EMX-BYT3

Intel ® Atom™ Celeron® J1900 D1 Processor Mini ITX Motherboard

User's Manual

2nd Ed –17 April 2019

Part No. E2047MXT301R

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.

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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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Avalue warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Avalue, or which have been subject to misuse, abuse, accident or improper installation. Avalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Avalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Avalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Avalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
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.

Content

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-BYT3 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	December 2017	Avalue	Initial Release
2nd	April 2019	Avalue	Update EMX-BYT3 Description

1.4 Manual Objectives

This manual describes in details Avalue Technology EMX-BYT3 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-BYT3 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	Onboard Intel® Celeron® Processor J1000 Series for Desktop Onboard Intel® Celeron® Processor N2000 Series for Mobile
BIOS	AMI uEFI BIOS, 64/128 Mbit SPI Flash ROM
I/O Chip	EC IT8528E
System Memory	2 x 204-pin DDR3L 1333MHz 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 only (SATA II and mSATA Switchable Through jumper) 1 x full size Mini PCI-e support WiFi or communication module or 1 x PCI-e x1 slot Switchable Through by switch IC & BIOS (either one) 1 x SIM card slot
S3/S4	Yes (S0/S3/S4/S5)
I/O	
USB	4 x USB 3.0, 2 x USB 2.0
GPIO	16-bits GPIO
Display	
Resolution	HDMI: 1920x1200 @60Hz VGA: 2560 x 1600 @ 60 Hz 2CH 18/24bits LVDS 1920 x 1080 Chrontel. CH7511B eDP to LVDS Converter HDMI +LVDS, HDMI+VGA, VGA+LVDS
Multiple Display	Dual Display
HDMI	1 x HDMI
LCD Interface	2CH 18/24bits LVDS 1920 x 1080
Audio	
AC97 Codec	Realtek ALC662 HD Audio Decoding Controller
Audio Amp	Realtek ALC105 3W x 2
Audio Codec	Realtek ALC662 HD Audio Decoding Controller with 3W Amplifier
Ethernet	
LAN Chip	2 x Intel I211AT PCI-Express Gigabit Ethernet
Ethernet Interface	10/100/1000 Gigabit Ethernet

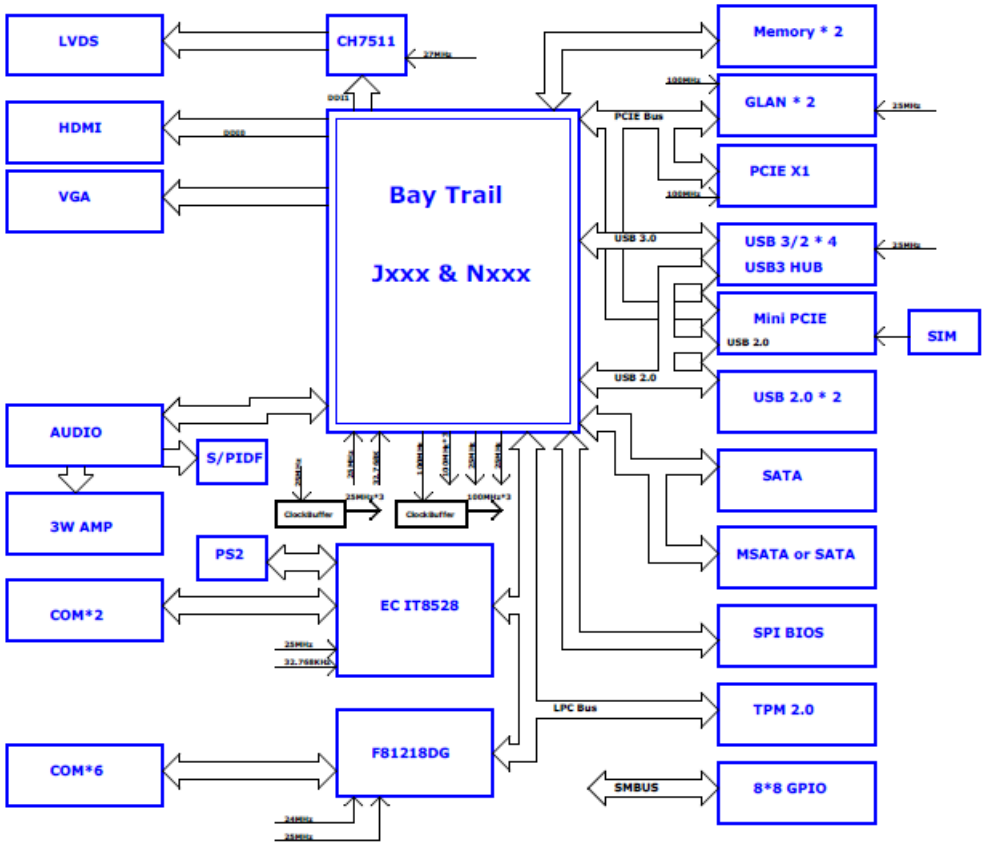
Internal I/O Connectors	
Fan	1 x 1 x 4 pin, pitch 2.54mm CPU fan connector with smart fan function supported
Buzzer	Yes
CMOS Battery	1 x horizontal type battery connector (Battery cable 170mm length)
Power ON	1 x 2 x 5 pin, pitch 2.54mm connector for front panel 1 1 x 2 x 6 pin, pitch 2.54mm connector for front panel 2
Audio	1 x 2 x 5 pin, pitch 2.54mm connector for front Audio
Internal I/O Connector	Optional Onboard Infineon SLB9665 support TPM 2.0(co-lay TPM 1.2) COM 1 & 2: Support 422/485 selected by BIOS selection - 2 x 2 x 3 pin, pitch 2.00mm connector, support RS422/485 connector, Pin 5 with +5V COM 1~4 - 1 x 2 x 20 pin, pitch 2.00mm connector for COM 1~4 support RS-232 connector COM 5~8 - 1 x 2 x 20 pin, pitch 2.00mm connector for COM 5~8: support RS-232 connector Storage: - 1 x full size Mini PCI-e support mSATA only (SATA II and mSATA Switchable Through jumper) - 2 x SATA power connectors 1 x full size Mini PCI-e support WiFi or communication module or 1 x PCI-e x1 slot Switchable Through by switch IC & BIOS (either one) 1 x SIM card Slot 1 x 2 x 5 pin, pitch 2.54mm connector for 2 USB 2.0 1 x 2 x 10 pin, pitch 2.00mm connector for GPIO: 16 bits & +3.3S Level SMBus 1 x 2 x 4 pin, pitch 2.00mm connector for BIOS SPI 1 x 2 x 4 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 6 pin, pitch 2.54mm connector for front panel 2 1 x 2 x 20 pin, pitch 1.25mm connector for LVDS (must be using DF13-2S-1.25C connector) 1 x 1 x 5 pin, pitch 2.00mm Wafer connector for LCD inverter backlight connector (5V/12V) 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 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
Mechanical & Environmental	
Power Requirement	DC in +12 ~ 24V
ACPI	Single power ATX Support S0, S3, S4, S5
Power 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)	6.7" x 6.7" (170mm x 170mm)
Weight	0.4 kg
OS Support	BIOS Support: 1. Win7 64bit CSM mode 2. Win 10 UEFI mode

