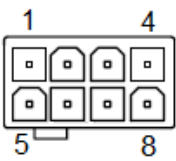
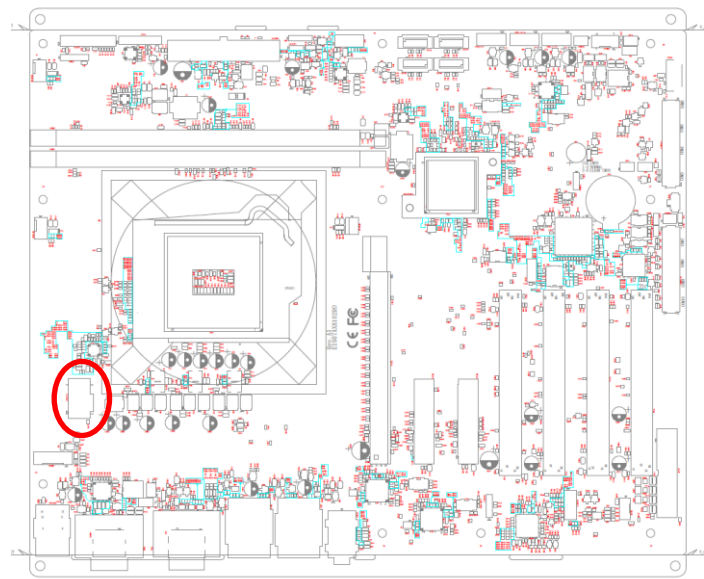
Signal	PIN	PIN	Signal
DI0	1	2	DO0
DI1	3	4	DO1
DI2	5	6	DO2
DI3	7	8	DO3
DI4	9	10	DO4
DI5	11	12	DO5
DI6	13	14	DO6
DI7	15	16	DO7
SMB_CLK_9555_R	17	18	SMB_DATA_9555_R
GND	19	20	+5V

2.3.12 ATX Power connector (ATXPWR1)



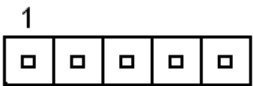
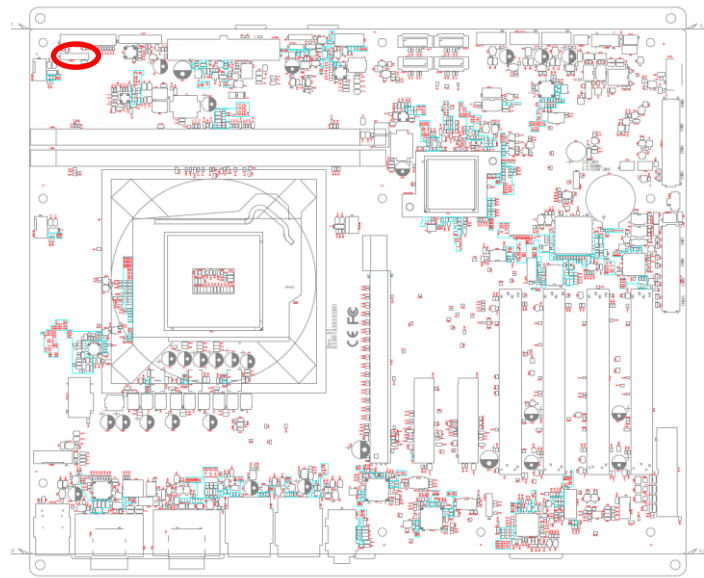
Signal	PIN	PIN	Signal
+3.3V	13	1	+3.3V
-12V	14	2	+3.3V
GND	15	3	GND
PSON#	16	4	+5V
GND	17	5	GND
GND	18	6	+5V
GND	19	7	GND
NC	20	8	PG_ATX
+5V	21	9	+5VSB
+5V	22	10	+12V
+5V	23	11	+12V
GND	24	12	+3.3V

2.3.13 Power connector (ATX12V1)



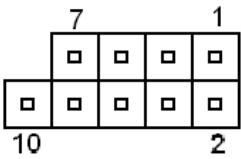
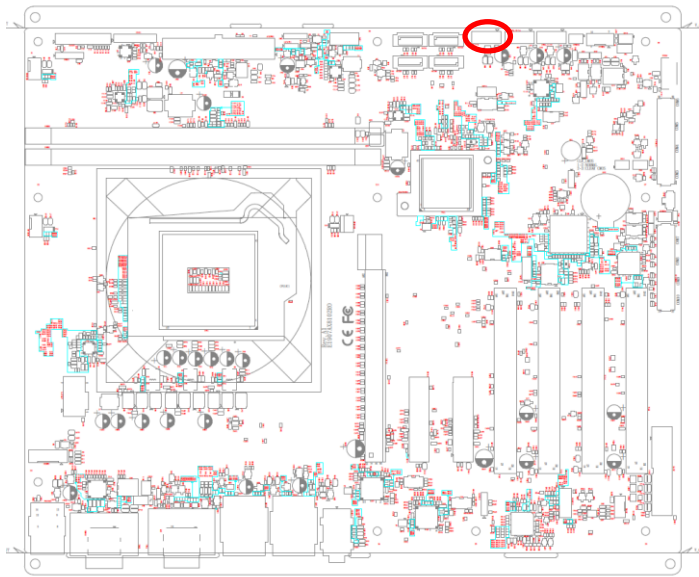
Signal	PIN	PIN	Signal
+12V	5	1	GND
+12V	6	2	GND
+12V	7	3	GND
+12V	8	4	GND

2.3.14 SMBus connector (JSMB1)



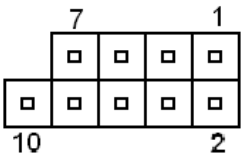
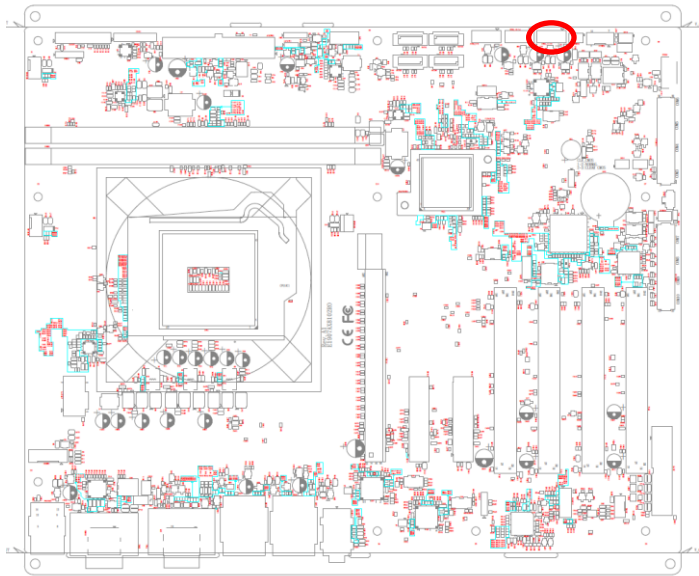
Signal	PIN
SMB_CLK_MAIN	1
SMB_DATA_MAIN	2
SMB_ALERT#_MAIN	3
GND	4
+3.3V	5

2.3.15 USB connector 7/8 (JUSB7/8)



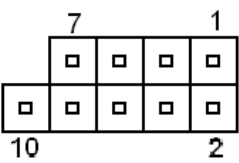
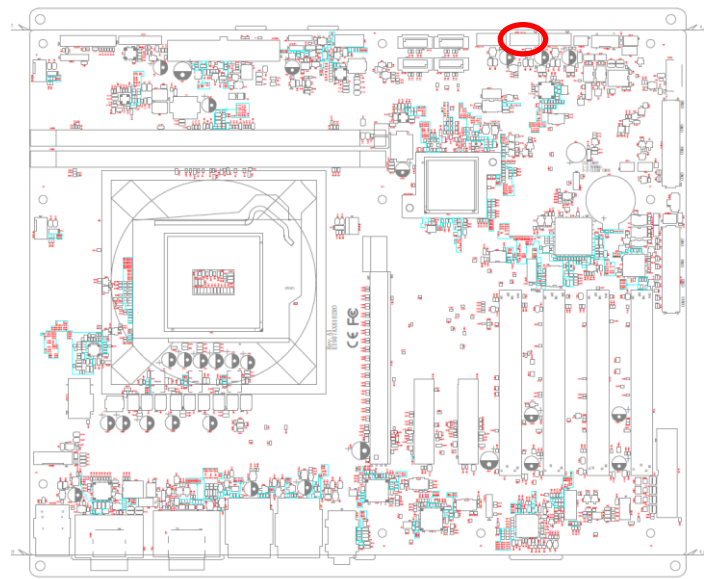
Signal	PIN	PIN	Signal
USBVCC_78	2	1	USBVCC_78A
USB_R_DN8	4	3	USB_R_DN7
USB_R_DP8	6	5	USB_R_DP7
GND	8	7	GND
NC	10		

2.3.16 USB connector 11/12 (JUSB11/12)



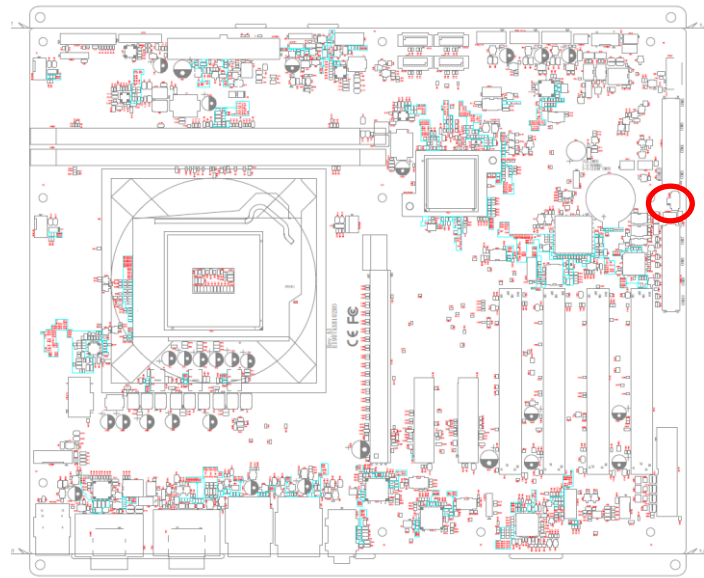
Signal	PIN	PIN	Signal
USBVCC_BC	2	1	USBVCC_BC
USB_R_DN12	4	3	USB_R_DN11
USB_R_DP12	6	5	USB_R_DP11
GND	8	7	GND
NC	10		

2.3.17 USB connector 13/14 (JUSB13/14)



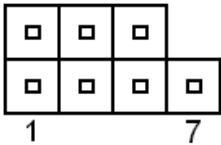
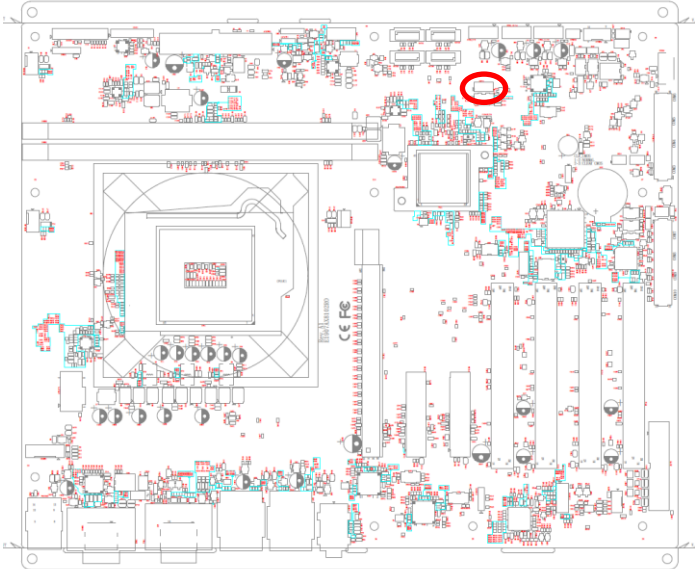
Signal	PIN	PIN	Signal
USBVCC_DE	2	1	USBVCC_DE
USB_R_DN14	4	3	USB_R_DN13
USB_R_DP14	6	5	USB_R_DP13
GND	8	7	GND
NC	10		

2.3.18 Battery connector (JBAT1)



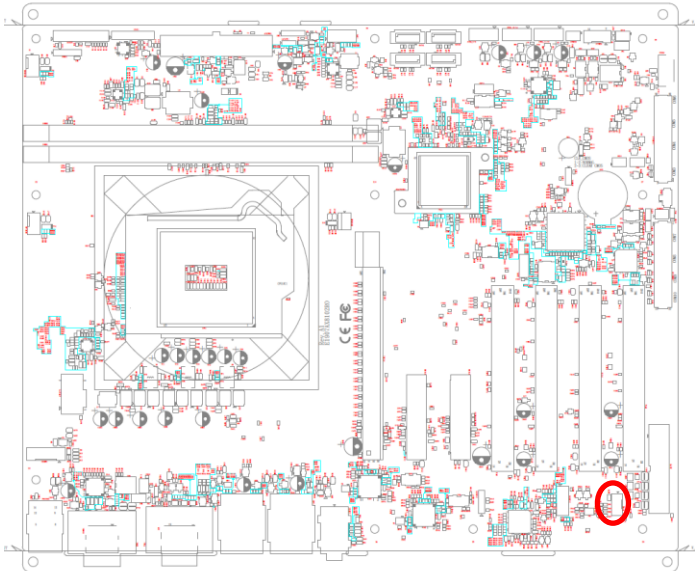
Signal	PIN
GND	2
+3.3V	1

2.3.19 SPI connector (JSPI1)



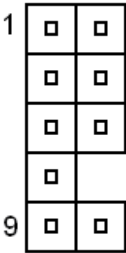
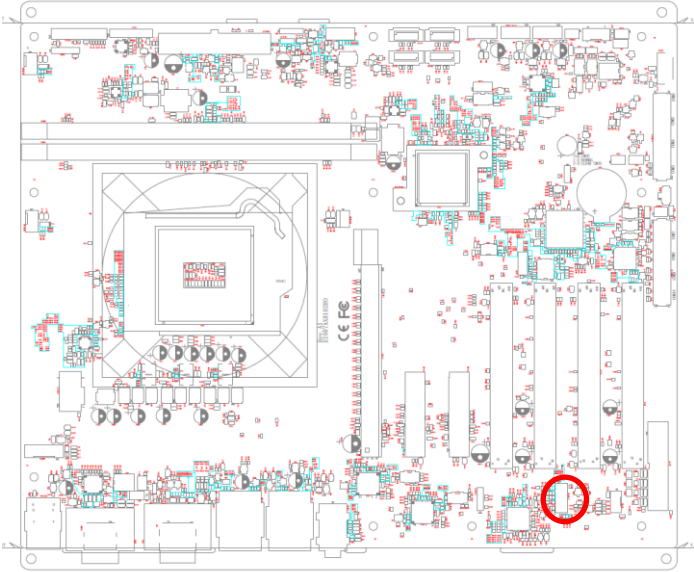
Signal	PIN	PIN	Signal
+3.3V	1	2	GND
SPI_CS0#0	3	4	SPI_CLK_R
SPI_MISO_R	5	6	SPI_MOSI_R
SPI_HOLD#	7		

2.3.20 Speaker connector (JSPK1)



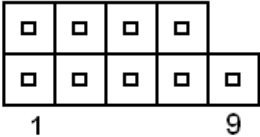
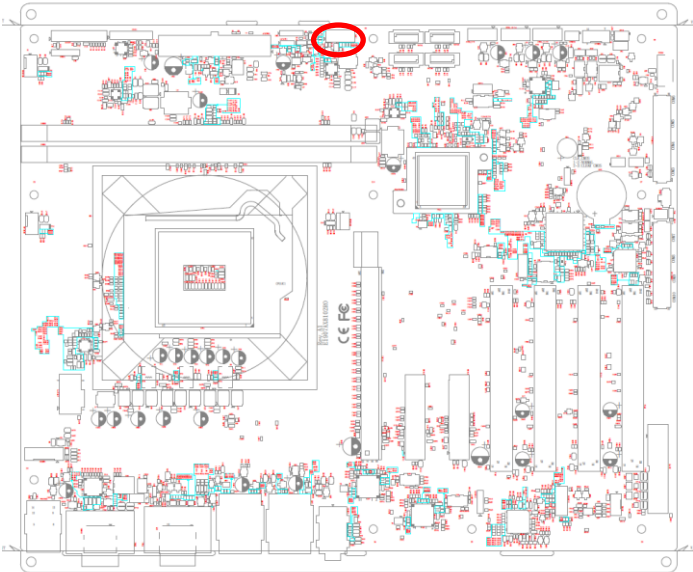
Signal	PIN
LSPK+	1
LSPK-	2
RSPK+	3
RSPK -	4

2.3.21 Audio connector (JAUDIO1)



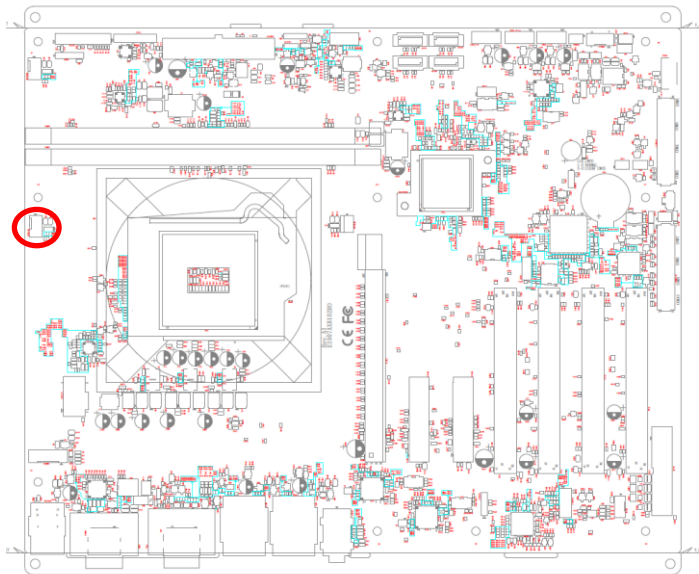
Signal	PIN	PIN	Signal
MIC2_L	1	2	GND
MIC2_R	3	4	ACZ_DET#_R
LINE2_RIN	5	6	MIC2_JD
GND	7		
LINE2_LIN	9	10	LINE_JD

2.3.22 Miscellaneous setting connector (JFP1)



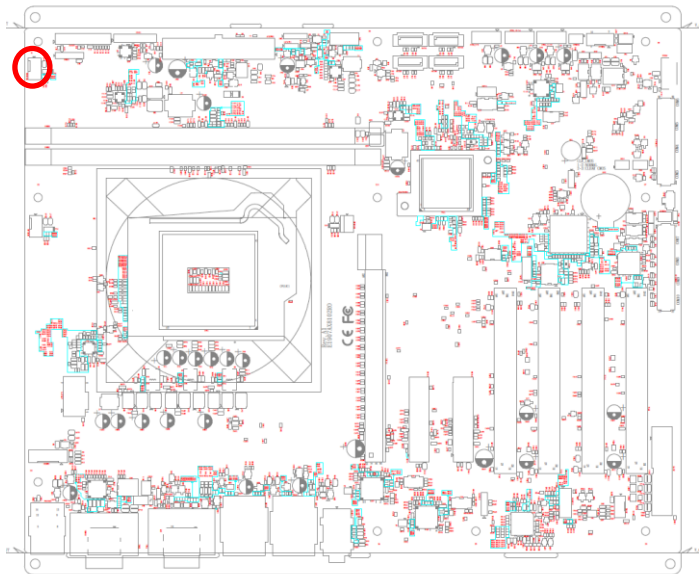
Signal	PIN	PIN	Signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
RSET_BTN#	5	6	PWRBTN#
GND	7	8	GND
NC	9		

2.3.23 CPU fan connector (CPUFAN1)



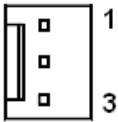
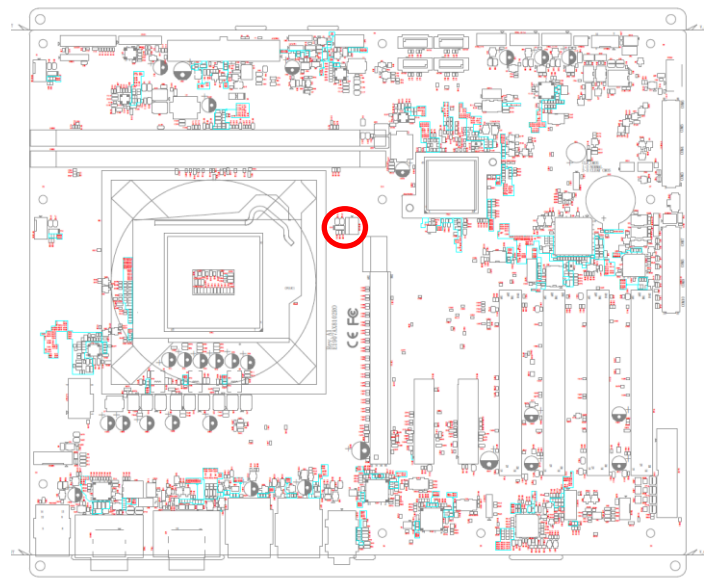
Signal	PIN
GND	1
+12V	2
CPUFANIN	3
CPUFANOUT	4

2.3.24 System fan connector 1 (SYSFAN1)



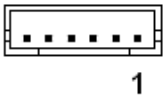
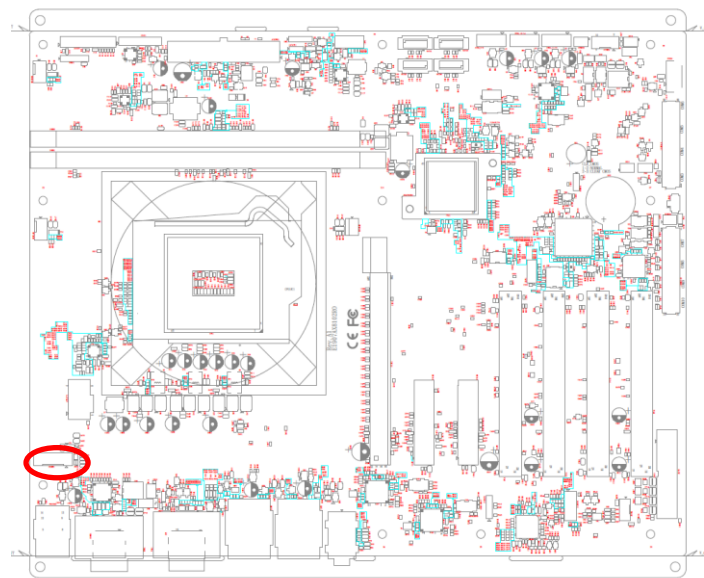
Signal	PIN
GND	1
+12V	2
SYSFANIN	3
SYSFANOUT1	4

2.3.25 System fan connector 2 (SYSFAN2)



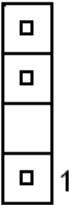
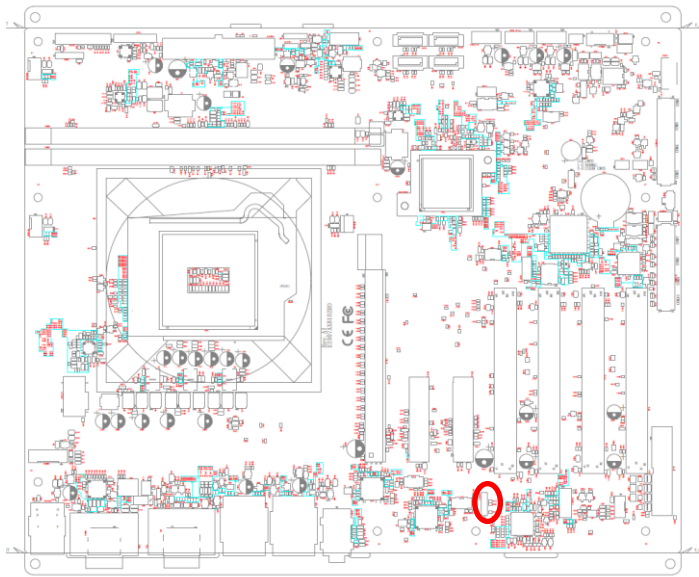
Signal	PIN
GND	1
+12V	2
SYS_FAN_IN_2	3