Note: Specifications are subject to change without notice.

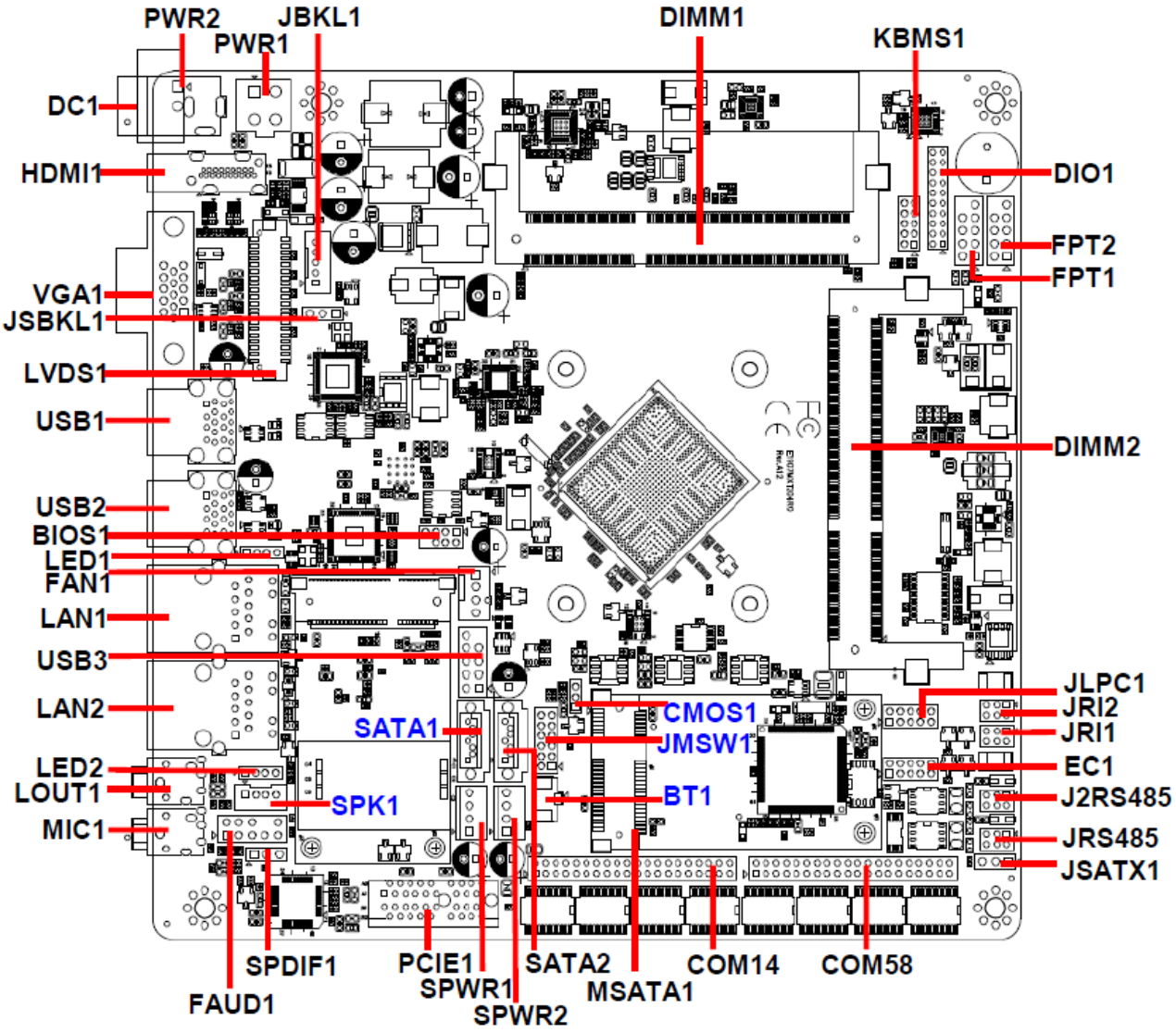
1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of EMX-BYT3.