2.3.26 PS/2 keyboard & mouse connector (JKBMS1)



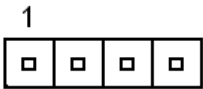
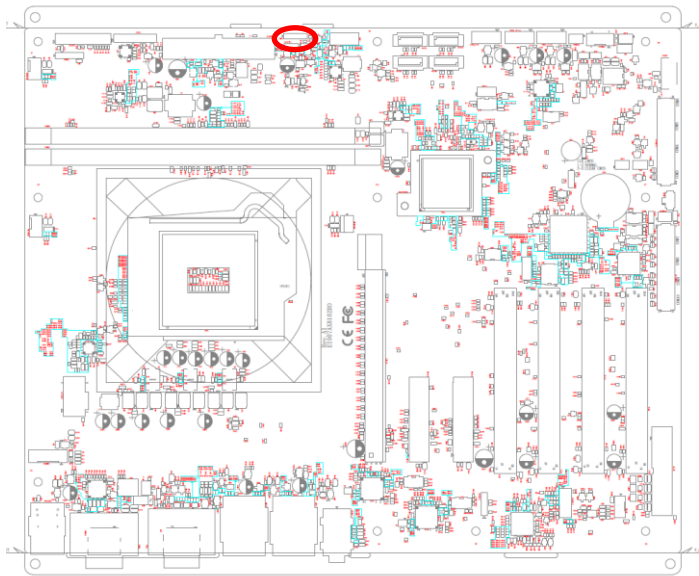
Signal	PIN
KBCK	1
KBDT	2
MSDT	3
GND	4
+5V_KBMS	5
MSCK	6

2.3.27 S/PDIF connector (JSPDIF1)



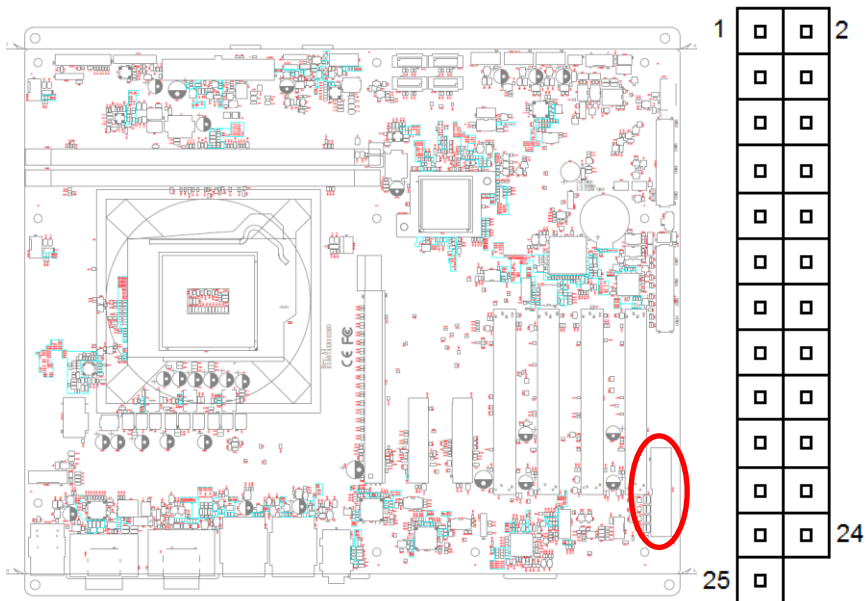
Signal	PIN
GND	4
SPDIF_O	3
+5V	1

2.3.28 External Speaker connector (JBZ1)



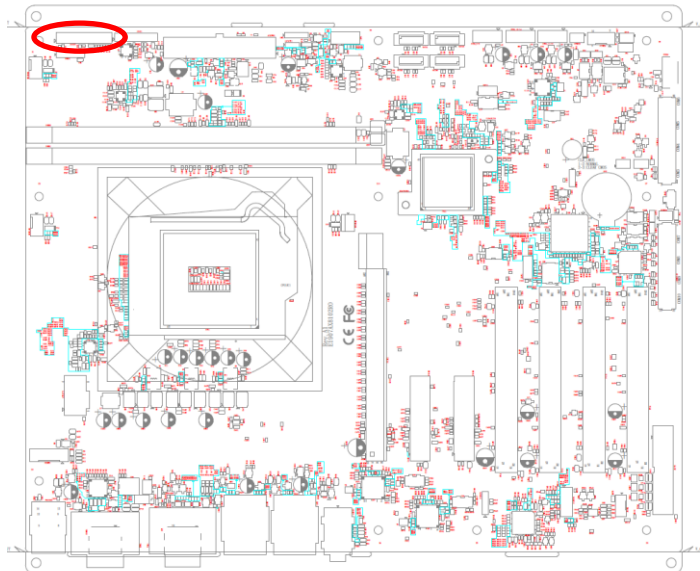
Signal	PIN
+5V	1
NC	2
NC	3
HDA_SPKR	4

2.3.29 LPT connector (JLPT1)



Signal	PIN	PIN	Signal
PT_STB-	1	2	PT_AFD#
PTD0	3	4	ERR#
PTD1	5	6	PT_PAR_INIT#
PTD2	7	8	PT_SLIN#
PTD3	9	10	GND
PTD4	11	12	GND
PTD5	13	14	GND
PTD6	15	16	GND
PTD7	17	18	GND
ACK#	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25		

2.3.30 Auxiliary Panel connector (JAUXP1)



□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
1									19

Signal	PIN	PIN	Signal
+5V	1	2	NC
NC	3	4	SMB_CLK_MAIN
CASEOPEN#	5	6	NC
GND	7	8	GND
ERROR_LED	9	10	SMB_DATA_MAIN
ERROR_LED#	11	12	+5V
FRONT_LAN1_ACT	13	14	FRONT_LAN1_LINK100#
GND	15	16	FRONT_LAN1_LINK1000#
FRONT_LAN2_ACT	17	18	FRONT_LAN2_LINK100#
GND	19	20	FRONT_LAN2_LINK1000#

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 or <F2> immediately after switching the system on, or

By pressing the or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

Press 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.

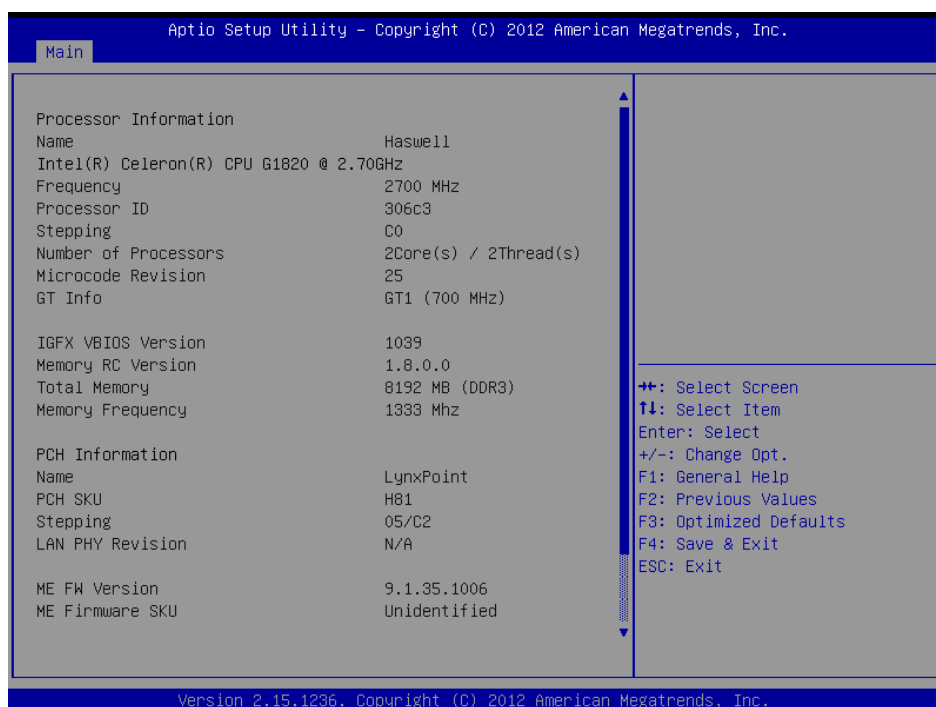
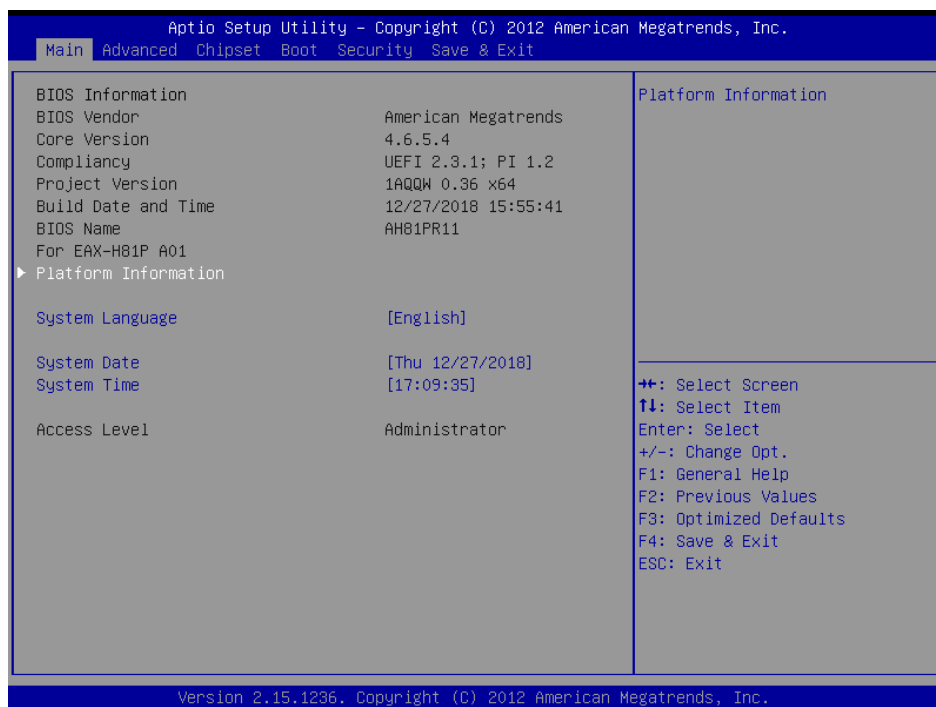
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance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

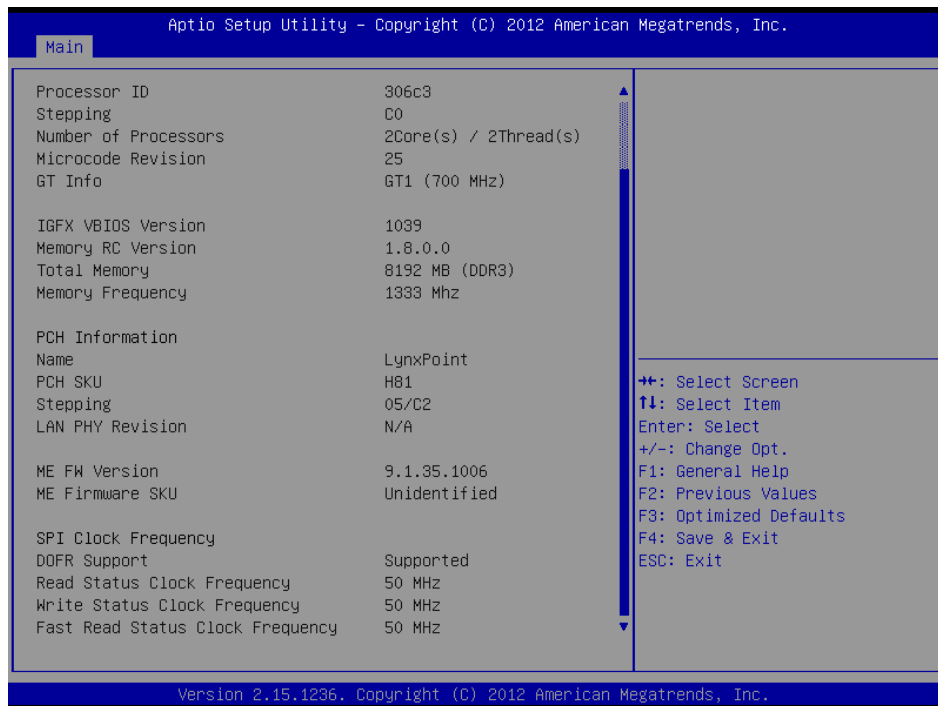
3.6 BIOS setup

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.

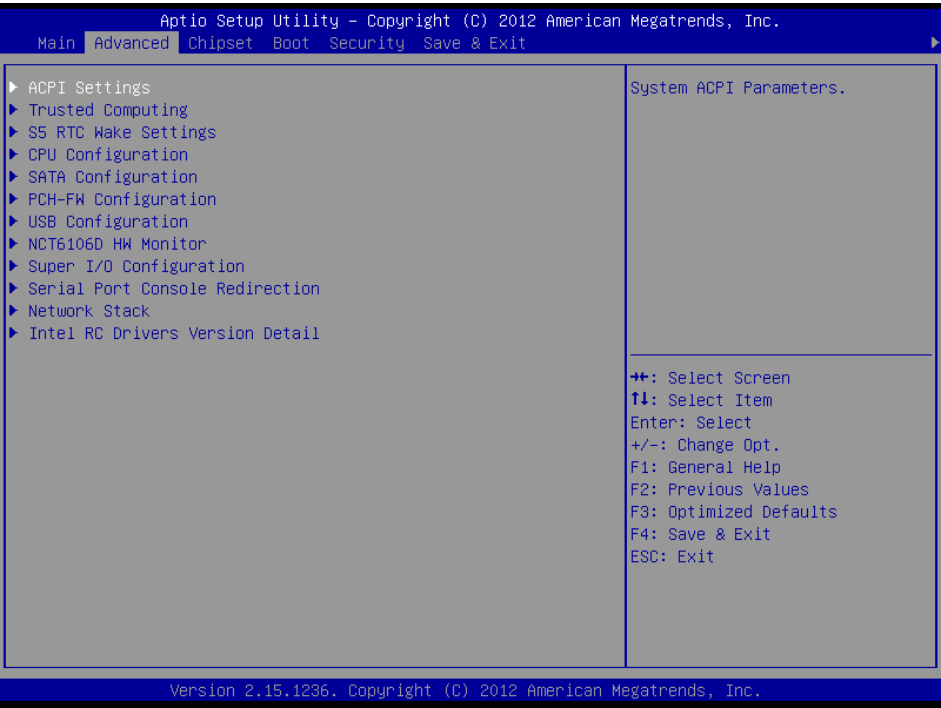


Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

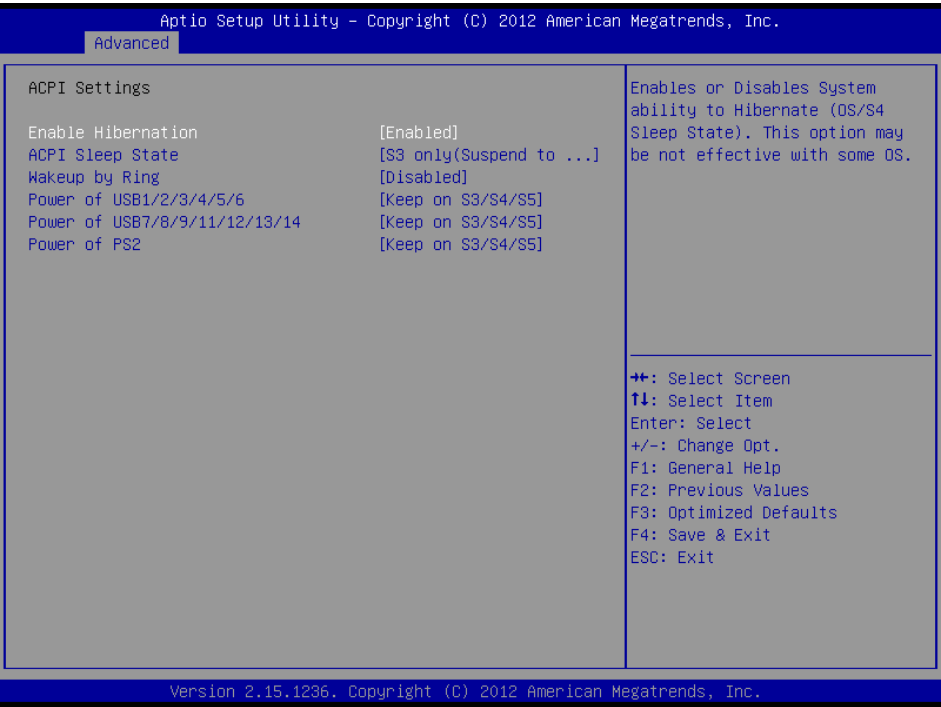
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

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 ACPI Settings

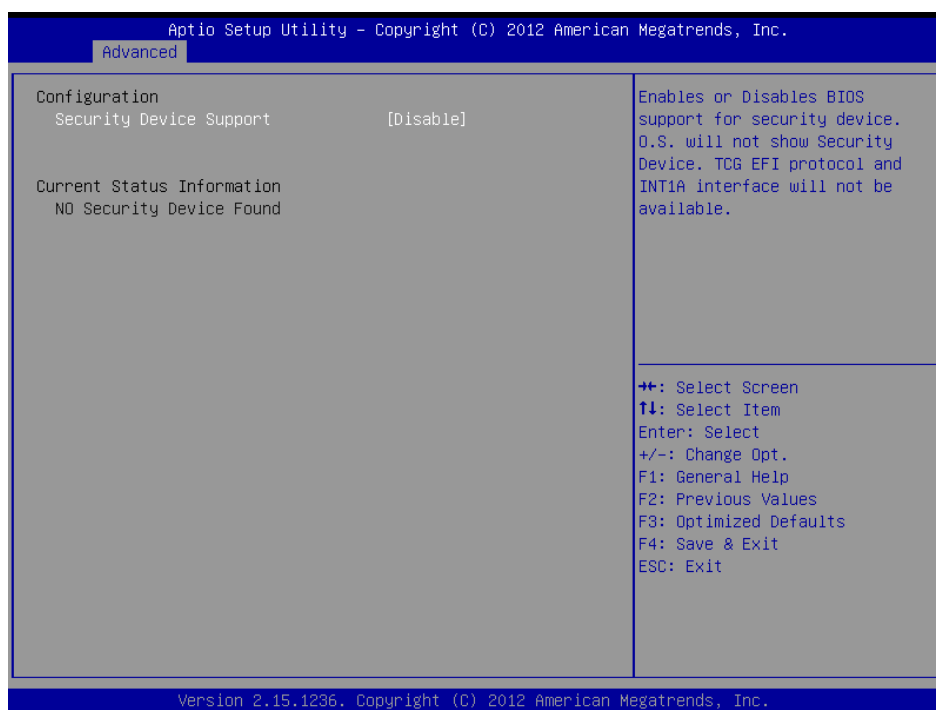


Item	Options	Description
Enable Hibernation	Disabled Enabled[Default],	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This

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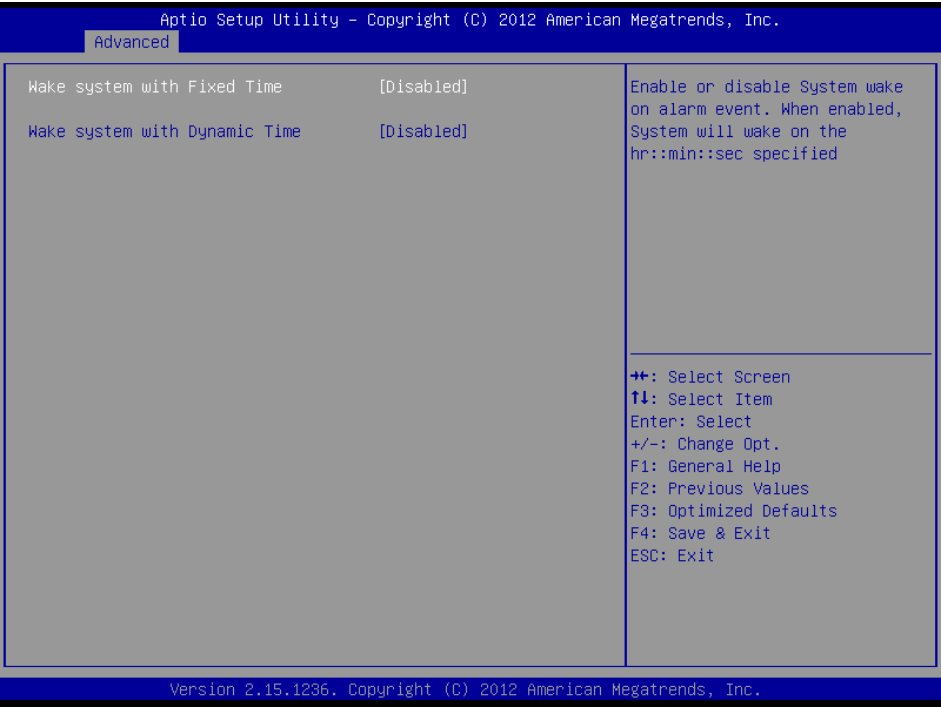
		option may not be effective with some OS
ACPI Sleep State	Suspend Disabled, S3 only(Suspend to RAM)[Default]	Select ACPI sleep state the system will enter when the SUSPEND button is pressed.
Wakeup by Ring	Disabled[Default], Enabled	Wakeup by Ring from S1~S5
Power of USB1/2/3/4/5/6	Disabled on S3/S4/S5 Keep on S3/S4/S5[Default],	Control stand-by power of USB1/2(LAN1),USB3/4(LAN2),USB5/6(PS2USB1) power on S3/S4/S5
Power of USB7/8/9/11/12/13/14	Disabled on S3/S4/S5 Keep on S3/S4/S5[Default],	Control stand-by power of JUSB7/8,JUSB9,JUSB11/12/13/14 power on S3/S4/S5
Power of PS2	Disabled on S3/S4/S5 Keep on S3/S4/S5[Default],	Control stand-by power of PS2 Connector S3/S4/S5

3.6.2.2 Trusted Computing

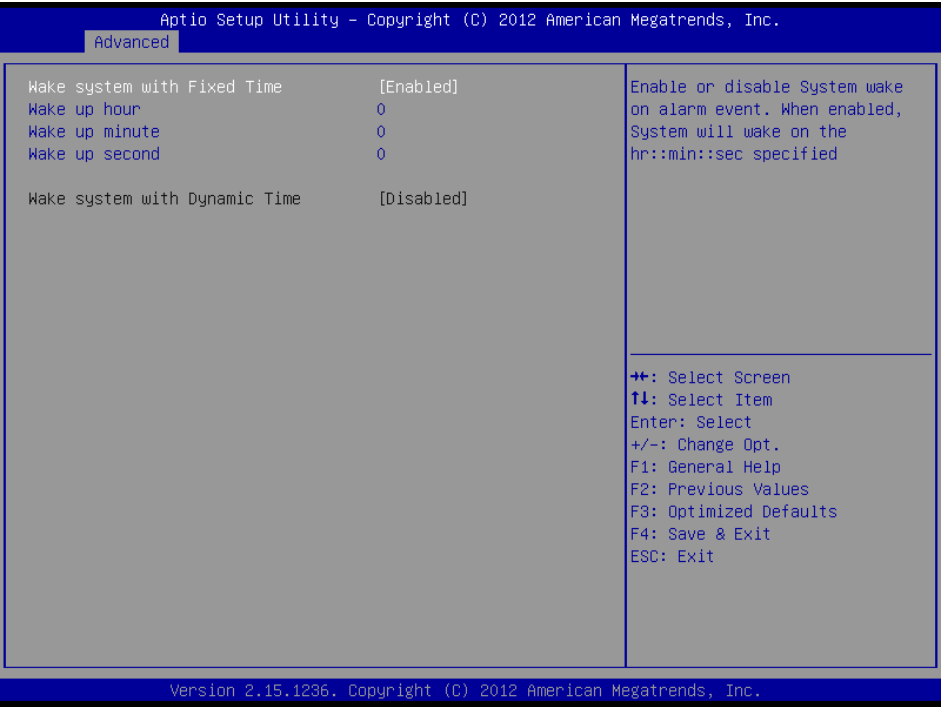


Item	Options	Description
Security Device Support	Disabled[Default], Enabled	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