2. Hardware Configuration

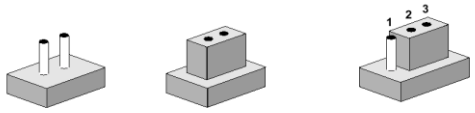
2.1 Product Overview



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.



Open Closed Closed 2-3

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

Open Closed Closed 2-3

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	Serial port 1/2 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

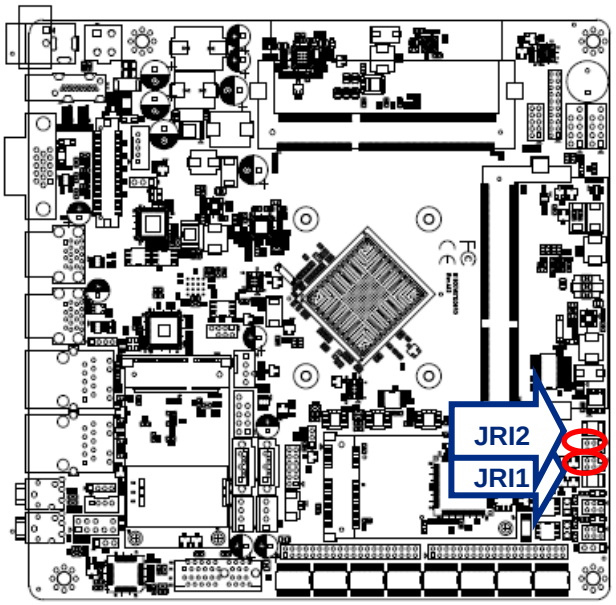
Connectors

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	

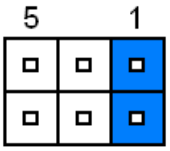
FAUD1	Front Audio connector	5 x 2 header, pitch 2.54 mm
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
BIOS1	BIOS connector	4 x 2 header, pitch 2.00 mm
COM14	Serial Port 1~4 connector	20 x 2 header, pitch 2.00mm
COM58	Serial Port 5~8 connector	20 x 2 header, pitch 2.00mm
DIO1	General purpose I/O connector	10 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	USB connector 3	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	
JRS485	Serial Port 1 RS485/422 Mode connector	3 x 2 header, pitch 2.00 mm
J2RS485	Serial Port 2 RS485/422 Mode connector	3 x 2 header, pitch 2.00 mm
JLPC1	LPC connector	5 x 2 header, pitch 2.00mm
DC1	DC Power-in connector	
PWR1	Power connector 1	2 x 2 wafer, pitch 4.20mm
PWR2	Power connector 2	2 x 1 terminal, pitch 3.81mm
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
HDMI1	HDMI connector	
LOUT1	Line-out audio jack	
MIC1	Mic-in audio jack	
VGA1	VGA connector	

2.3 Setting Jumpers & Connectors

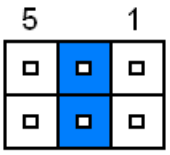
2.3.1 Serial port 1/2 pin9 signal select (JRI1/JRI2)



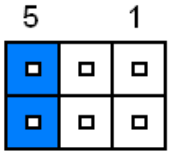
Ring*



+5V

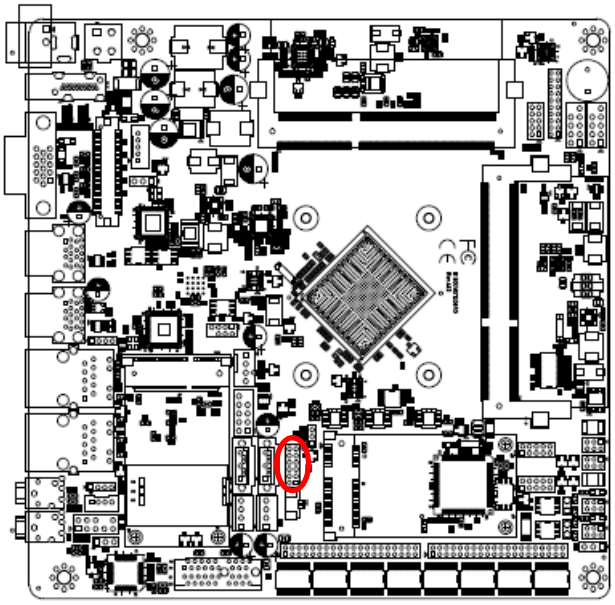


+12V



*** Default**

2.3.2 SATA2/MSATA1 mPCIe slot selector (JMSW1)



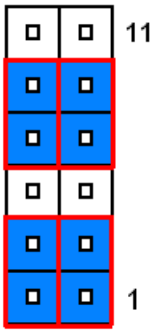
*** Default**

Note:

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

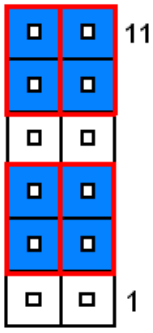
SATA2 Connector*

(SATA2 Connector enabled, MSATA1 slot Disabled)

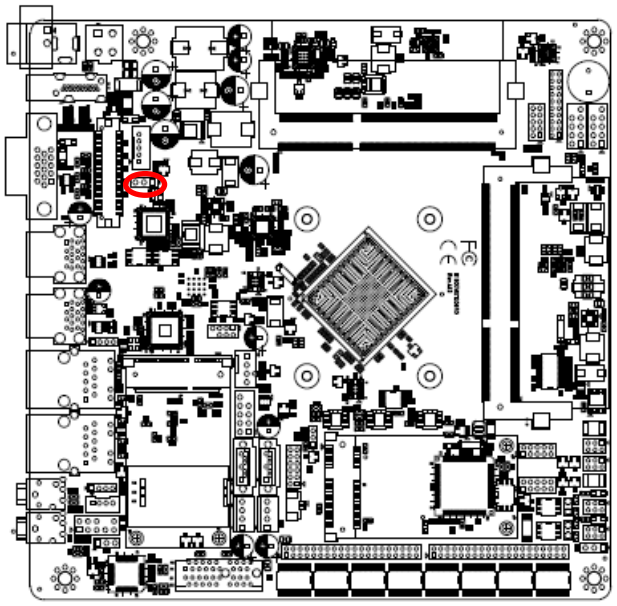


MSATA1 mPCIe slot

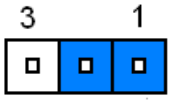
(MSATA1 slot enabled, SATA2 Connector Disabled)



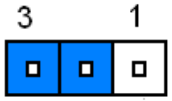
2.3.3 LVDS Back Light power selection (JSBKL1)



PWM Mode*(Max current: 2A)

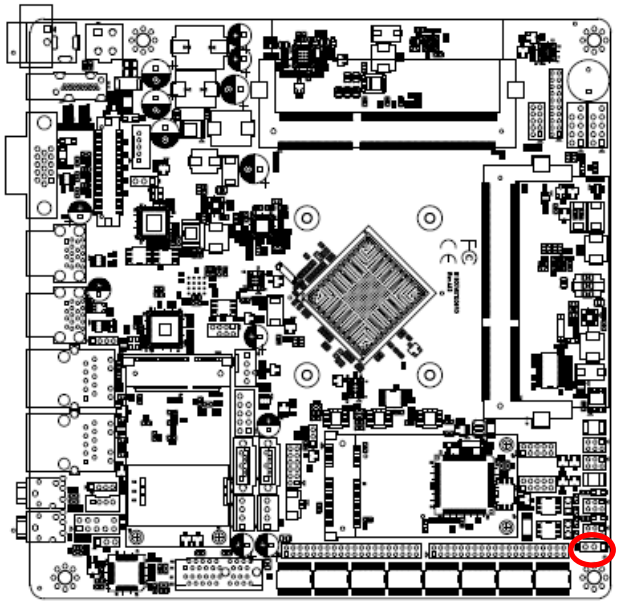


DC Mode(Max current: 2A)

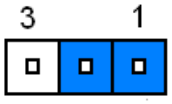


*** Default**

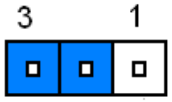
2.3.4 AT/ATX Power Mode Select (JSATX1)



ATX*

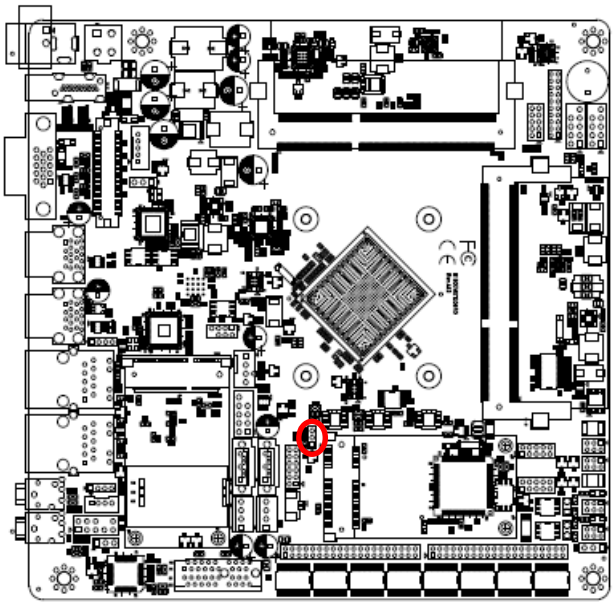


AT

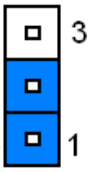


*** Default**

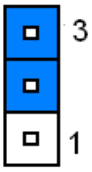
2.3.5 Clear CMOS (CMOS1)