3.6.2.3 S5 RTC Wake Settings



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



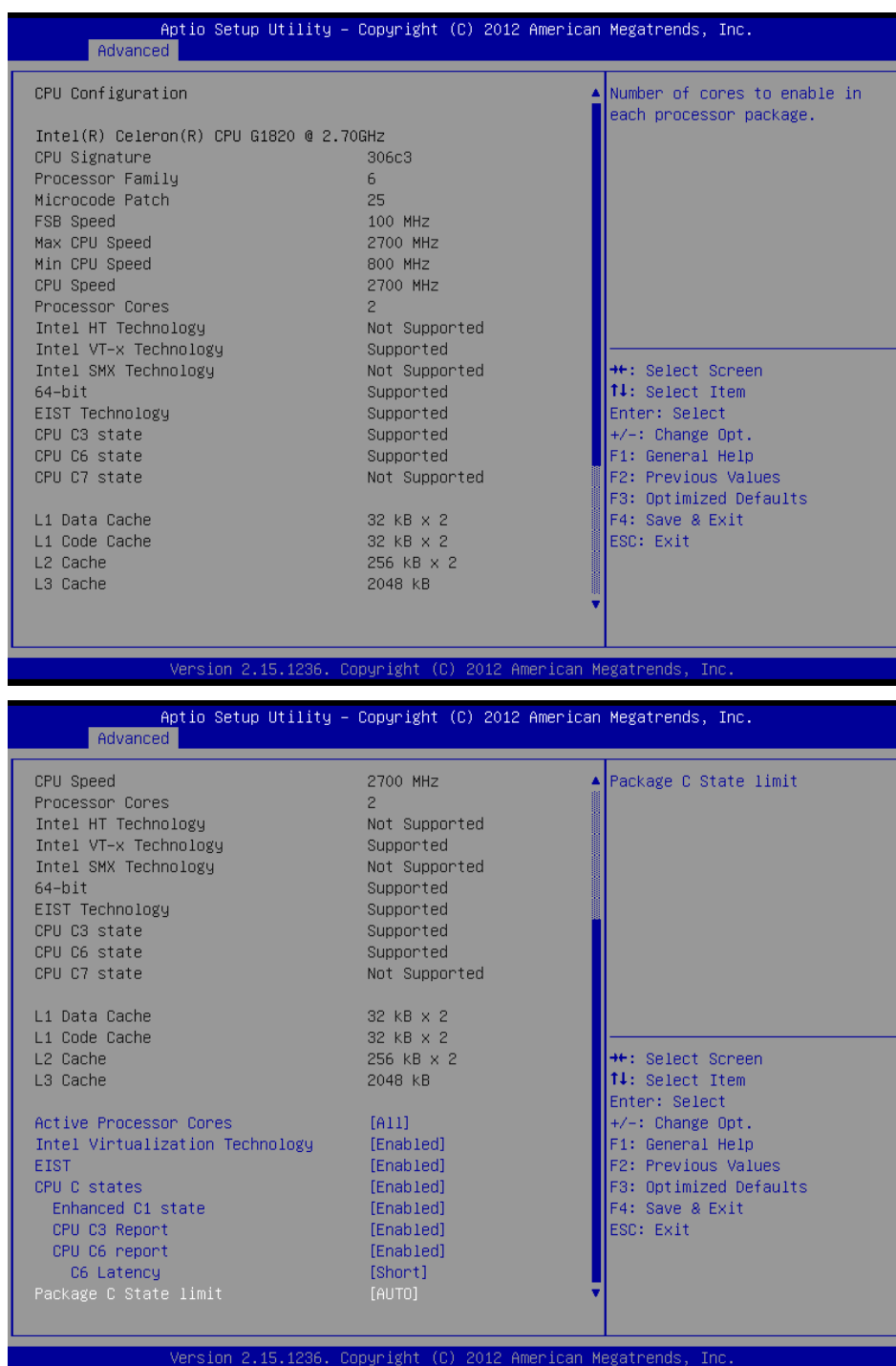
EAX-H81P User's Manual

Item	Options	Description
Wake system with Fixed Time	Disabled[Default], Enabled	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified
Wake up hour	0	Select 0-23 For example enter 3 for 3am and 15 for 3pm.
Wake up minute	0	0-59.
Wake up second	0	0-59.



Item	Options	Description
Wake system with Dynamic Time	Disabled Enabled[Default],	Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s)
Wake up minute increase	1	1-5

3.6.2.4 CPU Configuration

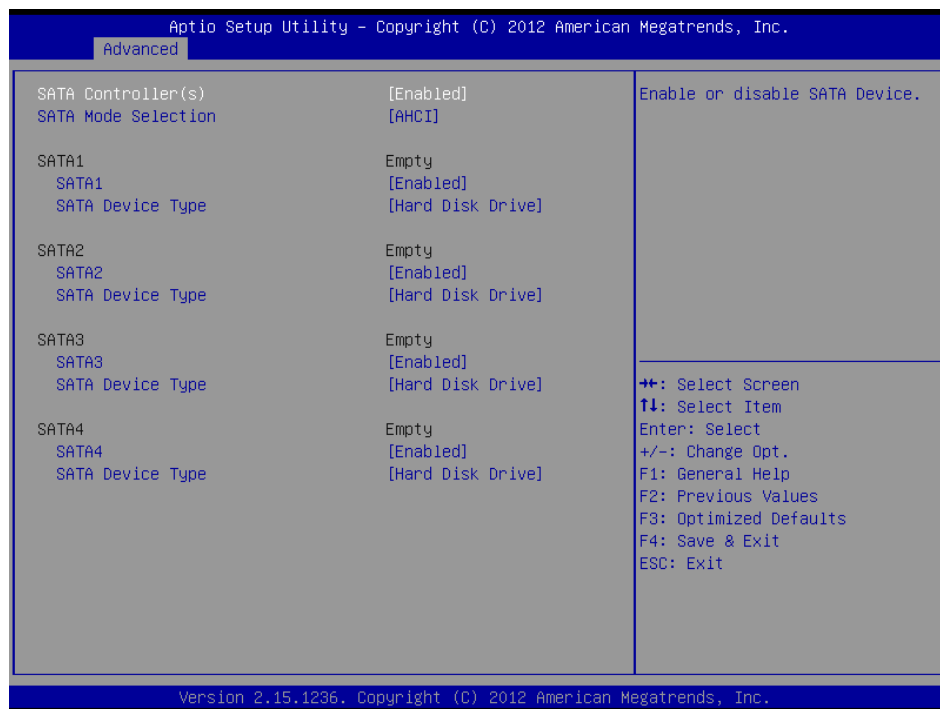


Item	Options	Description
Active Processor Cores	All[Default],	Number of cores to enable in each processor package.
	1	
	2	
	3	
Intel Virtualization Technology	Disabled Enabled[Default],	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

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EIST	Disabled Enabled[Default],	Enable/Disable Intel SpeedStep
CPU C states	Disabled Enabled[Default],	Enable or disable CPU C states
Enhanced C1 state	Disabled Enabled[Default],	Enhanced C1 state
CPU C3 Report	Disabled Enabled[Default],	Enable/Disable CPU C3 report to OS
CPU C6 Report	Disabled Enabled[Default],	Enable/Disable CPU C6 report to OS
C6 Latency	Short[Default], Long	Configure Short/Long latency for C6
Package C State limit	C0/C1 C2 C3 C6 C7 C7s AUTO	Package C State limit

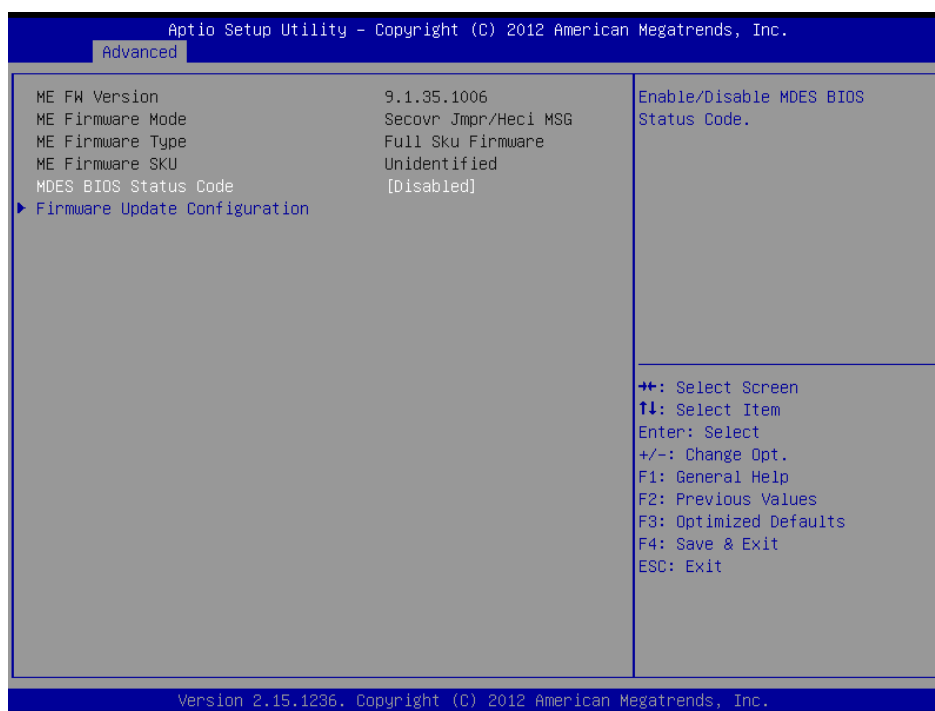
3.6.2.5 SATA Configuration



Item	Options	Description
SATA Configuration(S)	Enabled[Default], Disabled	Enable or disable SATA Device.
SATA Mode Selection	IDE AHCI[Default],	Determines how SATA controller(s) operate.
SATA1	Disabled Enabled[Default],	Enable or Disable SATA Port

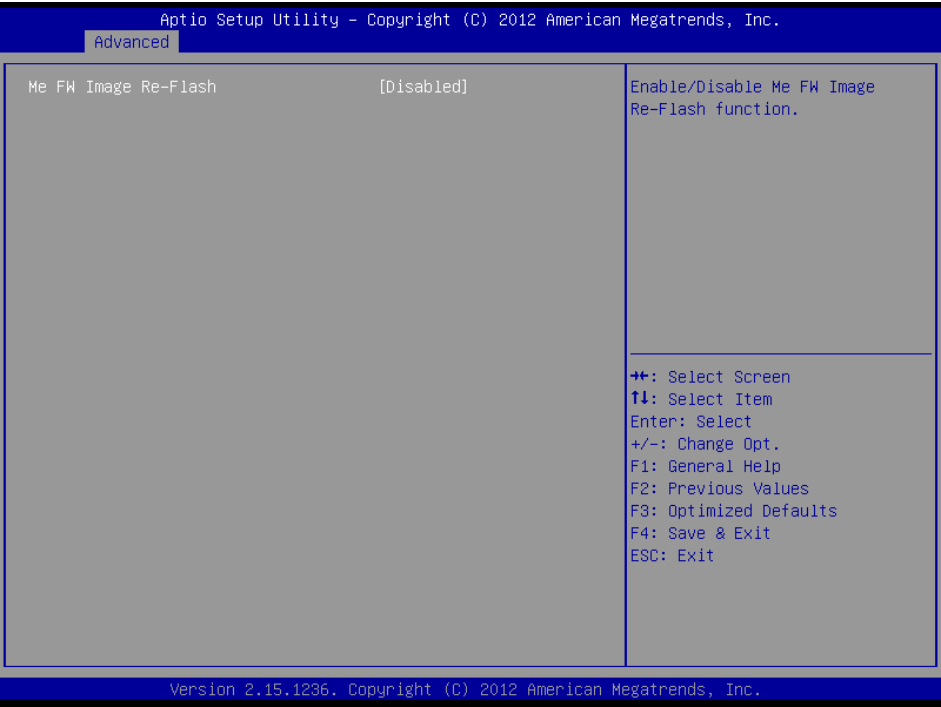
SATA Device Type	Hard Disk Drive[Default], Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.
SATA2	Disabled Enabled[Default],	Enable or Disable SATA Port
SATA Device Type	Hard Disk Drive[Default], Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.
SATA3	Disabled Enabled[Default],	Enable or Disable SATA Port
SATA Device Type	Hard Disk Drive[Default], Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.
SATA4	Disabled Enabled[Default],	Enable or Disable SATA Port
SATA Device Type	Hard Disk Drive[Default], Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

3.6.2.6 PCH-FW Configuration



Item	Options	Description
MDES BIOS Status Code	Disabled, Enabled[Default]	Enable/ Disable MDES BIOS Status Code.

3.6.2.6.1 Firmware Update Configuration



Item	Option	Description
Me FW Image Re-Flash	Disabled[Default], Enabled	Enable/Disable Me FW Image Re-Flash function.

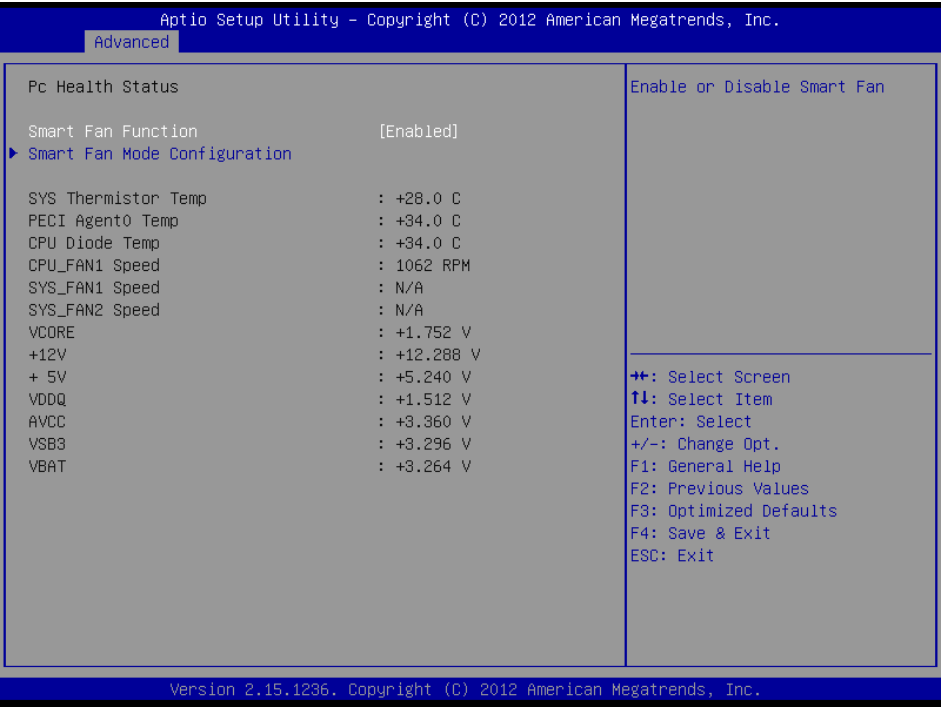
3.6.2.7 USB Configuration

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



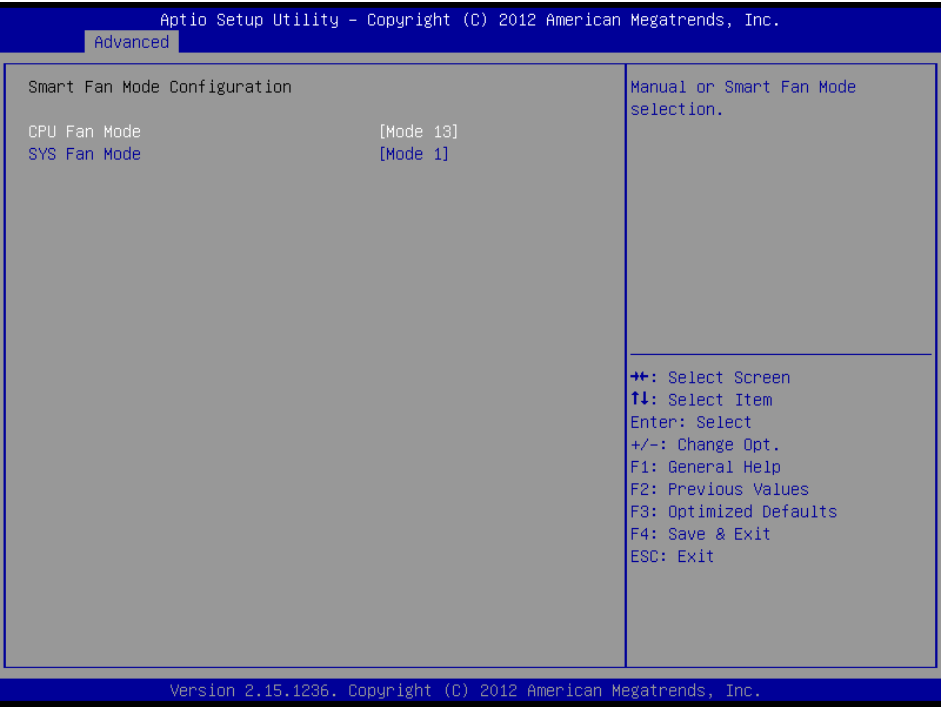
Item	Options	Description
Legacy USB Support	Enabled[Default], Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
USB3.0 Support	Enabled[Default], Disabled	Enable/Disable USB3.0 (XHCI) Controller support.
XHCI Hand-off	Enabled[Default], Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
EHCI Hand-off	Disabled Enabled[Default],	This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Disabled Enabled[Default],	Enable/Disable USB Mass Storage Driver 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 from Hub descriptor.
Mass Storage Devices	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.

3.6.2.8 NCT6106D H/W Monitor



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

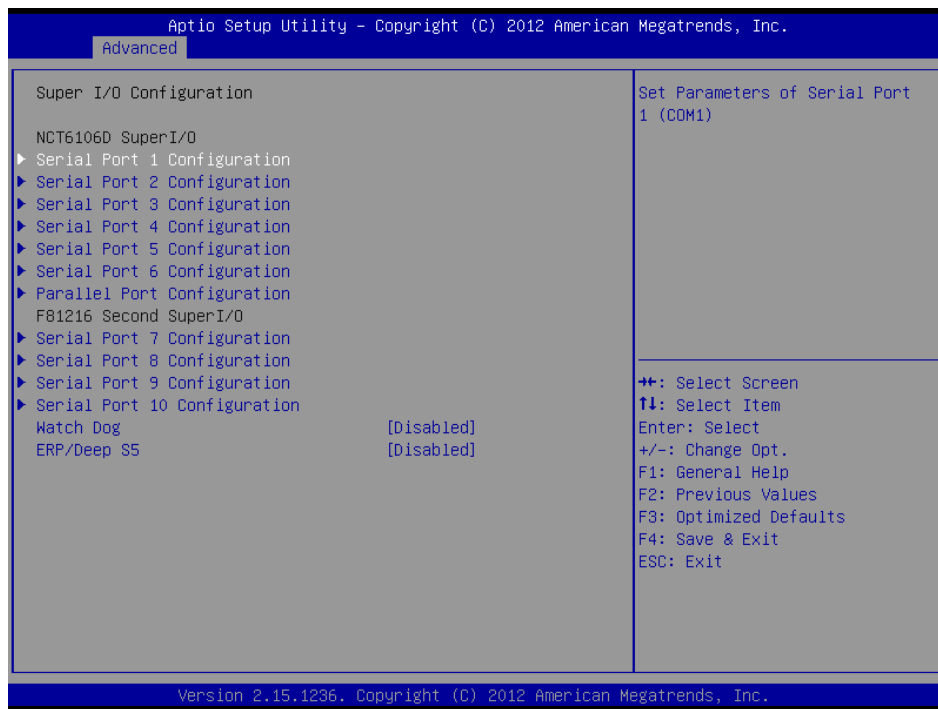
3.6.2.8.1 Smart Fan Mode Configuration



Item	Option	Description
CPU Fan Mode	Manual Mode Mode 1 Mode 2 Mode 3 Mode 4 Mode 5 Mode 6 Mode 7 Mode 8 Mode 9 Mode 10 Mode 11 Mode 12 Mode 13[Default], Mode 14 Mode 15 Mode 16 Mode 17 Mode 18 Mode 19 Mode 20	Manual or Smart Fan Mode selection.
SYS FAN Mode	Manual Mode Mode 1[Default], Mode 2 Mode 3 Mode 4 Mode 5 Mode 6 Mode 7 Mode 8 Mode 9 Mode 10 Mode 11 Mode 12 Mode 13 Mode 14 Mode 15 Mode 16 Mode 17 Mode 18 Mode 19 Mode 20	Manual or Smart Fan Mode selection.

3.6.2.9 Super IO Configuration

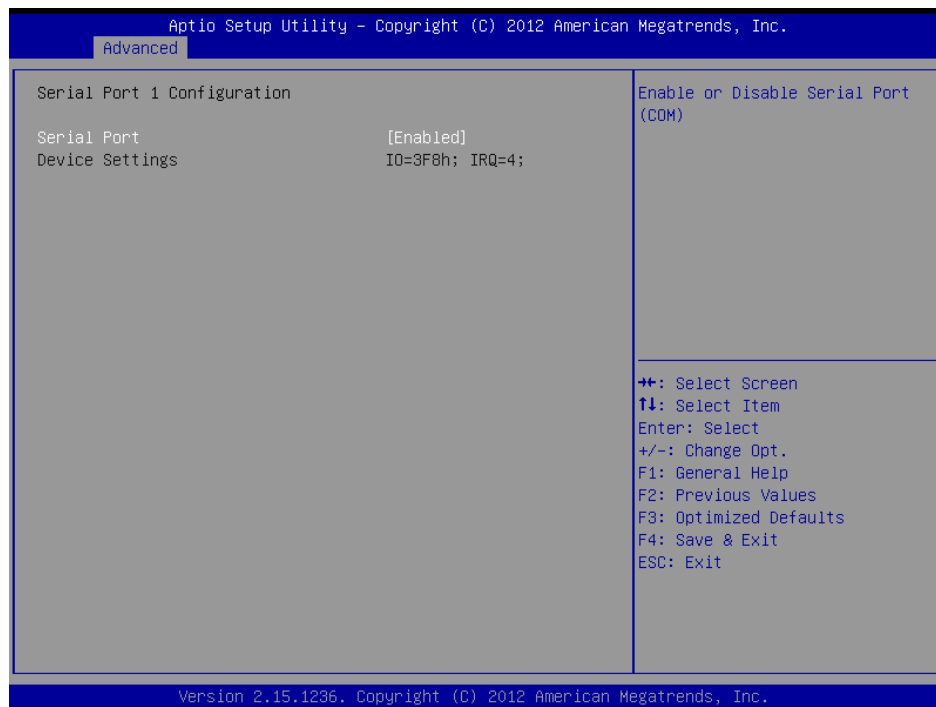
You can use this item to set up or change the Super IO configuration for serial ports. Please refer to 3.6.2.6.1~ 3.6.2.6.7 for more information.



Item	Option	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COM1).	
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COM2).	
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COM3).	
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COM4).	
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COM5).	
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COM6).	
Parallel Port Configuration	Set Parameters of Parallel Port (LPT/LPTE).	
Serial Port 7 Configuration	Set Parameters of Serial Port 7 (COM7).	
Serial Port 8 Configuration	Set Parameters of Serial Port 8 (COM8).	
Serial Port 9 Configuration	Set Parameters of Serial Port 9 (COM9).	
Serial Port 10 Configuration	Set Parameters of Serial Port 10 (COM10).	