Protect*

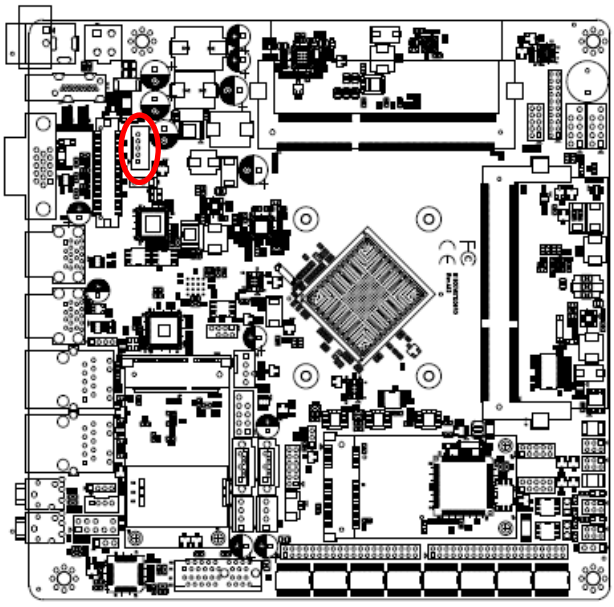


Clear CMOS



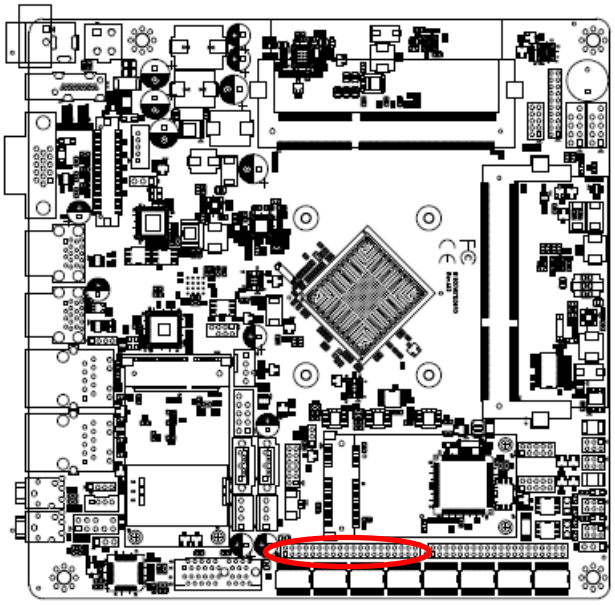
*** Default**

2.3.6 LCD Inverter connector (JBKL1)

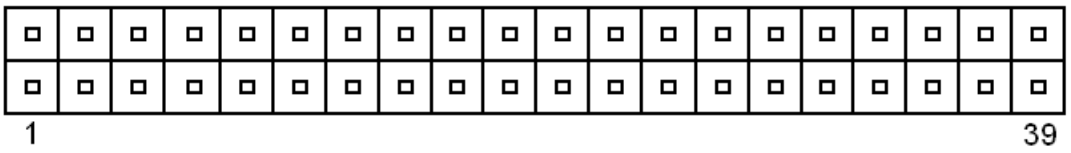


PIN	Signal	Max current
5	+5V	2A
4	LVDS_BKLADJ	
3	LVDS_BKLTEN	
2	GND	
1	+12V	2A

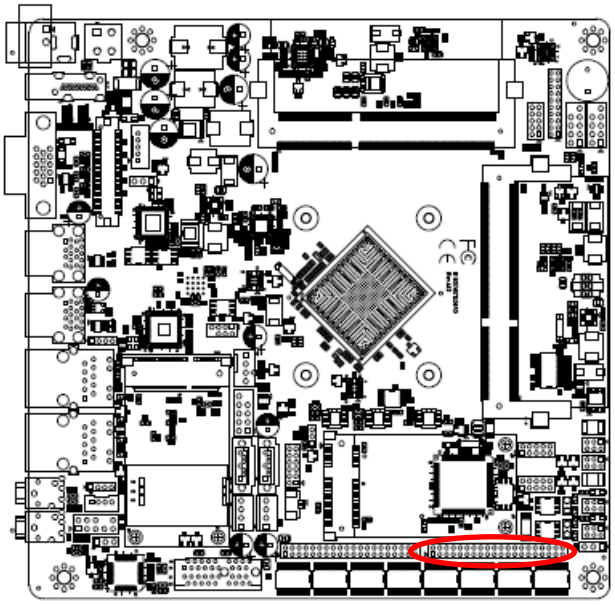
2.3.7 Serial port 1~4 connector (COM14)



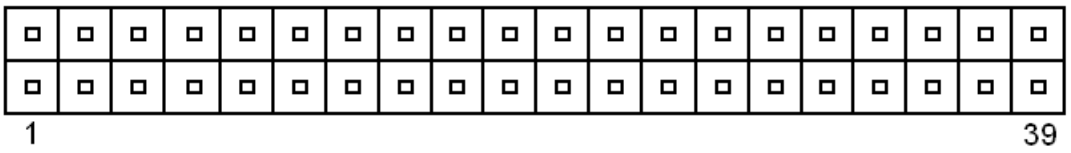
Signal	PIN	PIN	Signal
NDCDA#	1	2	NRXDA
NTXDA	3	4	NDTRA#
GND	5	6	NDSRA#
NRTSA#	7	8	NCTSA#
NRIA#	9	10	NC
NDCDB#	11	12	NRXDB
NTXDB	13	14	NDTRB#
GND	15	16	NDSRB#
NRTSB#	17	18	NCTSB#
NRIB#	19	20	NC
NDCDC#	21	22	NRXDC
NTXDC	23	24	NDTRC#
GND	25	26	NDSRC#
NRTSC#	27	28	NCTSC#
NRIC#	29	30	NC
NDCDD#	31	32	NRXDD
NTXDD	33	34	NDTRD#
GND	35	36	NDSRD#
NRTSD#	37	38	NCTSD#
NRID#	39	40	NC