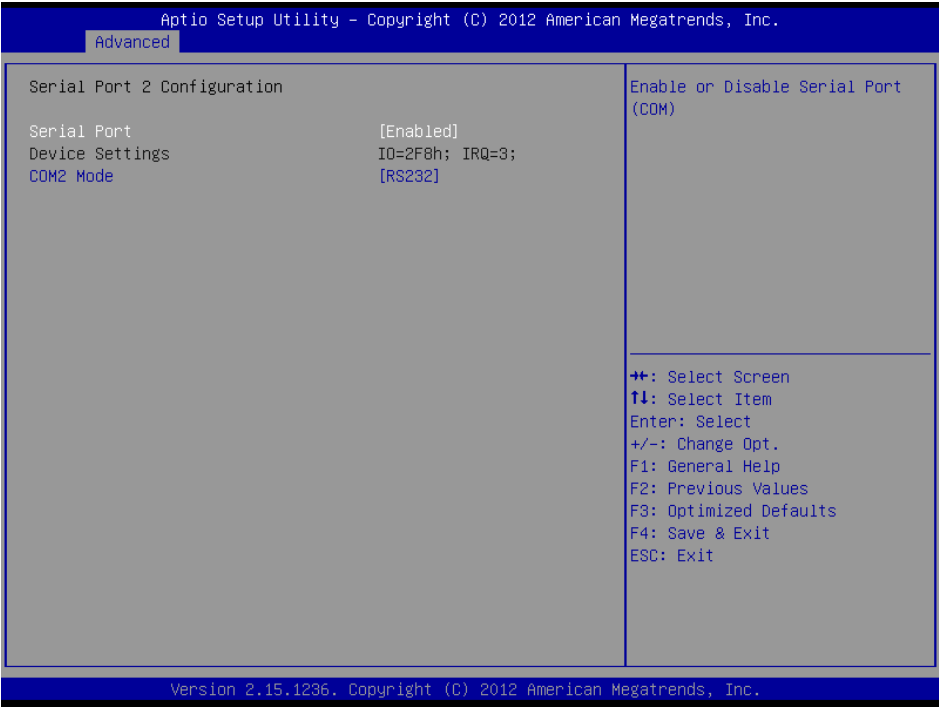
Watch Dog	Disabled [Default] , 30 Sec 40 Sec 50 Sec 60 Sec 2 Min 10 Min 30 Min	Set SIO watch dog timer.
ERP/Deep S5	Disabled [Default] , Enabled	Deep S5 for power saving

3.6.2.9.1 Serial Port 1 Configuration



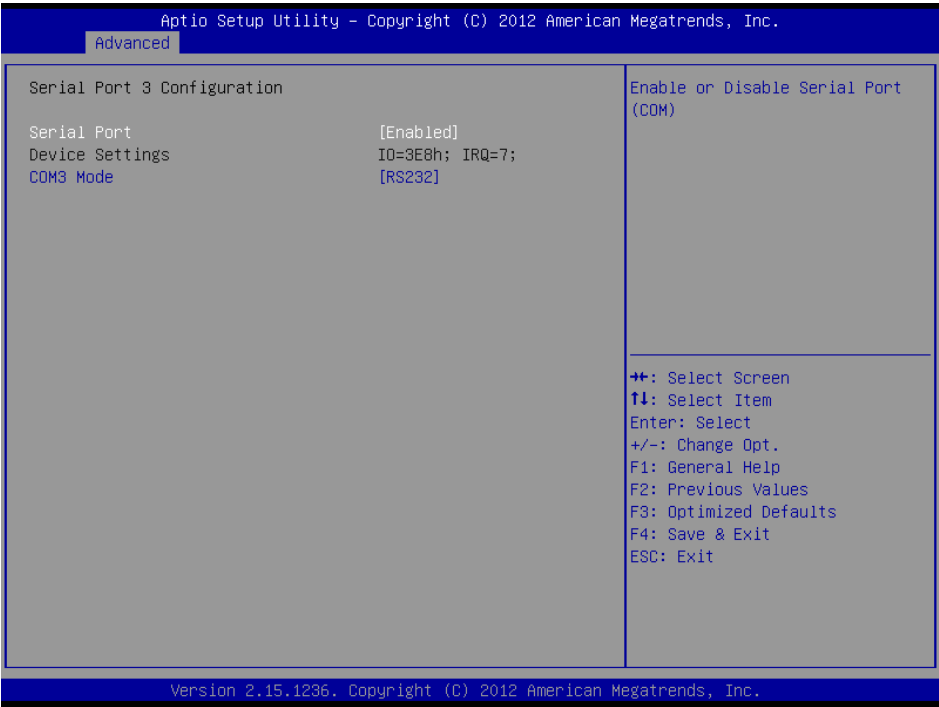
Item	Option	Description
Serial Port	Disabled, Enabled [Default]	Enable or Disable Serial Port (COM).

3.6.2.9.2 Serial Port 2 Configuration



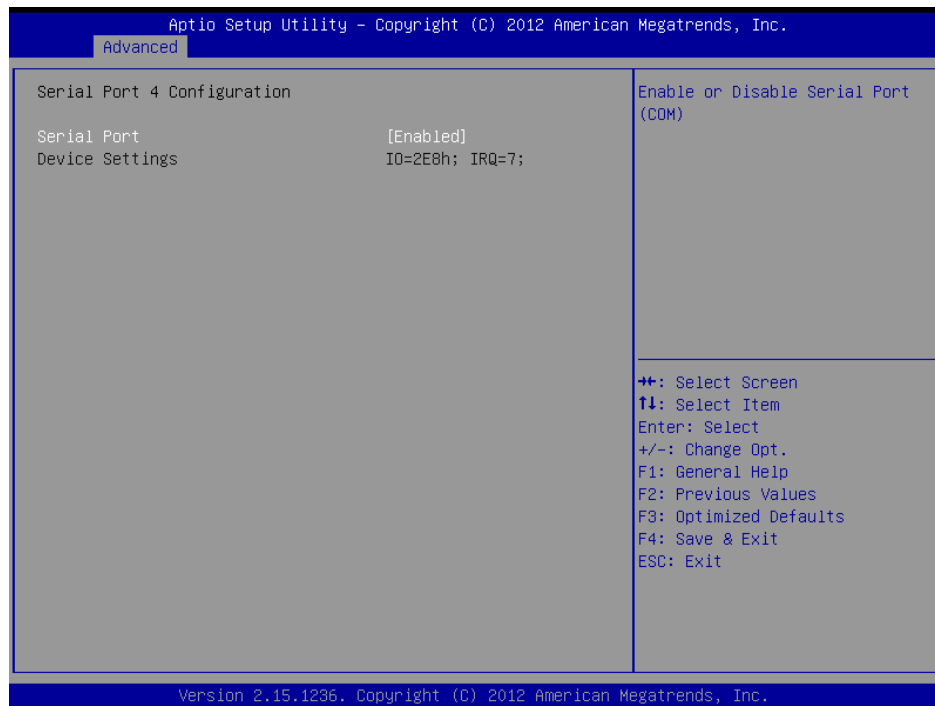
Item	Option	Description
Serial Port	Disabled, Enabled [Default]	Enable or Disable Serial Port (COM).
COM2 Mode	RS232 [Default] RS422 RS485	COM Mode RS232/RS422/RS485

3.6.2.9.3 Serial Port 3 Configuration



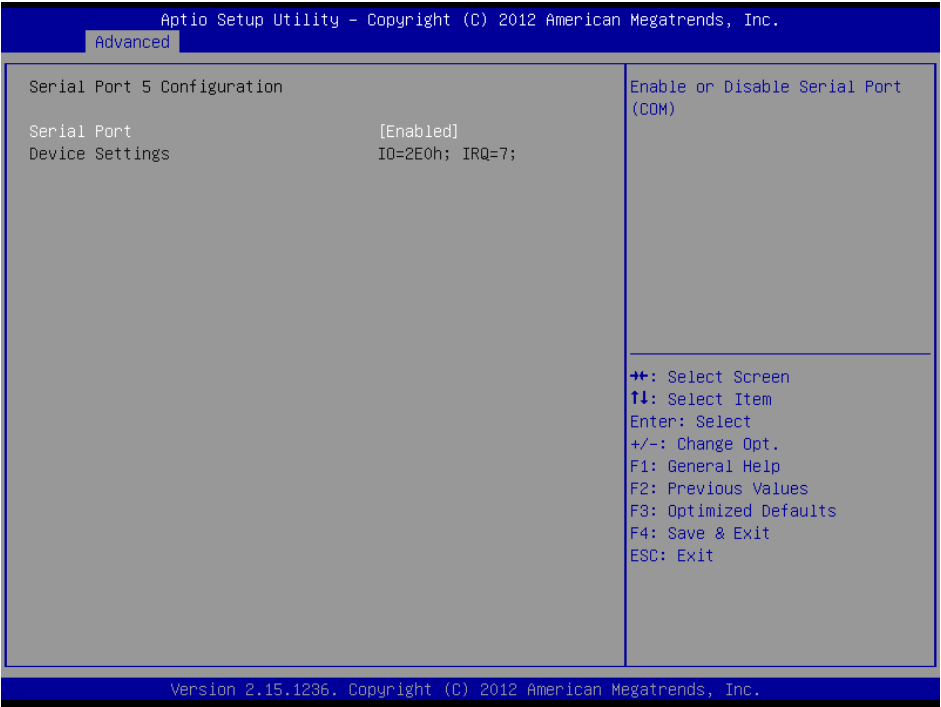
Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).
COM3 Mode	RS232[Default] RS422 RS485	COM Mode RS232/RS422/RS485

3.6.2.9.4 Serial Port 4 Configuration



Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).

3.6.2.9.5 Serial Port 5 Configuration



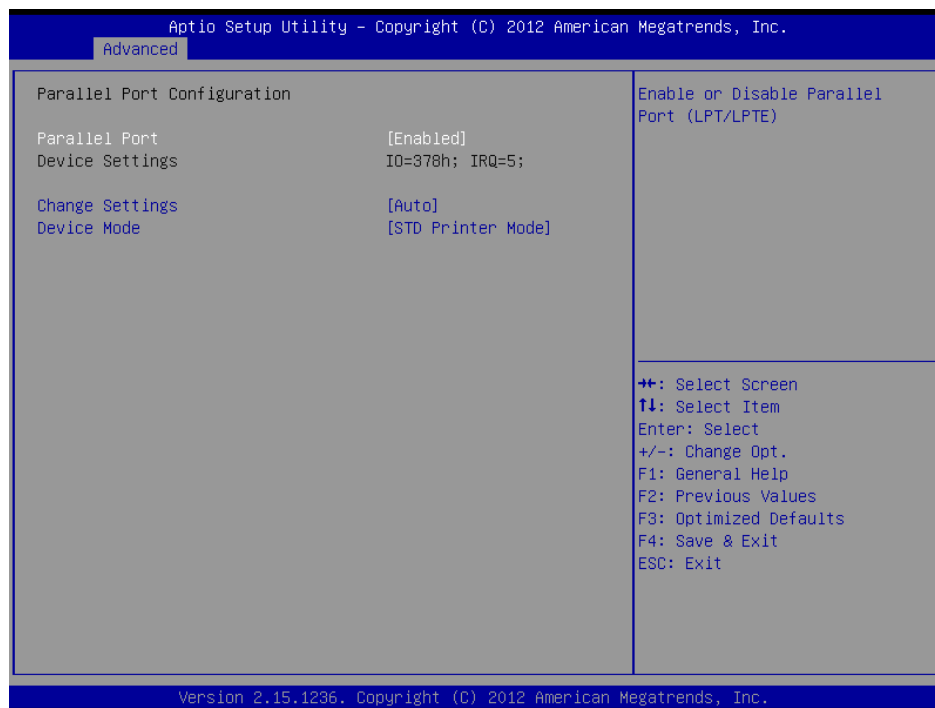
Item	Option	Description
Serial Port	Disabled, Enabled [Default]	Enable or Disable Serial Port (COM).

3.6.2.9.6 Serial Port 6 Configuration



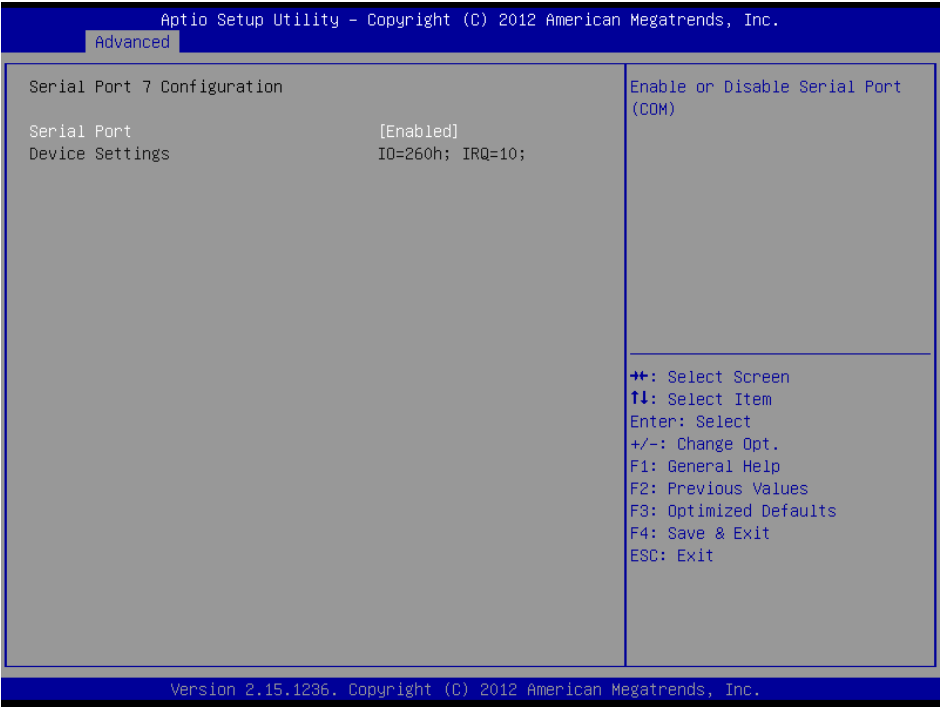
Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).

3.6.2.9.7 Parallel Port Configuration



Item	Option	Description
Parallel Port	Disabled, Enabled[Default]	Enable or Disable Parallel Port (LPT/LPTE).
Change Settings	Auto[Default] IO=378h;IRQ=5; IO=378h;IRQ=5,6,7,10,11,12; IO=278h;IRQ=5,6,7,10,11,12; IO=3BCh;IRQ=5,6,7,10,11,12;	Select an optimal setting for Super IO device.
Device Mode	STD Printer Mode[Default] SPP Mode EPP-1.9 and SPP Mode EPP-1.7 and SPP Mode ECP Mode ECP -1.9 and EPP Mode ECP -1.7 and EPPMode	Change the Printer Port mode.

3.6.2.9.8 Serial Port 7 Configuration



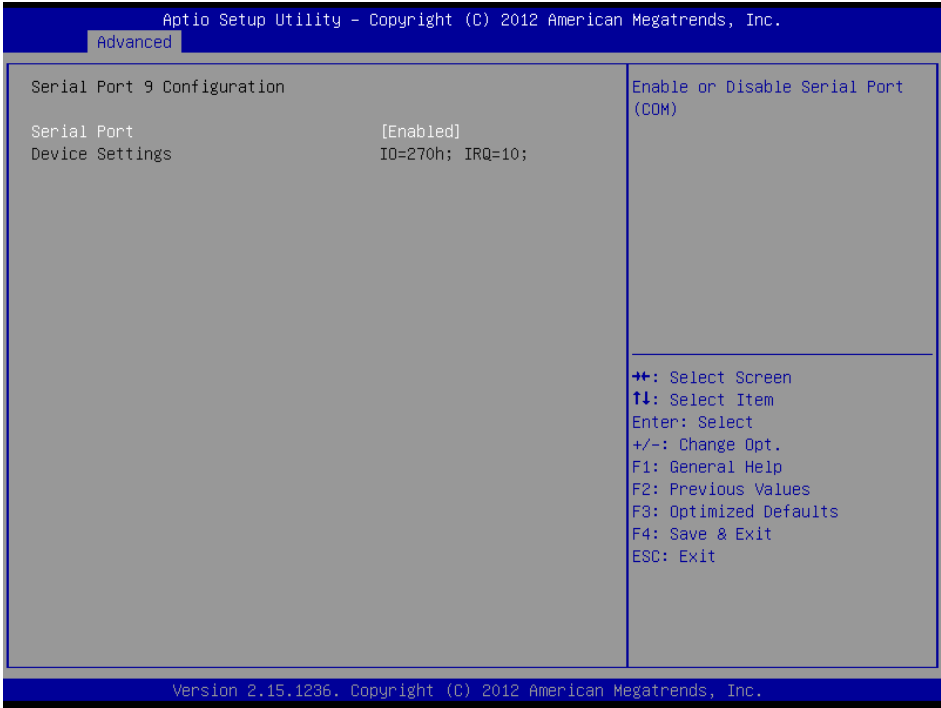
Item	Option	Description
Serial Port	Disabled, Enabled [Default]	Enable or Disable Serial Port (COM).

3.6.2.9.9 Serial Port 8 Configuration



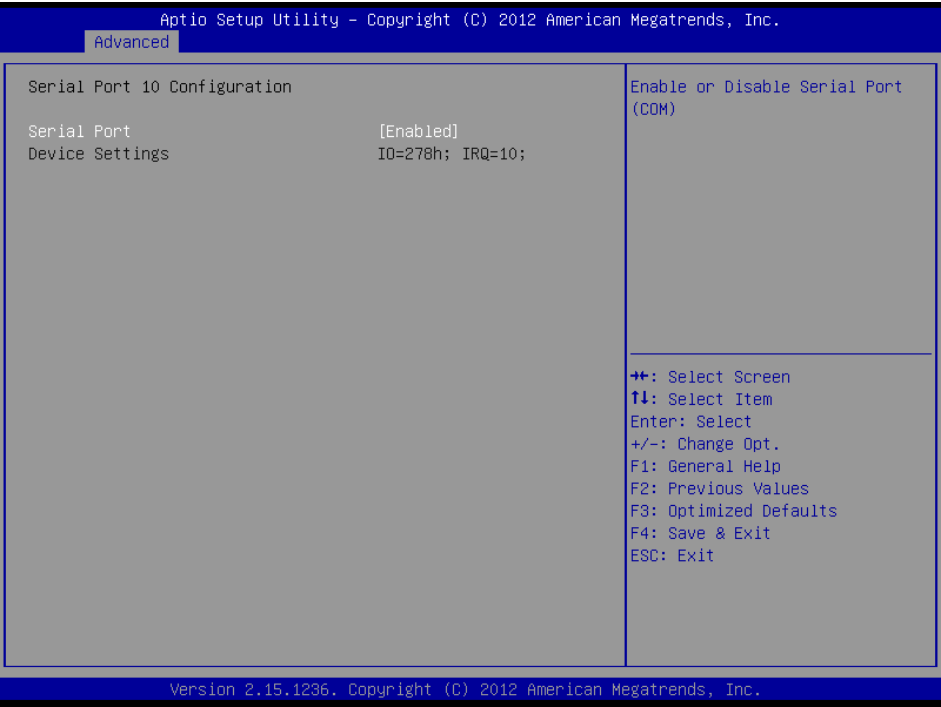
Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).

3.6.2.9.10 Serial Port 9 Configuration



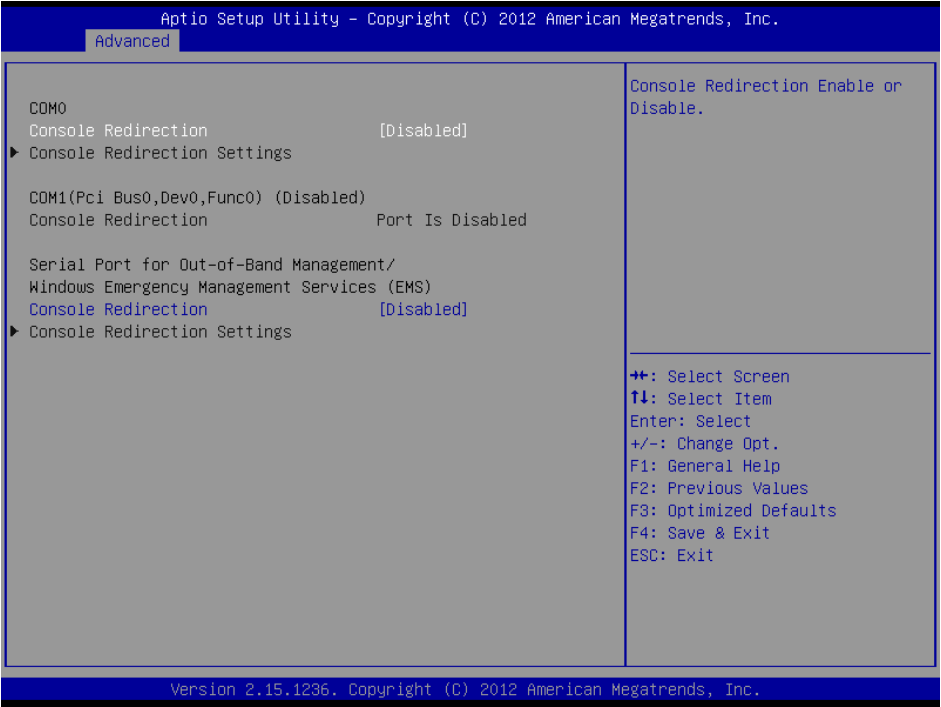
Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).

3.6.2.9.11 Serial Port 10 Configuration



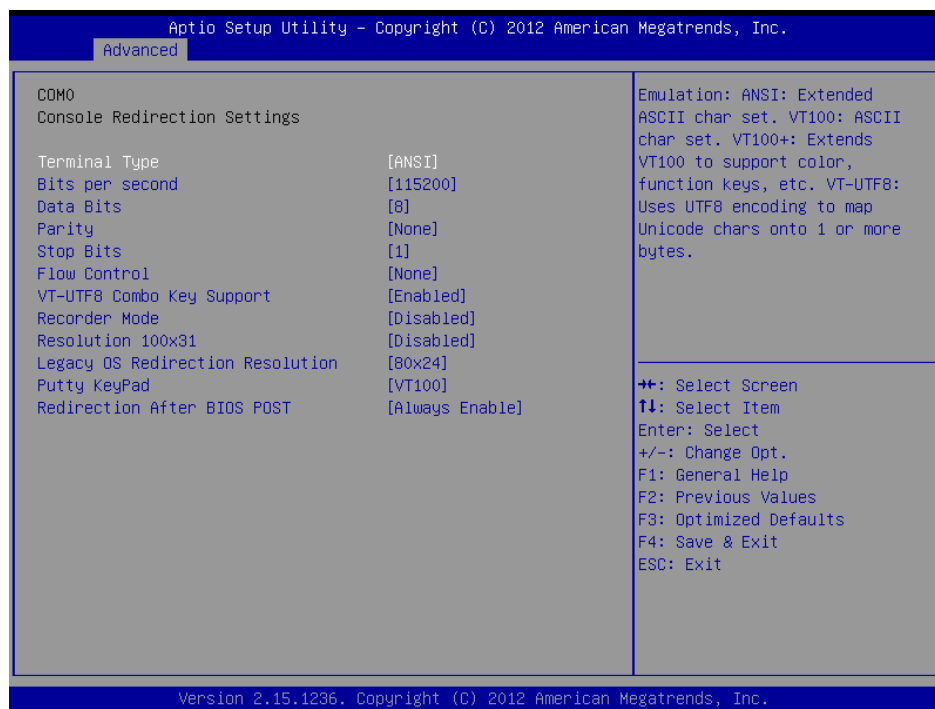
Item	Option	Description
Serial Port	Disabled, Enabled[Default]	Enable or Disable Serial Port (COM).