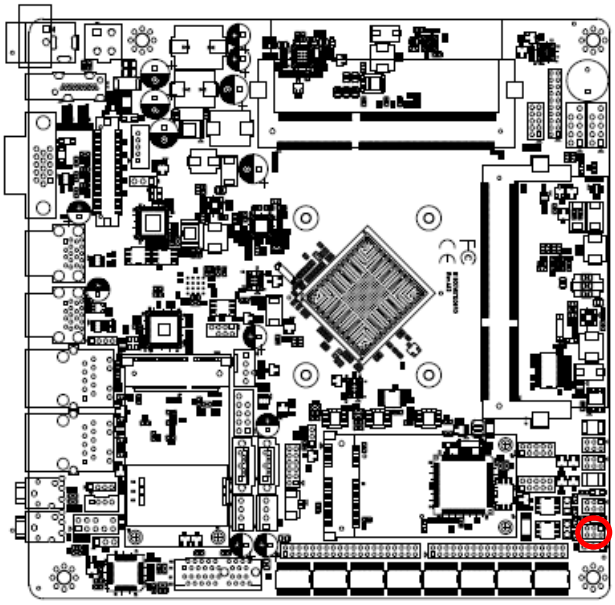
2.3.8 Serial port 5~8 connector (COM58)

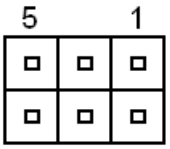


Signal	PIN	PIN	Signal
NDCDE#	1	2	NRXDE
NTXDE	3	4	NDTRE#
GND	5	6	NDSRE#
NRTSE#	7	8	NCTSE#
NRIE#	9	10	NC
NDCDF#	11	12	NRXDF
NTXDF	13	14	NDTRF#
GND	15	16	NDSRF#
NRTSF#	17	18	NCTSF#
NRIF#	19	20	NC
NDCD7#	21	22	NRXD7
NTXD7	23	24	NDTR7#
GND	25	26	NDSR7#
NRTS7#	27	28	NCTS7#
NRI7#	29	30	NC
NDCD8#	31	32	NRXD8
NTXD8	33	34	NDTR8#
GND	35	36	NDSR8#
NRTS8#	37	38	NCTS8#
NRI8#	39	40	NC



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





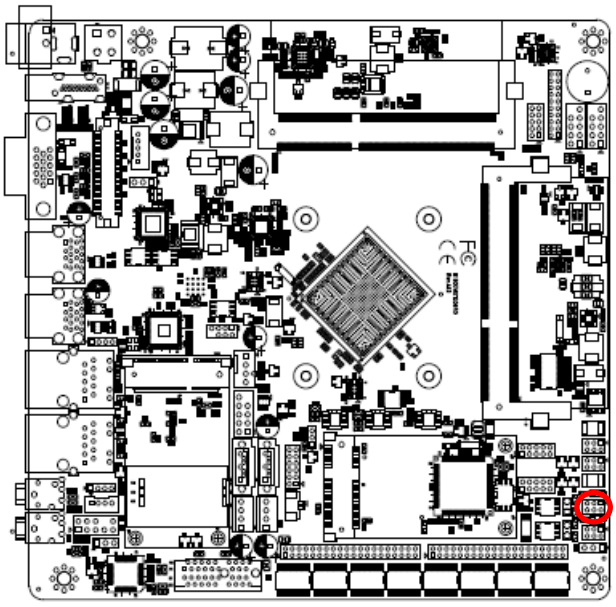
RS-422

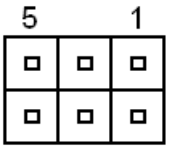
Signal	PIN	PIN	Signal
GND	6	5	+5V
422RX+	4	3	422TX+
422RX-	2	1	422TX-

RS-485

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

2.3.10 Serial Port 2 RS485/422 Mode connector (J2RS485)





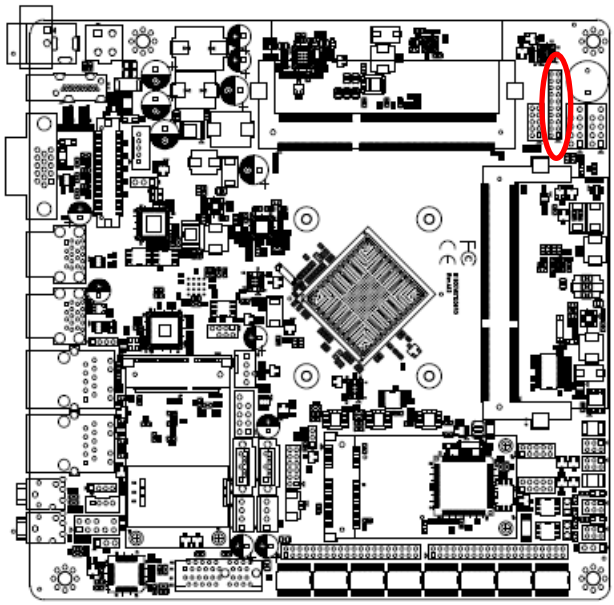
RS-422

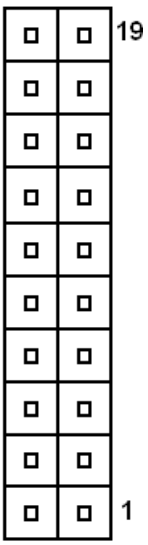
Signal	PIN	PIN	Signal
GND	6	5	+5V
422RX+	4	3	422TX+
422RX-	2	1	422TX-