3.6.2.10 Serial Port Console Redirection



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

3.6.2.10.1 COM0

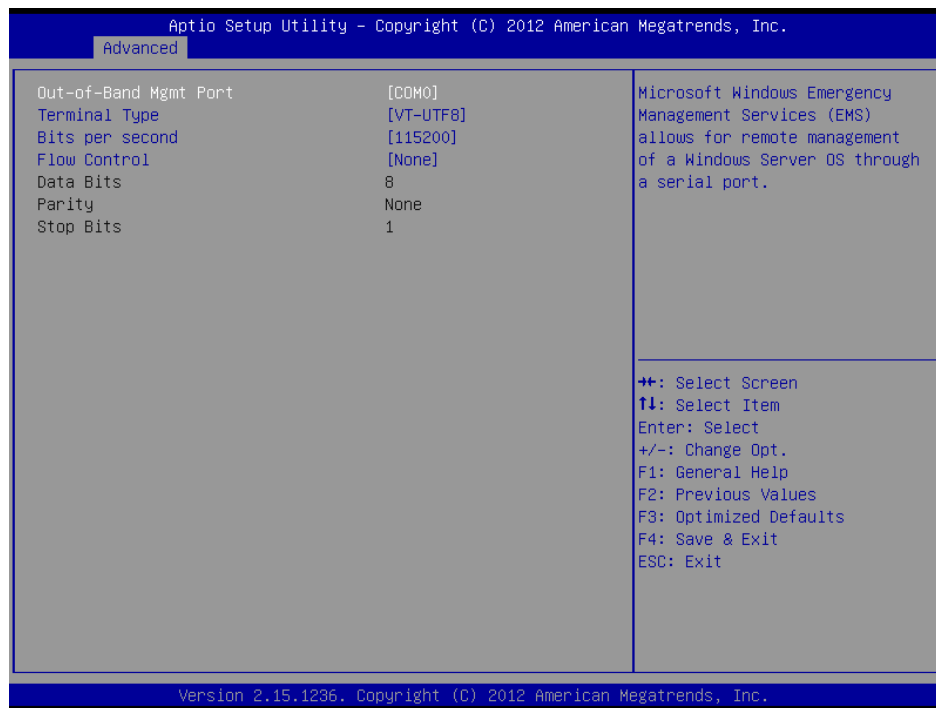


Item	Option	Description
Terminal Type	VT100 VT100+ VT-UTF8 ANSI[Default]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Bits per second	9600 19200 38400 57600 115200[Default]	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
Data Bits	7 8[Default]	Data Bits.
Parity	None[Default] Even Odd Mark Space	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: Parity bit is always. 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection. They can be used as an additional data bit.

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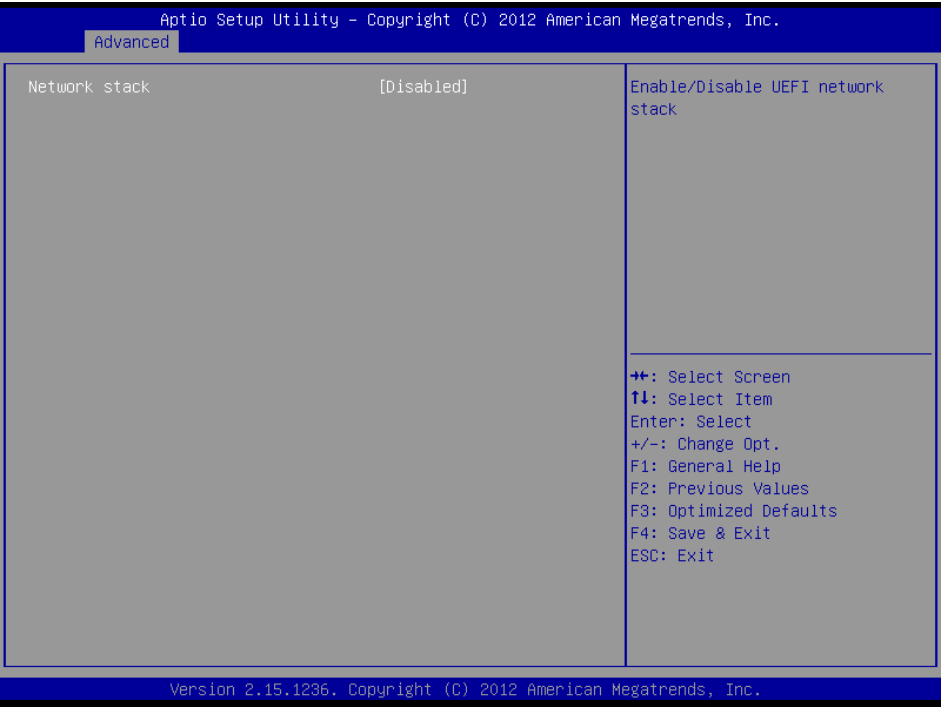
Stop Bits	1[Default] 2	Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.
Flow Control	None[Default] Hardware RTS/CTS	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.
VT-UTF8 Combo Key Support	Disabled Enabled[Default]	Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.
Recorder Mode	Disabled[Default] Enabled	On this mode enabled only text will be sent. This is to capture Terminal data.
Resolution 100×31	Disabled[Default] Enabled	Enables or disables extended terminal resolution.
Legacy OS Redirection Resolution	80X24[Default] 80X25	On Legacy OS, Number of Rows and Columns supported redirection
Putty KeyPad	VT100[Default] LINUX XTERMR6 SCO ESCN VT400	Select FunctionKey and KeyPad on Putty.
Redirection After BIOS POST	Always Enable[Default] BootLoader	The Settings specify if BootLoader is selected than Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legacy console Redirection is enabled for Legacy OS.

3.6.2.10.2 Console Redirection Settings

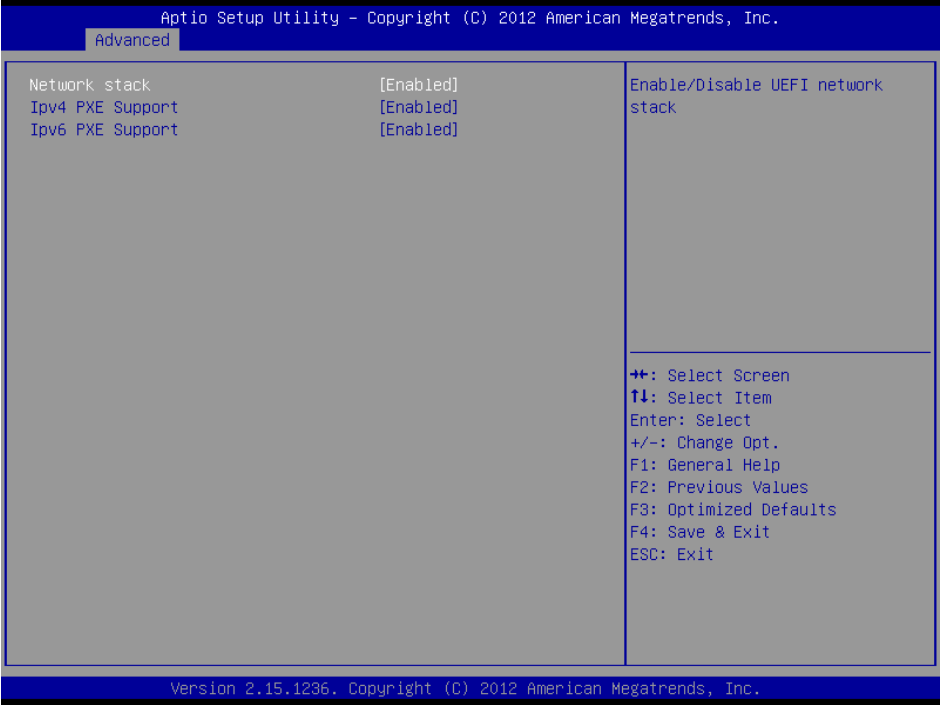


Item	Option	Description
Out-of-Band Mgmt Port	COM0	Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.
Terminal Type	VT100 VT100+ VT-UTF8[Default] ANSI	VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in Console Redirection Settings page, for more Help with Terminal Type/Emulation.
Bits per second	9600 19200 57600 115200[Default]	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.
Flow Control	None[Default] Hardware RTS/CTS Software Xon/Xoff	Flow Control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

3.6.2.11 Network Stack



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



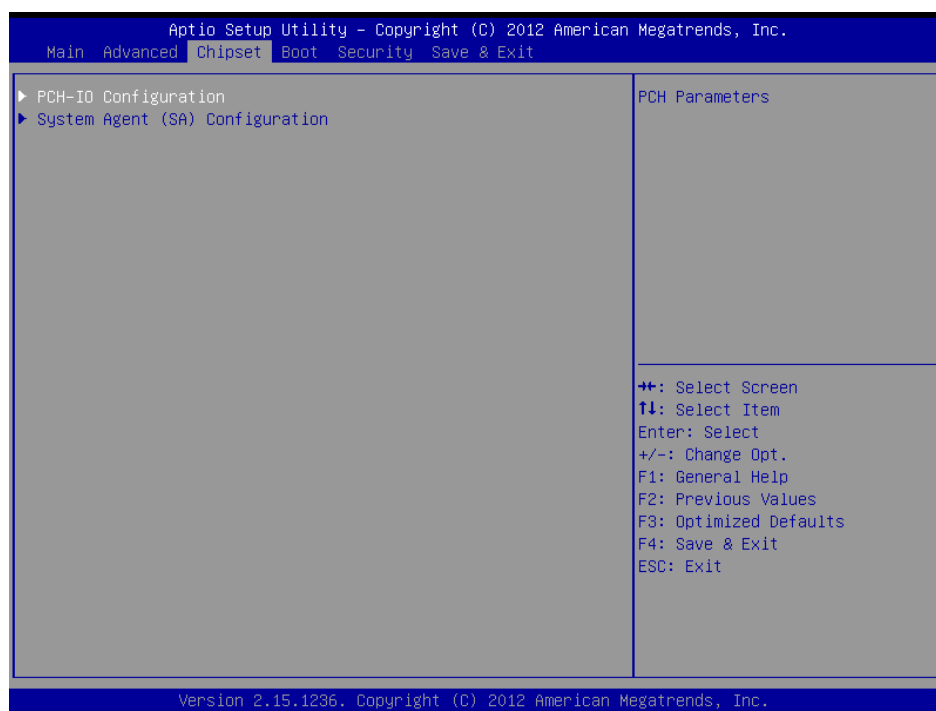
Item	Options	Description
Network Stack	Disabled Enabled [Default]	Enable/Disable UEFI Network Stack.

Ipv4 PXE Support	Disabled Enabled[Default]	Enable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot option will not be created.
Ipv6 PXE Support	Disabled Enabled[Default]	Enable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot option will not be created.

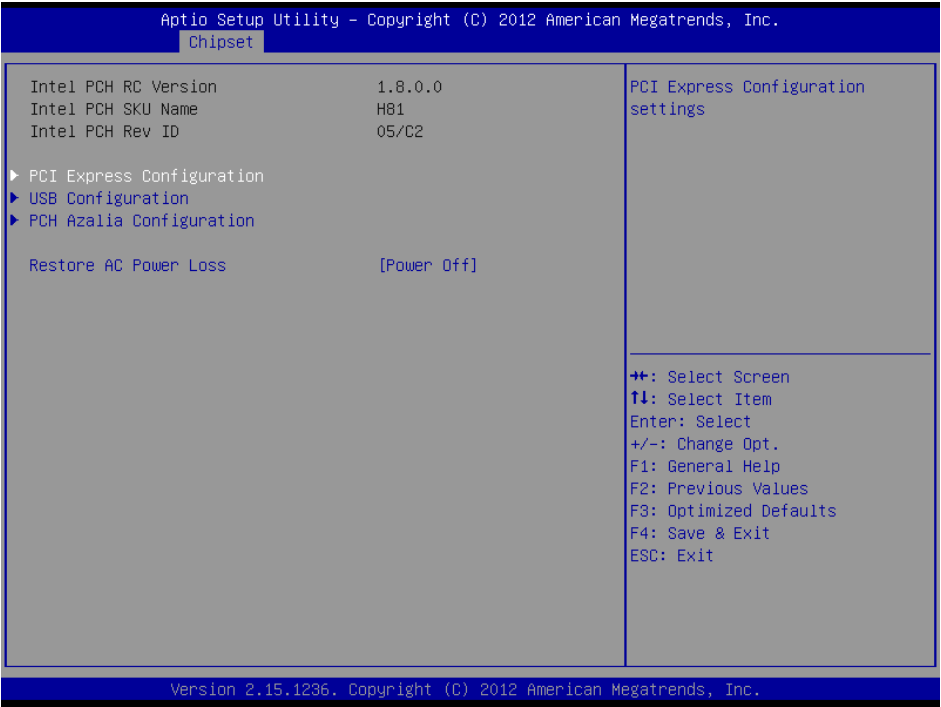
3.6.2.12 Intel RC Drivers Version Detail



3.6.3 Chipset

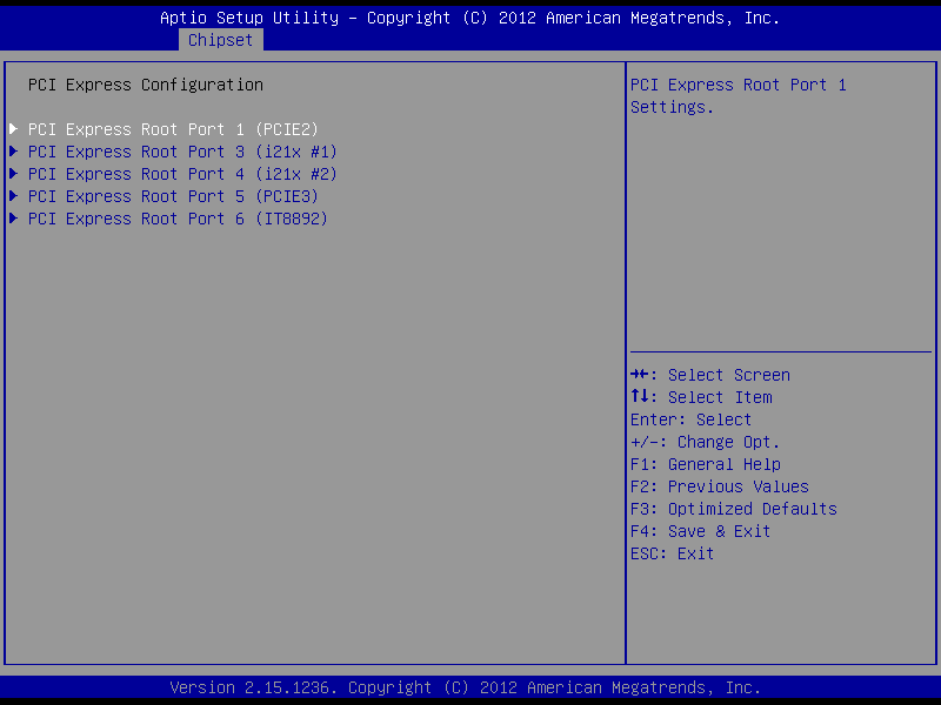


3.6.3.1 PCH-IO Configuration

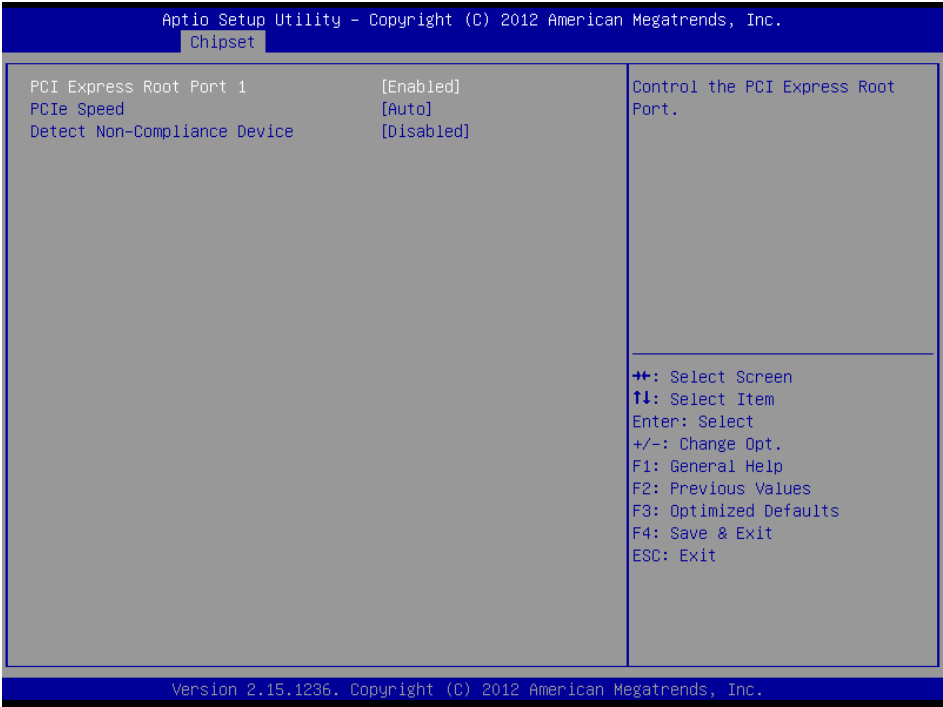


Item	Option	Description
Restore AC Power Loss	Power Off[Default] Power On Last State	Select AC power state when power is re-applied after a power failure.

3.6.3.1.1 PCI Express Configuration

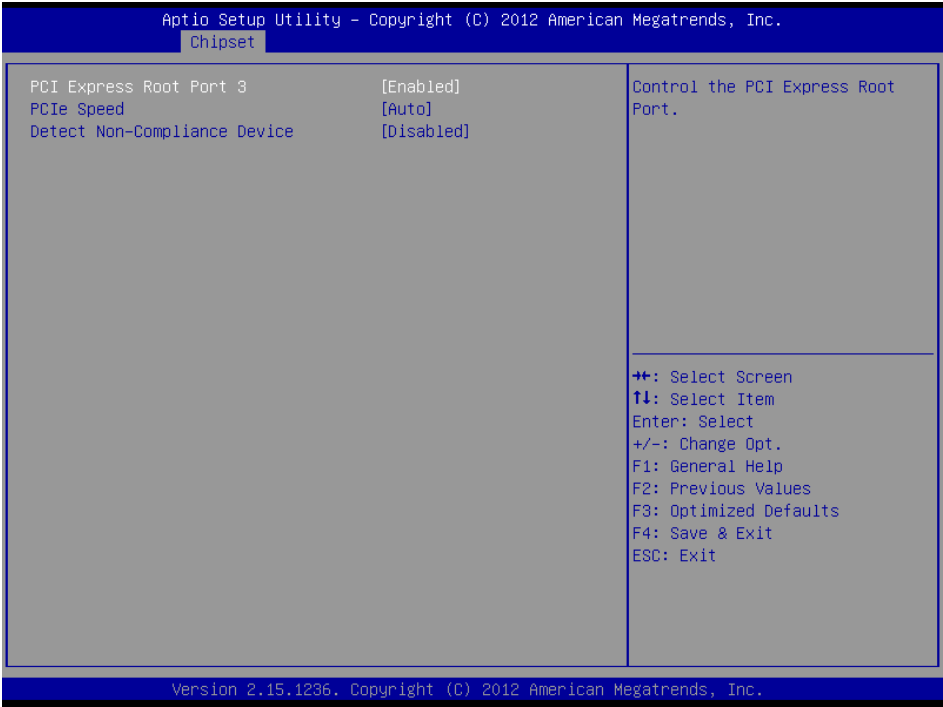


3.6.3.1.1.1 PCI Express Root Port 1 (PCIE2)



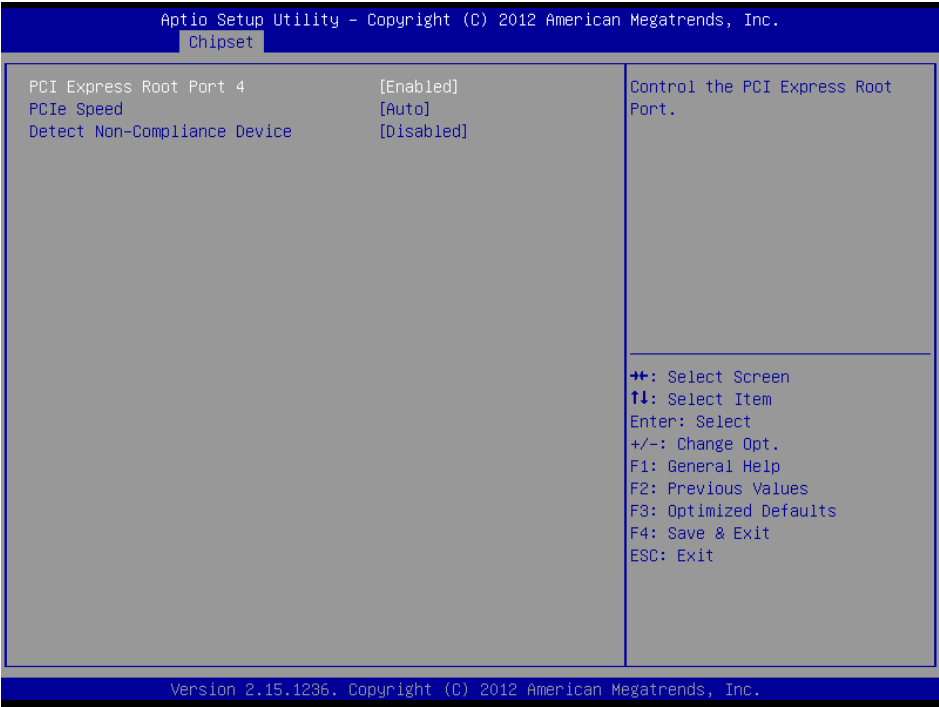
Item	Option	Description
PCI Express Root Port 1	Disabled Enabled[Default],	Control the PCI Express Root Port.
PCIe Speed	Auto[Default] Gen1 Gen2	Select PCI Express Port Speed.
Detect Non-Compliance Device	Disabled[Default], Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

3.6.3.1.1.2 PCI Express Root Port 3 (i21x #1)



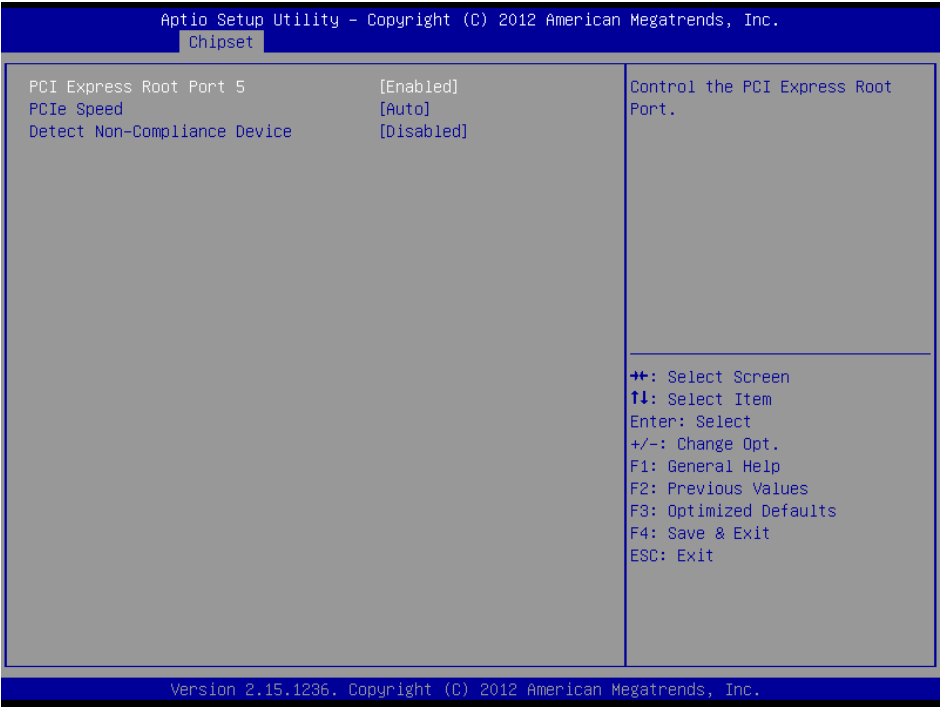
Item	Option	Description
PCI Express Root Port 3	Disabled Enabled [Default] ,	Control the PCI Express Root Port.
PCIe Speed	Auto [Default] Gen1 Gen2	Select PCI Express Port Speed.
Detect Non-Compliance Device	Disabled [Default] , Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

3.6.3.1.1.3 PCI Express Root Port 4 (i21x #2)



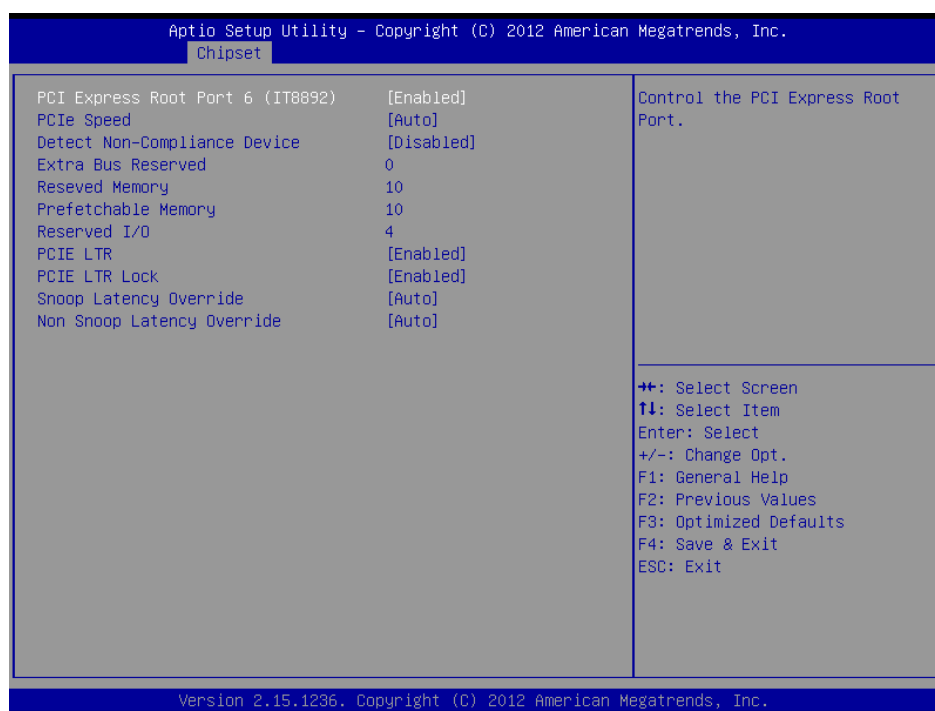
Item	Option	Description
PCI Express Root Port 4	Disabled Enabled[Default],	Control the PCI Express Root Port.
PCIe Speed	Auto[Default] Gen1 Gen2	Select PCI Express Port Speed.
Detect Non-Compliance Device	Disabled[Default], Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

3.6.3.1.1.4 PCI Express Root Port 5 (PCIE3)



Item	Option	Description
PCI Express Root Port 5	Disabled Enabled [Default] ,	Control the PCI Express Root Port.
PCIe Speed	Auto [Default] Gen1 Gen2	Select PCI Express Port Speed.
Detect Non-Compliance Device	Disabled [Default] , Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

3.6.3.1.1.5 PCI Express Root Port 6 (IT8892)



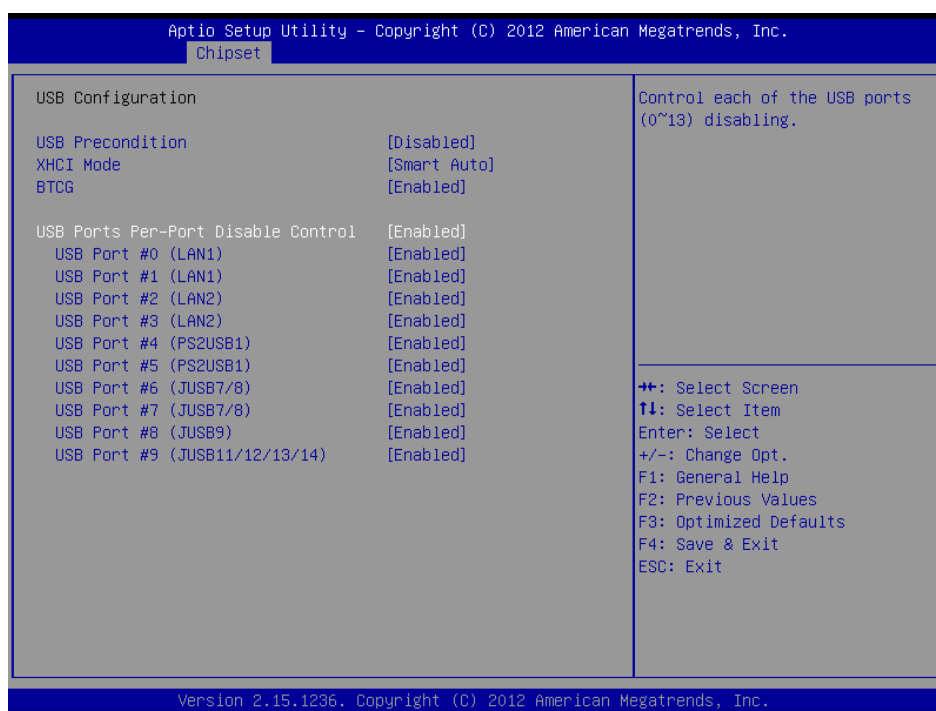
Item	Option	Description
PCI Express Root Port 6 (IT8892)	Disabled Enabled[Default],	Control the PCI Express Root Port.
PCIe Speed	Auto[Default] Gen1 Gen2	Select PCI Express Port Speed.
Detect Non-Compliance Device	Disabled[Default], Enabled	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.
Extra Bus Reserved	0	Extra Bus Reserved (0-7) for bridges behind this Root Bridge.
Reseved Memory	10	Reseved Memory Range for this Root Bridge.
Prefetchable Memory	10	Prefetchable Memory Range for this Root Bridge.
Reserved I/O	4	Reserved I/O (4K/8K/12K/16K/.../48K) Range for this Root Bridge.
PCIE LTR	Disabled Enabled[Default],	PCIE Latency Reporting Enable/Disable.
PCIE LTR Lock	Disabled Enabled[Default],	PCIE LTR Configuration Lock.
Snoop Latency Override	Disabled Manual Auto[Default],	Snoop Latency Override for PCH PCIE.
Non Snoop Latency Override	Disabled Manual Auto[Default],	Non Snoop Latency Override for PCH PCIE.

3.6.3.1.2 | USB Configuration



Item	Option	Description
USB Precondition	Disabled [Default] , Enabled	Precondition work on USB host controller and root ports for faster enumeration.
XHCI Mode	Smart Auto [Default] , Auto Enabled Disabled Manual	Mode of operation of xHCI controller.
BTCG	Enabled Disabled [Default] ,	Enabling/disabling trunk clock gating.
USB Ports Per-Port Disable Control	Disabled [Default] , Enabled	Control each of the USB ports (0~13) disabling.

3.6.3.1.2.1 USB Configuration

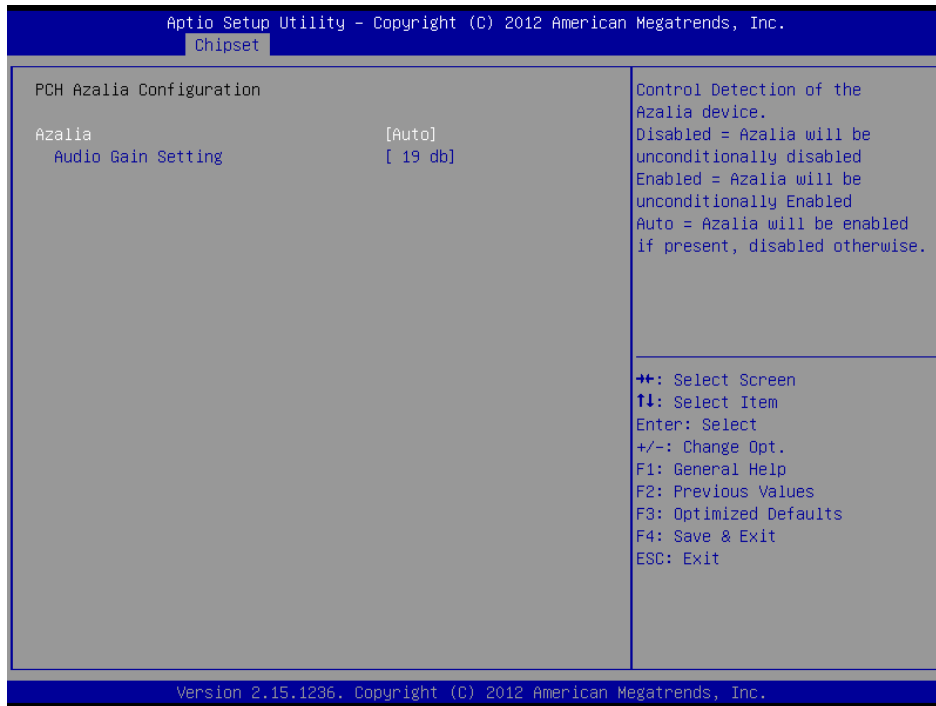


Item	Option	Description
USB Precondition	Disabled[Default], Enabled	Precondition work on USB host controller and root ports for faster enumeration.
XHCI Mode	Smart Auto [Default], Auto Enabled Disabled Manual	Mode of operation of xHCI controller.
BTCG	Enabled[Default], Disabled	Enabling/disabling trunk clock gating.
USB Ports Per-Port Disable Control	Disabled Enabled[Default],	Control each of the USB ports (0~13) disabling.
USB Port #0 (LAN1)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #2 (LAN2)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #3 (LAN2)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #4 (PS2USB1)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #5 (PS2USB1)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #6 (JUSB7/8)	Disabled Enabled[Default],	Enable/Disable USB port.
USB Port #7 (JUSB7/8)	Disabled Enabled[Default],	Enable/Disable USB port.

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USB Port #8 (JUSB9)	Disabled Enabled [Default] ,	Enable/Disable USB port.
USB Port #9 (JUSB11/12/13/14)	Disabled Enabled [Default] ,	Enable/Disable USB port.

3.6.3.1.3 PCH Azalia Configuration



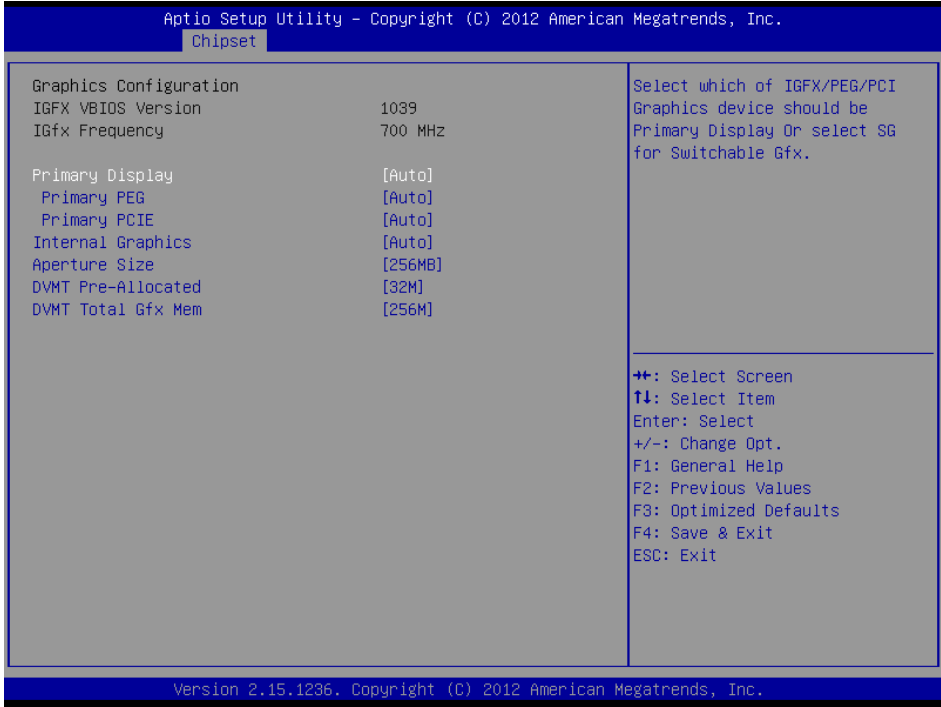
Item	Option	Description
Azalia	Disabled Enabled Auto [Default] ,	Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled Enabled = Azalia will be unconditionally Enabled Auto = Azalia will be enabled if present, disabled otherwise.
Audio Gain Setting	11db 14db 19db [Default] , 25db	Gain Setting 11/14/19/25 dB

3.6.3.2 System Agent (SA) Configuration



Item	Option	Description
CPU SA Audio Device (B0:D3:F0)	Enabled[Default], Disabled	Enable or Disable CPU SA Audio Device.

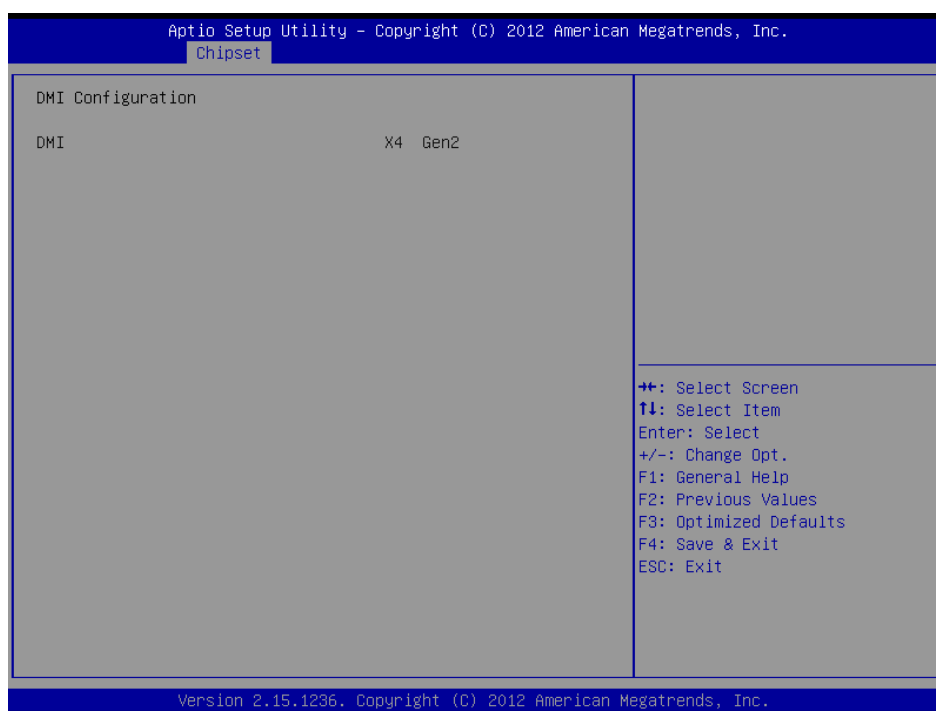
3.6.3.2.1 Graphics Configuration



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Item	Option	Description
Primary Display	Auto[Default] IGFX PEG PCIE	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
Primary PEG	Auto[Default] PEG11 PEG12	Select PEG0/PEG1/PEG2/PEG3 Graphics device should be Primary PEG.
Primary PCIE	Auto[Default] PCIE1 PCIE2 PCIE3 PCIE4 PCIE5 PCIE6 PCIE7	Select PCIE0/ PCIE1/ PCIE2/ PCIE3/ PCIE4/ PCIE5/PCIE6/ PCIE7 Graphics device should be Primary PCIE.
Internal Graphics	Auto[Default] Disabled Enabled	Keep IGD enabled based on the setup options.
Aperture Size	128MB 256MB[Default] 512MB	Select the Aperture Size
DVMT Pre-Allocated	32M[Default] 64M 96 M 128M 160M 192M 224M 256M 288M 320M 352M 384M 416M 448M 480M 512M 1024M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	128M 256M[Default] MAX	Select DVMT 5.0 Total Graphics Memory size used by the Internal Graphics Device.

3.6.3.2.2 DMI Configuration



3.6.3.2.3 NB PCIe Configuration

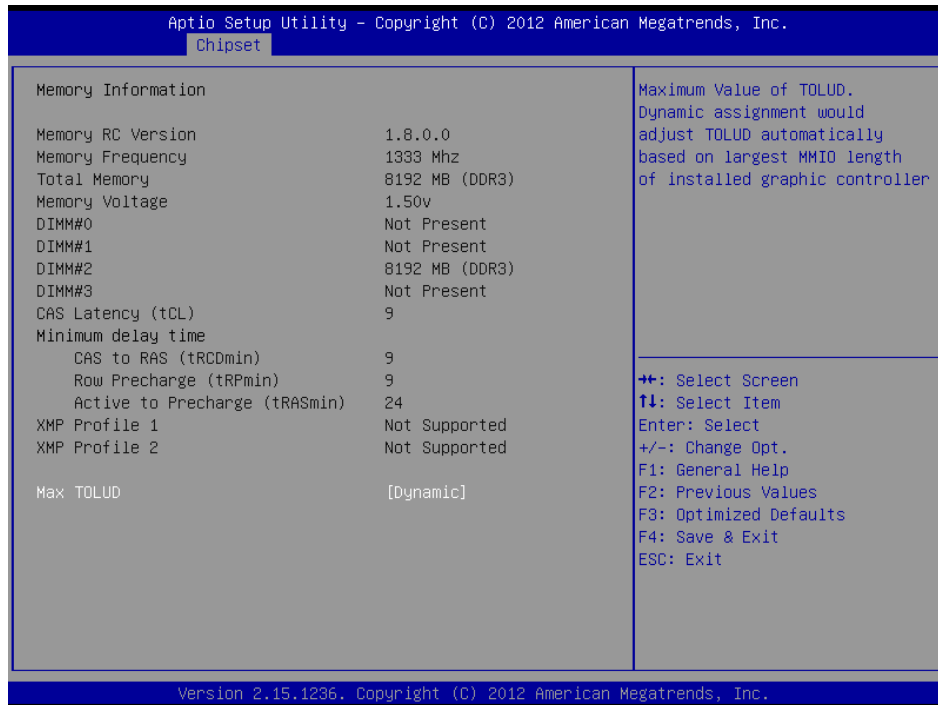


Item	Option	Description
PEG0 - Gen X	GEN1 GEN2[Default]	Configure PEG0 B0:D1:F0 Gen1-Gen3
Detect Non-Compliance Device	Disabled[Default] Enabled	Detect Non-Compliance PCI Express Device in PEG

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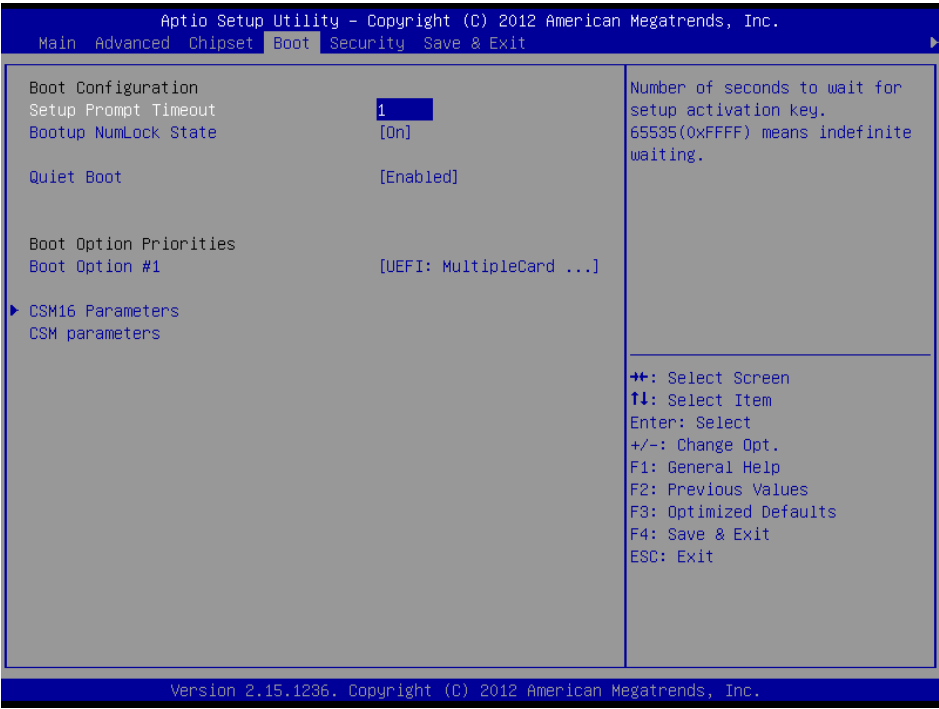
PEG0 - ASPM	Disabled[Default] Auto ASPM L0s ASPM L1 ASPM L0sL1	Control ASPM support for the PEG Device. This has no effect if PEG is not the currently active device.
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3.6.3.2.4 Memory Configuration



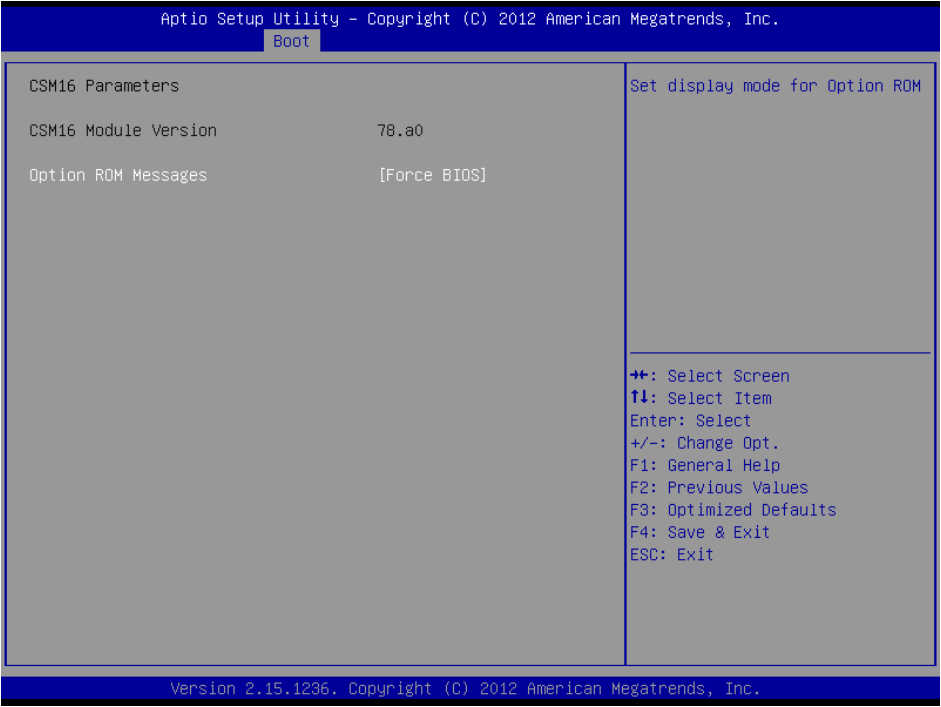
Item	Option	Description
Max TOLUD	Dynamic 1 GB 1.25 GB 1.5 GB 1.75 GB 2 GB 2.25 GB 2.5 GB 2.75 GB 3 GB 3.25 GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller

3.6.4 Boot



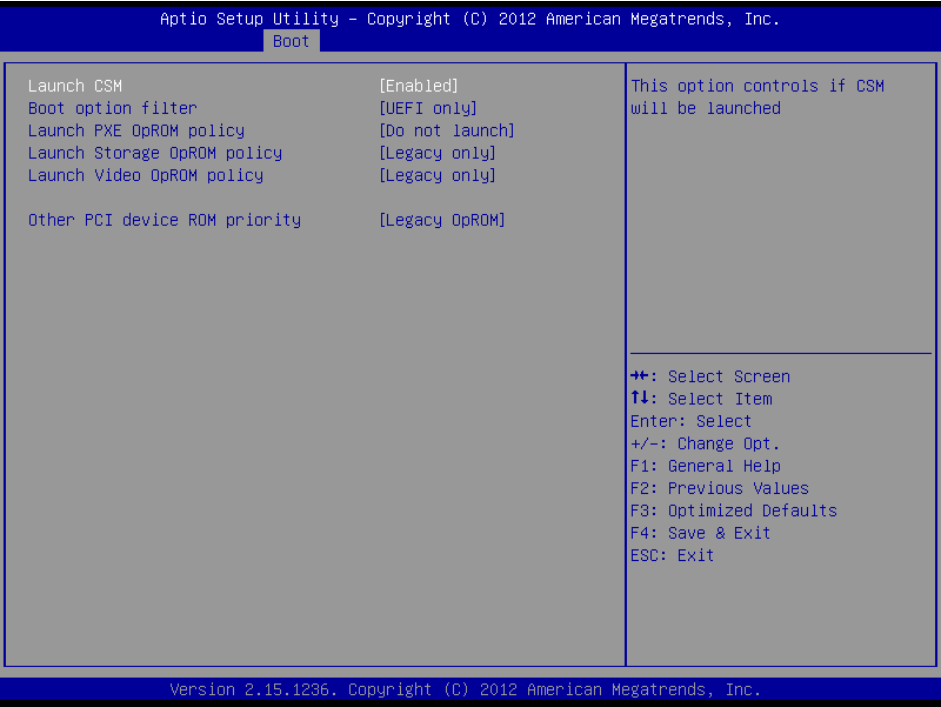
Item	Option	Description
Setup Prompt Timeout	1	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On[Default] Off	Select the keyboard NumLock state
Quiet Boot	Disabled Enabled[Default]	Enables or disables Quiet Boot option
Boot Option #1	Sets the system boot order.	