RS-485

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

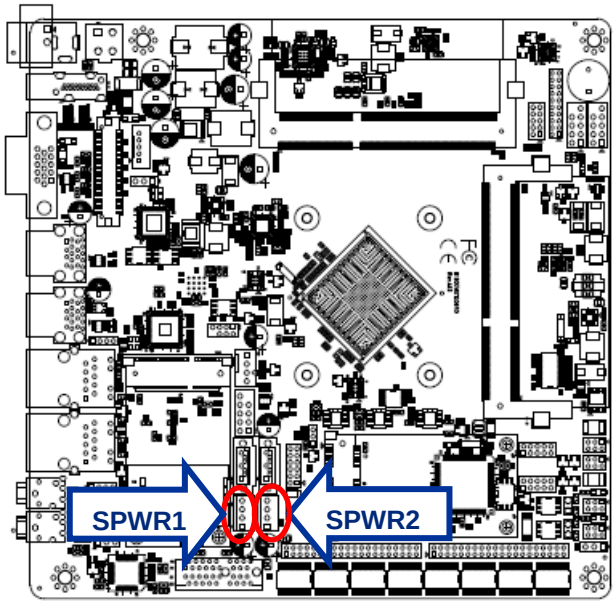
2.3.11 General purpose I/O connector (DIO1)

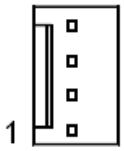




Signal	PIN	PIN	Signal
+5V	20	19	GND
SMB_DATA	18	17	SMB_CLK
DO7	16	15	DI7
DO6	14	13	DI6
DO5	12	11	DI5
DO4	10	9	DI4
DO3	8	7	DI3
DO2	6	5	DI2
DO1	4	3	DI1
DO0	2	1	DI0

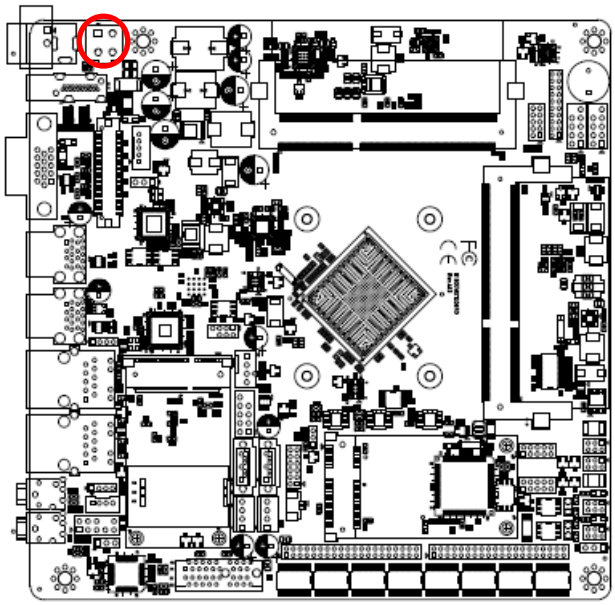
2.3.12 SATA Power connector 1/2 (SPWR1/2)





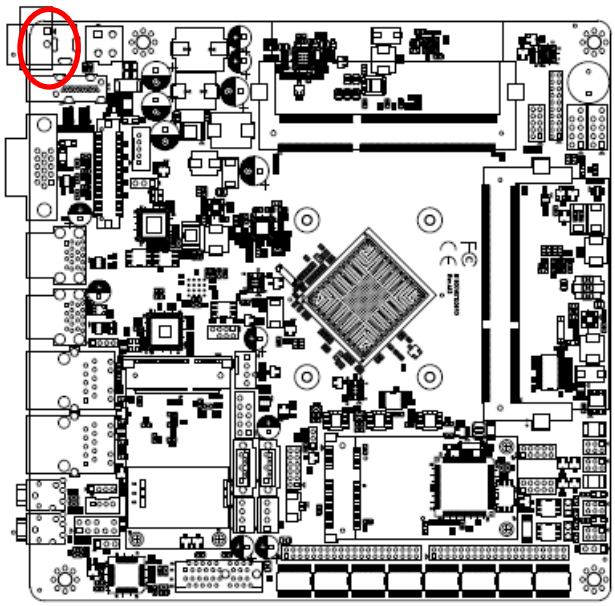
PIN	Signal	Max current
4	+12V	3A
3	GND	
2	GND	
1	+5V	3A

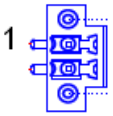
2.3.13 Power connector 1 (PWR1)