3.6.4.1 CSM16 Parameters



Item	Option	Description
Option ROM Messages	Force BIOS[Default] Keep Current	Set display mode for Option ROM

3.6.4.2 CSM parameters



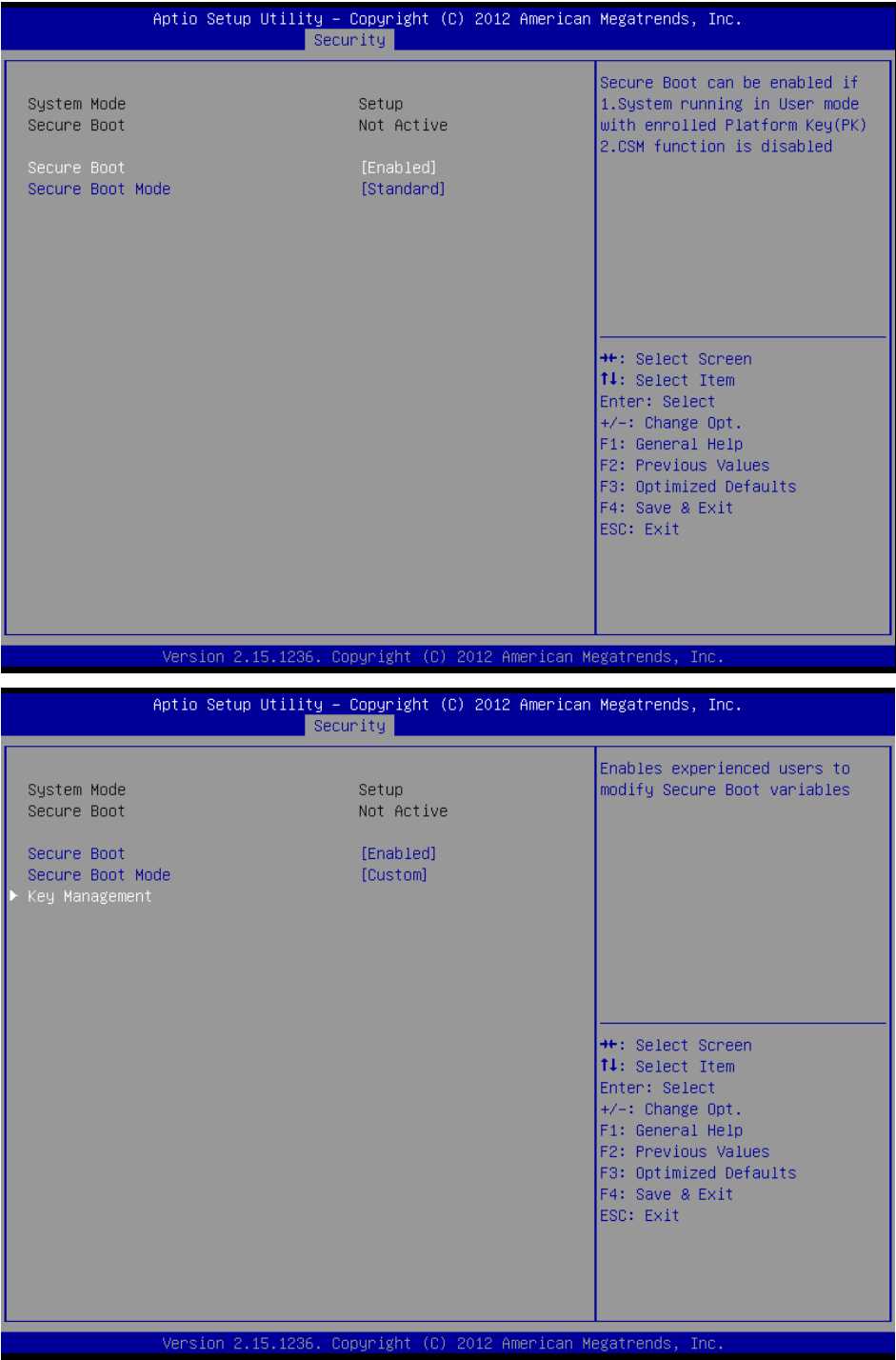
Item	Option	Description
Launch CSM	Enabled[Default] Disabled	This option controls if CSM will be launched
Boot option filter	Legacy only UEFI only[Default]	This option controls what devices system can boot to
Launch PXE OpROM policy	Do not launch[Default] UEFI only Legacy only	Controls the execution of UEFI and Legacy PXE OpROM
Launch Storage OpROM policy	Do not launch UEFI only Legacy only[Default]	Controls the execution of UEFI and Legacy Storage OpROM
Launch Video OpROM policy	Do not launch UEFI only Legacy only[Default]	Controls the execution of UEFI and Legacy Video OpROM
Other PCI device ROM priority	UEFI OpROM Legacy OpROM [Default]	For PCI devices other than Network, Mass storage or Video defines which OpROM to launch

3.6.5 Security



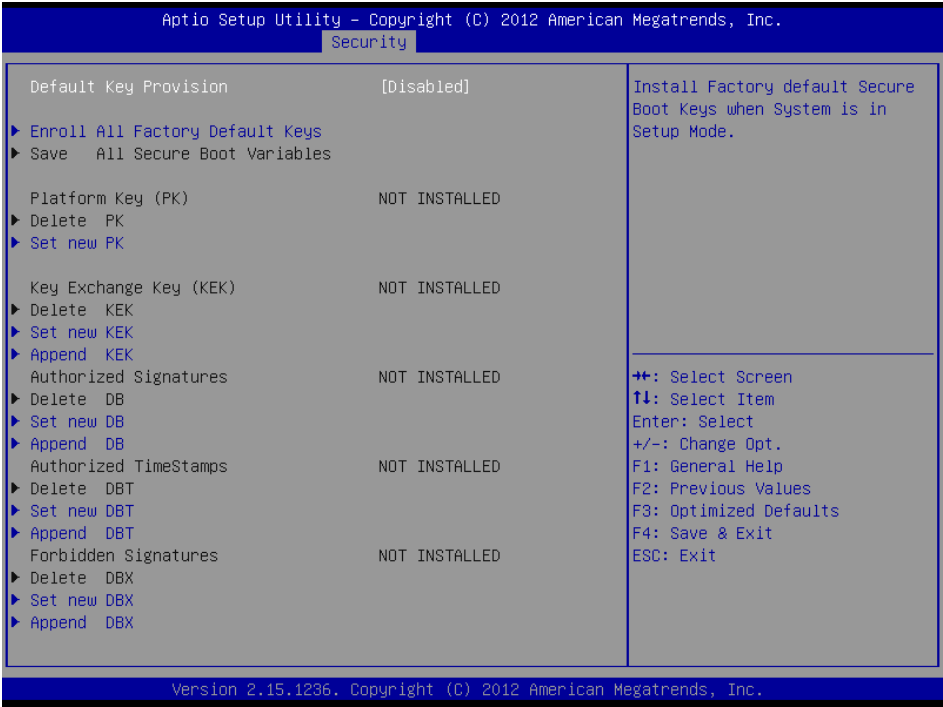
- **Administrator Password**
Set setup Administrator Password
- **User Password**
Set User Password

3.6.5.1 Secure Boot



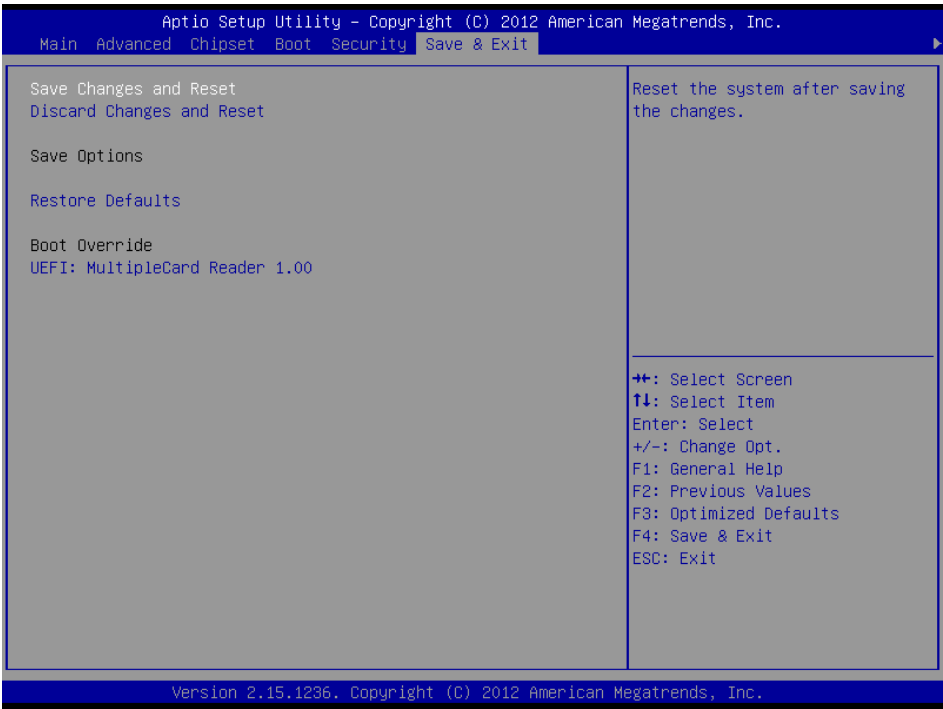
Item	Option	Description
Secure Boot	Disabled Enabled[Default],	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled
Secure Boot Mode	Standard Custom[Default],	Secure Boot mode selector. 'Custom' Mode enables users to change Image Execution policy and manage Secure Boot Keys.

3.6.5.1.1 Key Management



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

3.6.6 Save and exit



3.6.6.1 Save Changes and Reset

Reset the system after saving the changes.

3.6.6.2 Discard Changes and Reset

Reset the system setup without saving any changes.

3.6.6.3 Restore Defaults

Restore/Load Default values for all the setup options.

3.6.6.4 Launch EFI Shell from filesystem device

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

4. Drivers Installation



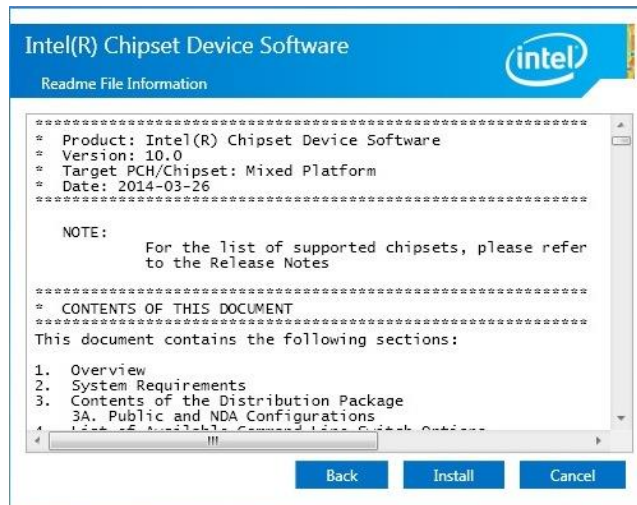
Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

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 7 operation system. If the warning message appears while the installation process, click Continue to go on.



Step 3. Select Install.



Step1. Select **Next** to continue installation.



Step 4. Select **Finish** to complete Installation.



Step 2. Select **Accept** to the next step.

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.



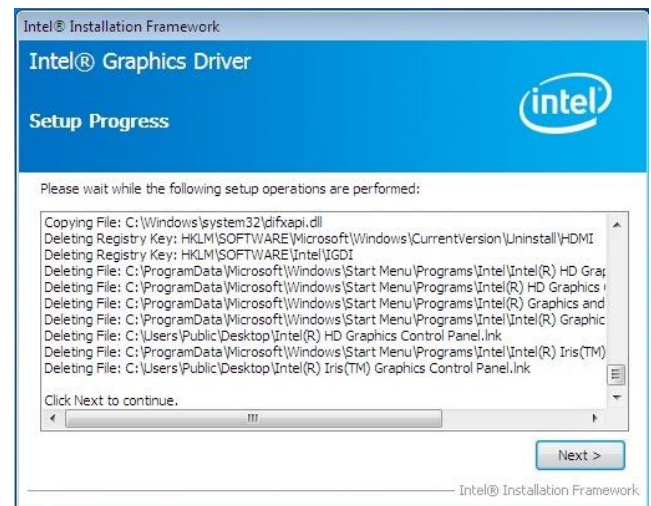
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



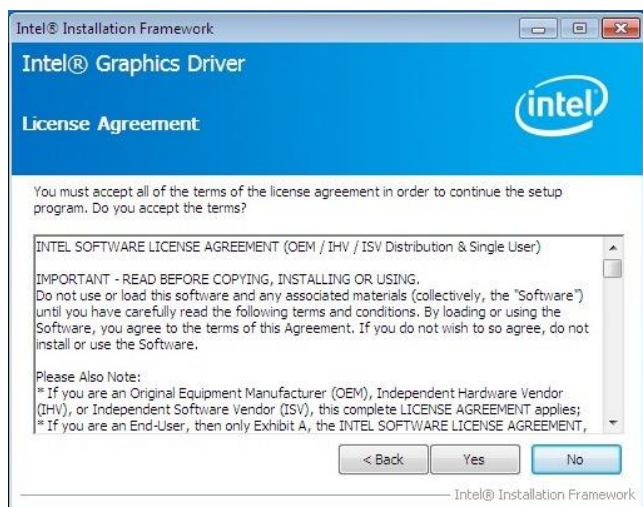
Step 3. Select **Next** to continue installation.



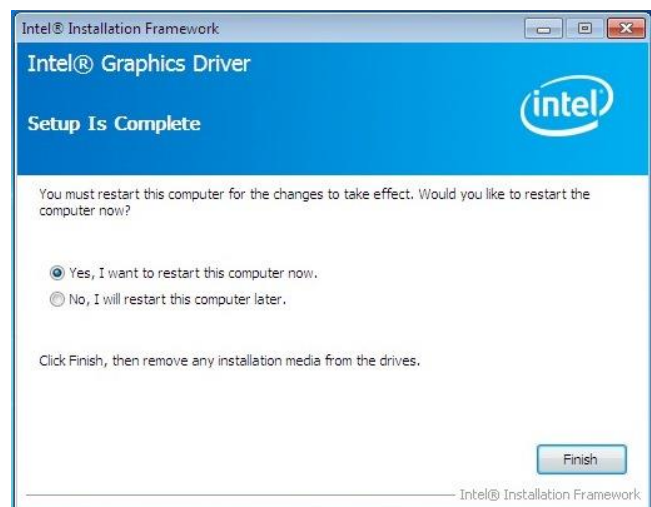
Step 1. Select **Next** to start setup.



Step 4. Click **Next**.



Step 2. Select **Yes** to the next step.



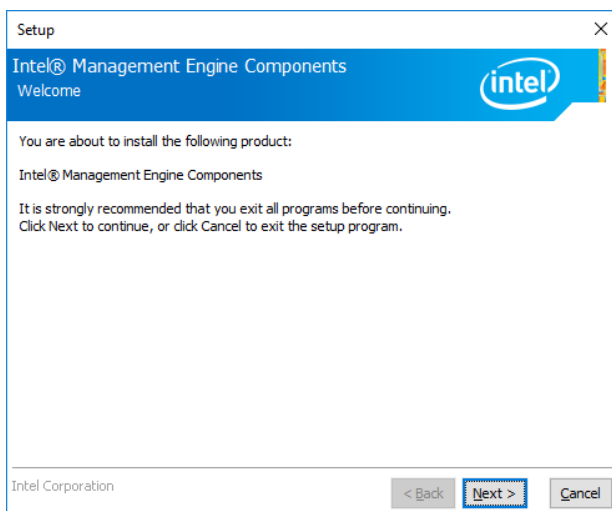
Step 5. Select **Finish** to complete Installation.

4.3 Install SOL Driver

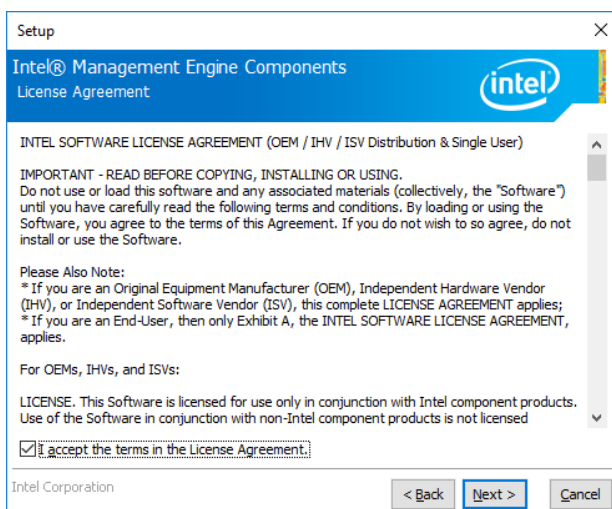
Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.



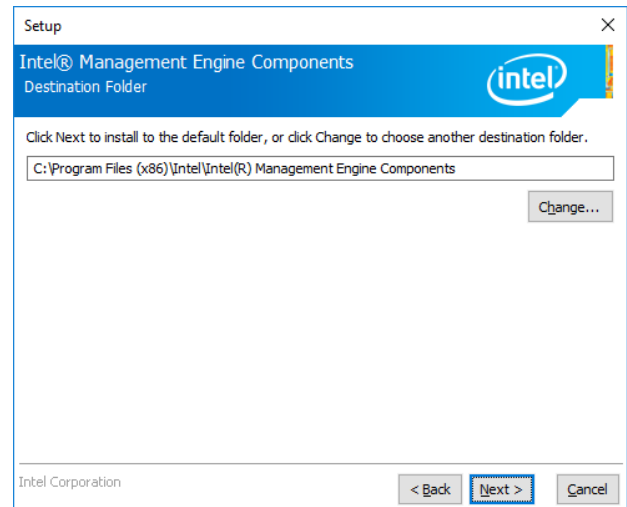
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



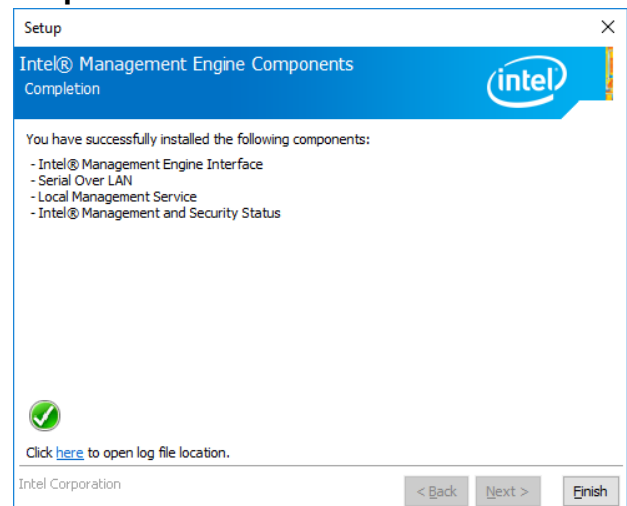
Step 1. Click **Next** to continue setup.



Step 2. Click **Next**.



Step 3. Click **Next**



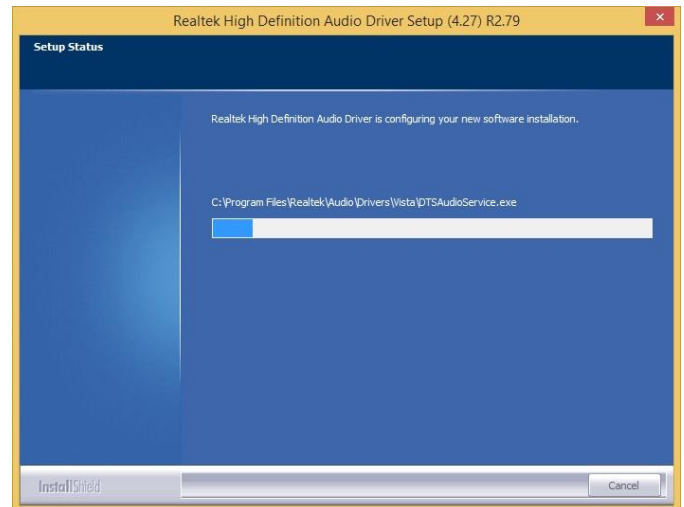
Step 4. Click **Finish** to complete the setup

4.4 Install Audio Driver (For Realtek ALC892 HD Audio)

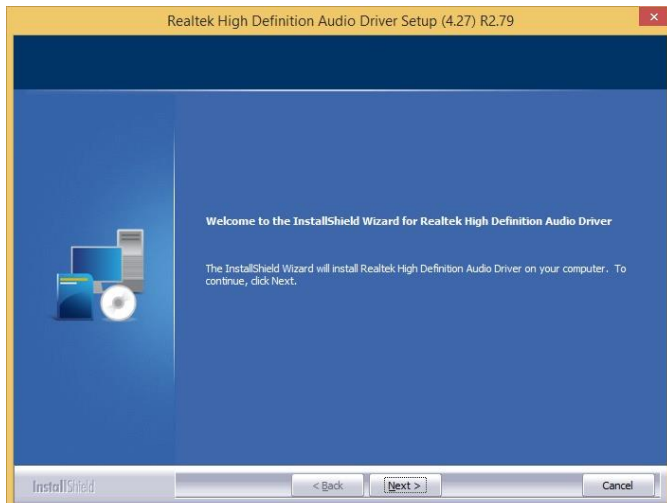
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.



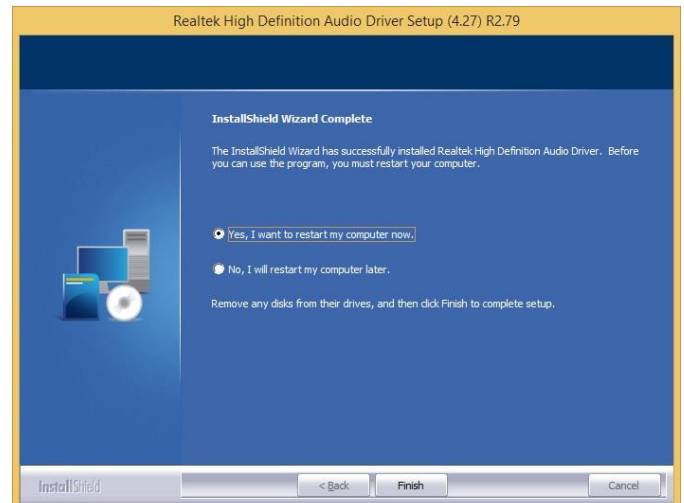
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system. If the warning message appears while the installation process, click Continue to go on.



Step2. installing



Step1. Click **Next** to Install.



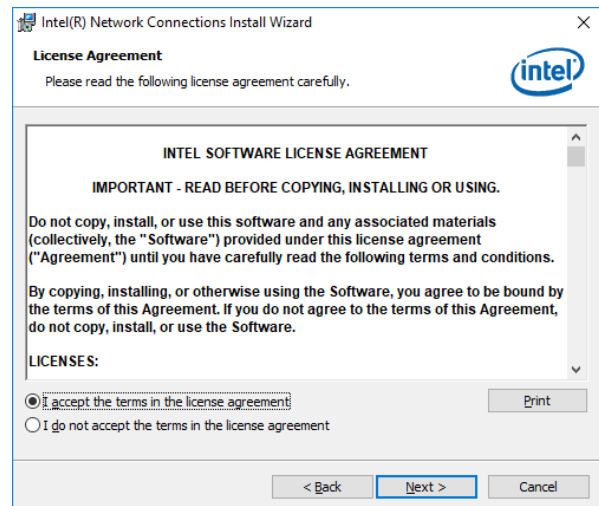
Step 3. Select **Finish** to complete Installation.

4.5 Install LAN Driver

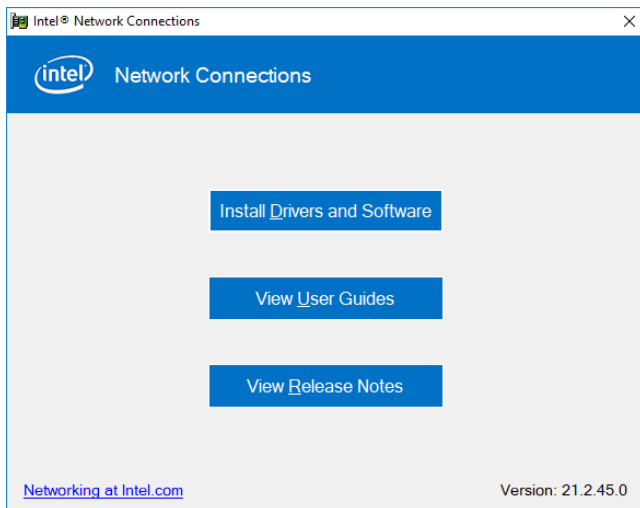
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.



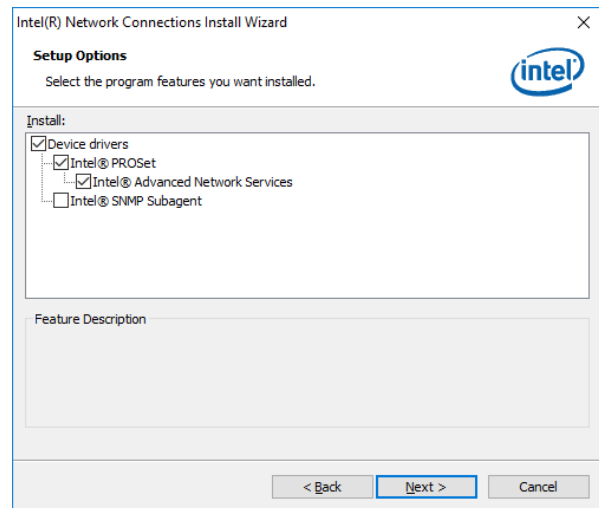
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



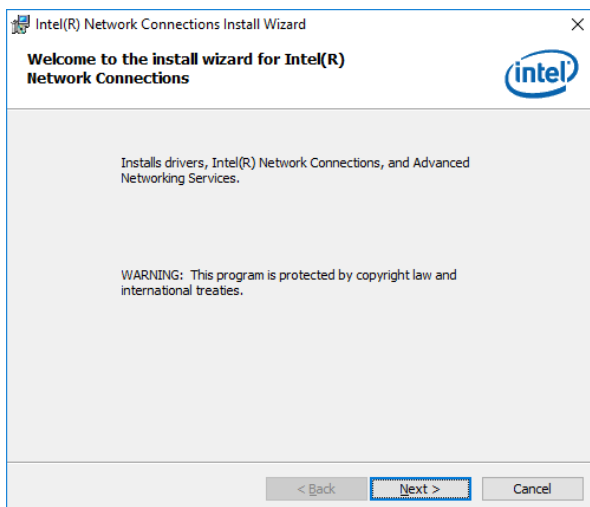
Step 3. Click Next.



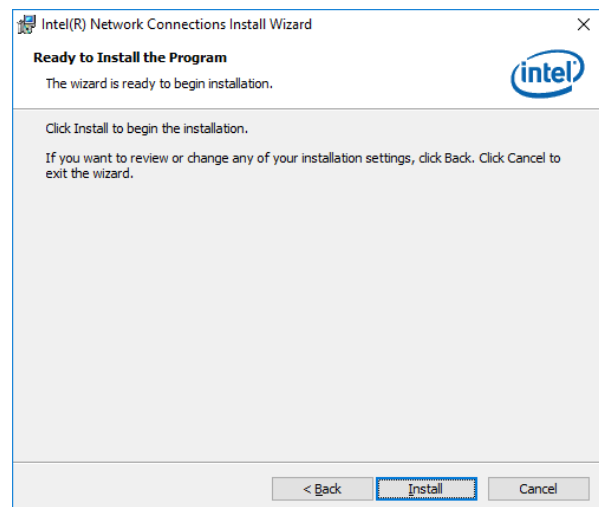
Step 1. Click Install Drivers and Software.



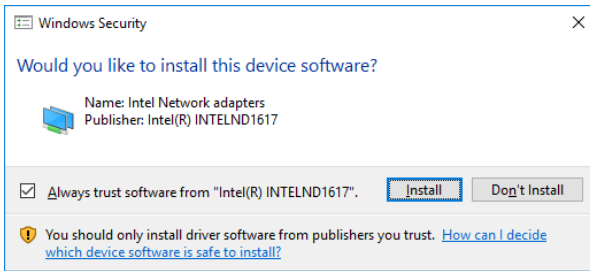
Step 4. Click Next.



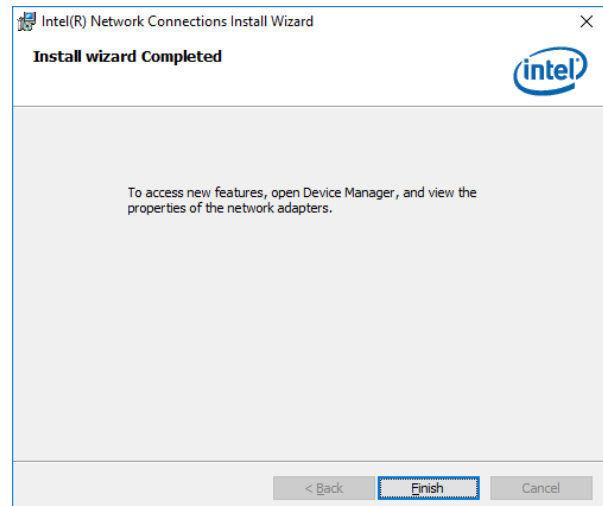
Step 2. Click Next.



Step 5. Click Install.



Step 6. Click **Install**.



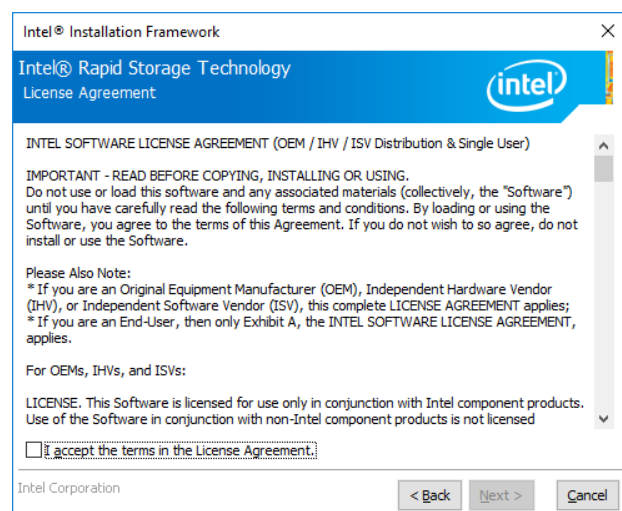
Step 7. Click **Finish** to complete setup.

4.6 Install RST Driver

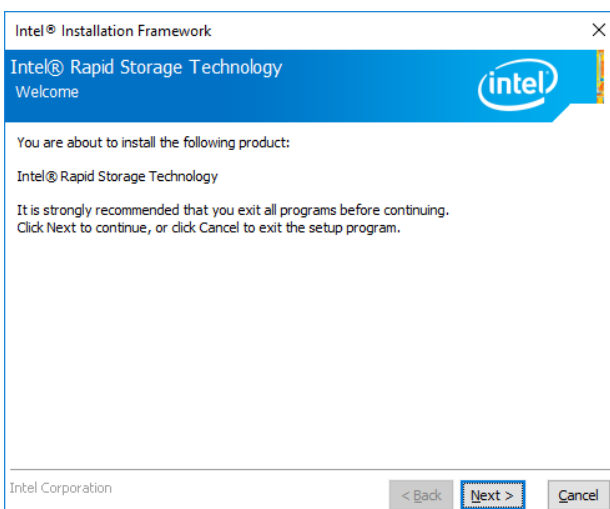
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.



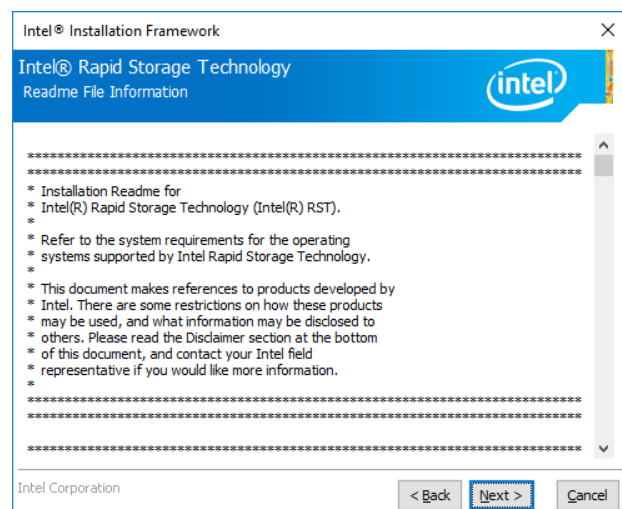
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



Step 2. Click **Next**.

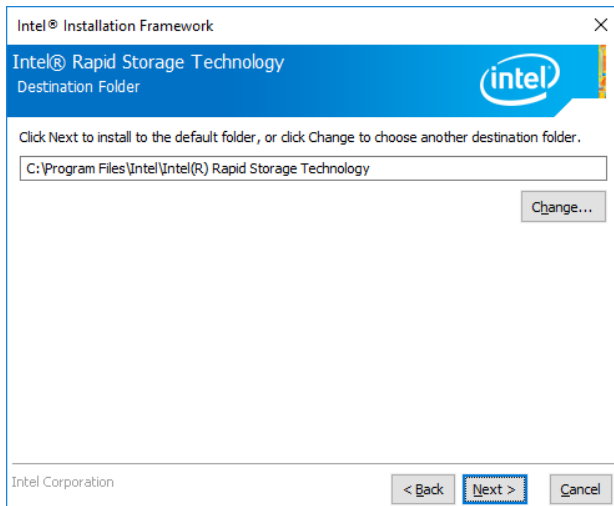


Step 1. Click **Next** to continue installation.

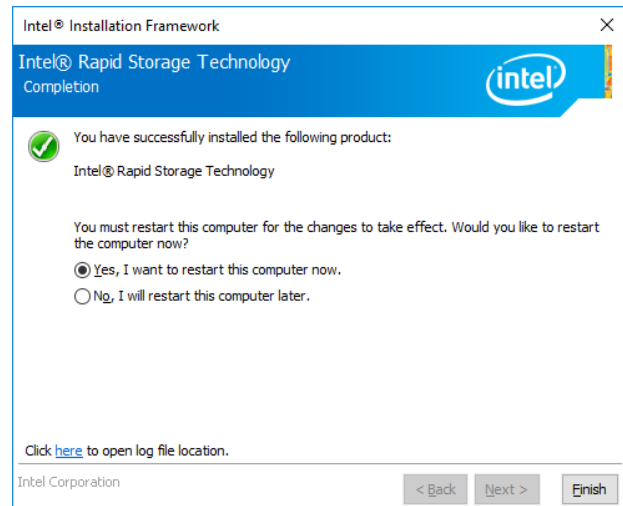


Step 3. Click **Next**.

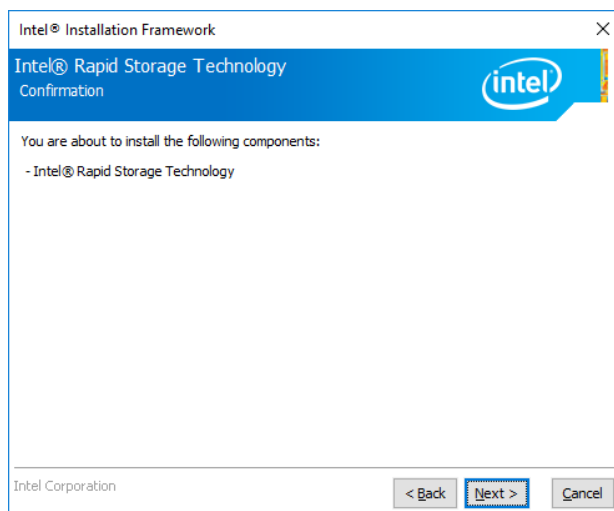
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Step 4. Click Next.



Step 6. Click Finish to complete setup.



Step 5. Click Next.

4.7 Install USB3.0 Driver

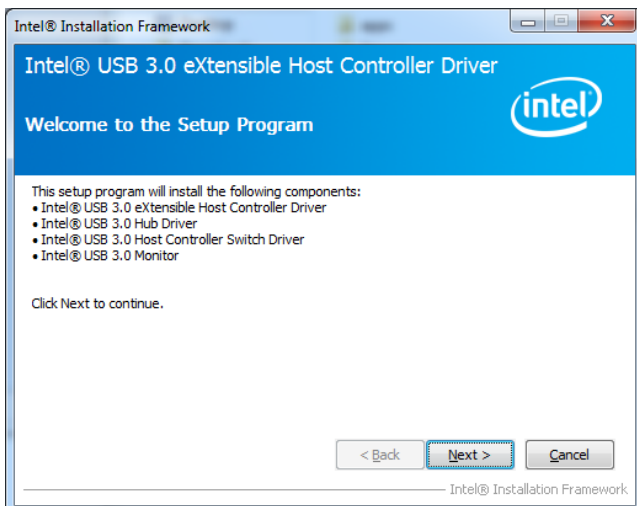
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Utility\EAX-H81P_USB3.0.



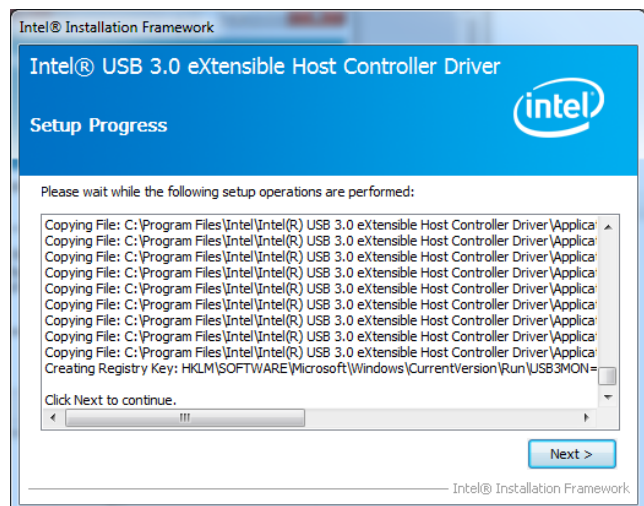
Note: The installation procedures and screen shots in this section are based on Windows 7 operating system.



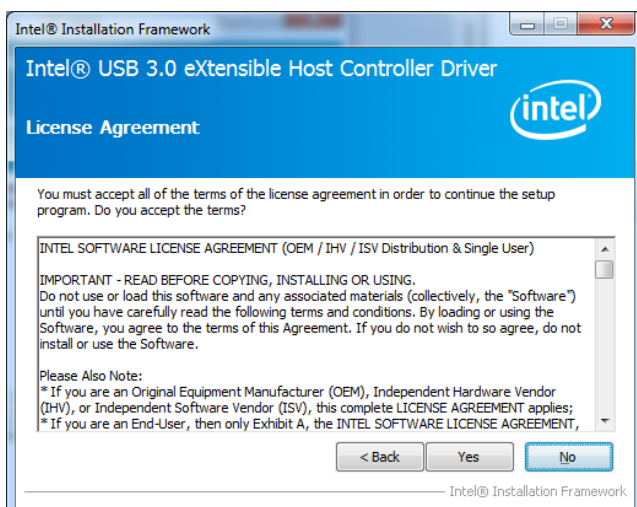
Step 3. Select **Next** to continue installation.



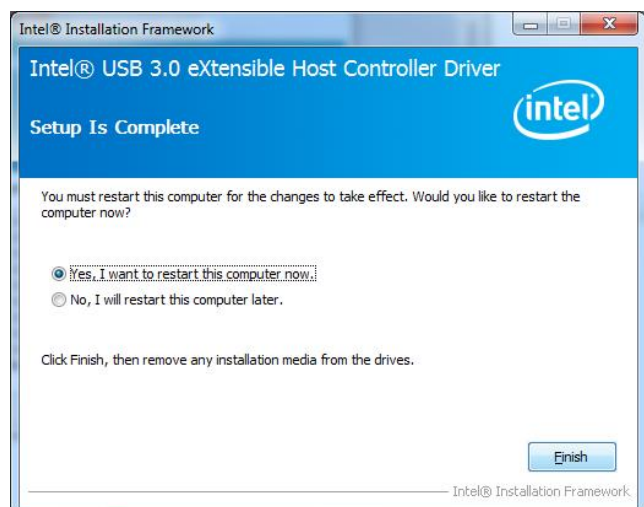
Step 1. Select **Next** to start setup.



Step 4. Click **Next**.

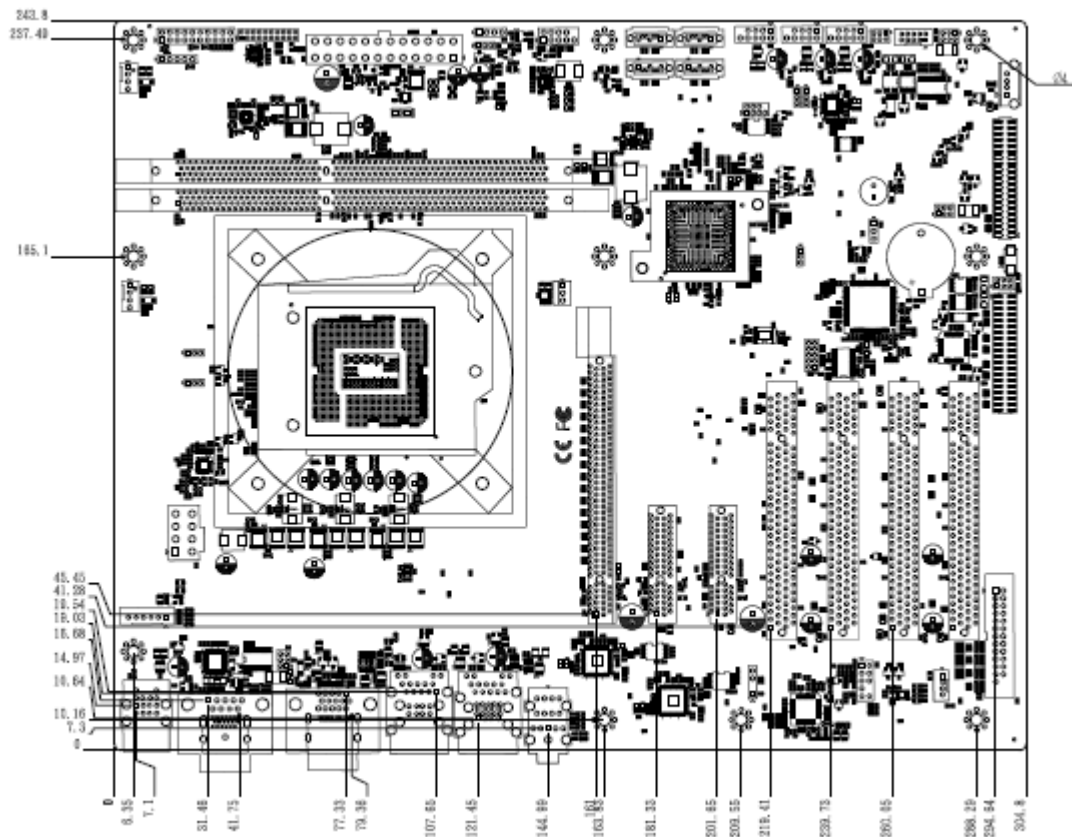


Step 2. Select **Yes** to the next step.

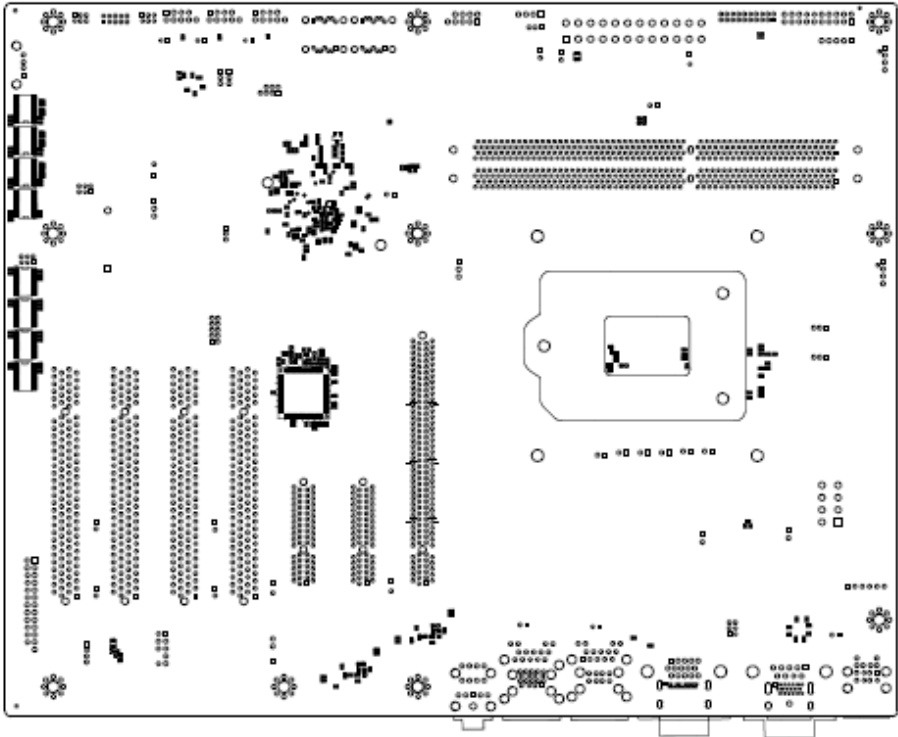


Step 5. Select **Finish** to complete Installation.

5. Mechanical Drawing



Unit: mm



Unit: mm