Signal	PIN	PIN	Signal
GND	1	2	GND
+VIN_12-24V	3	4	+VIN_12-24V

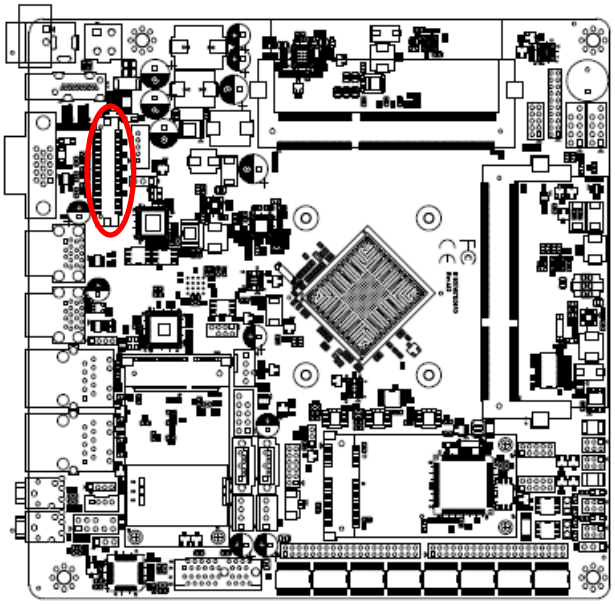
2.3.14 Power connector 2 (PWR2)

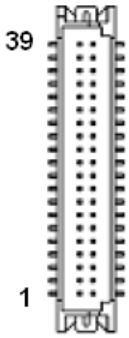




Signal	PIN
+VIN_12-24V	1
GND	2

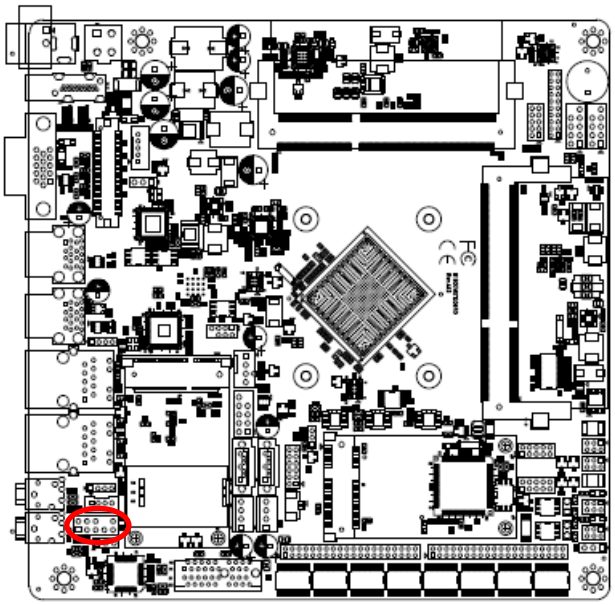
2.3.15 LVDS connector (LVDS1)

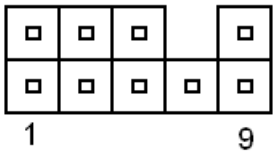




Signal	PIN	PIN	Signal
+12V	39	40	+12V
GND	37	38	GND
LVDS_ CLK2N	35	36	LVDS_ CLK1N
LVDS_CLK2P	33	34	LVDS_CLK1P
GND	31	32	GND
LVDS_DATAN7	29	30	LVDS_DATAN6
LVDS_DATAP7	27	28	LVDS_DATAP6
GND	25	26	GND
LVDS_DATAN5	23	24	LVDS_DATAN4
LVDS_DATAP5	21	22	LVDS_DATAP4
GND	19	20	GND
LVDS_DATAN3	17	18	LVDS_DATAN2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

2.3.16 Front Audio connector (FAUD1)



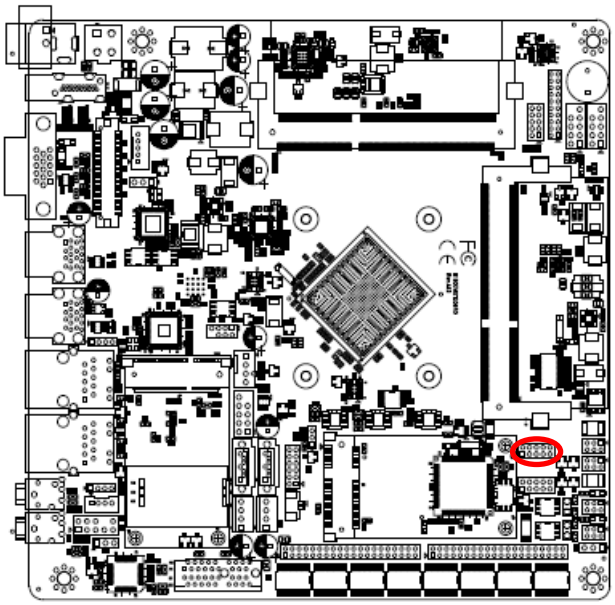


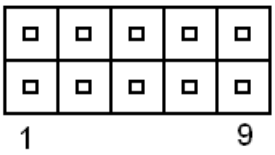
Signal	PIN	PIN	Signal
MIC2_L	1	2	GND
MIC2_R	3	4	AUD_FRONT_DET
LINE2_R	5	6	MIC2_JD
SENSE_B	7		
LINE2_L	9	10	LINE2_JD

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

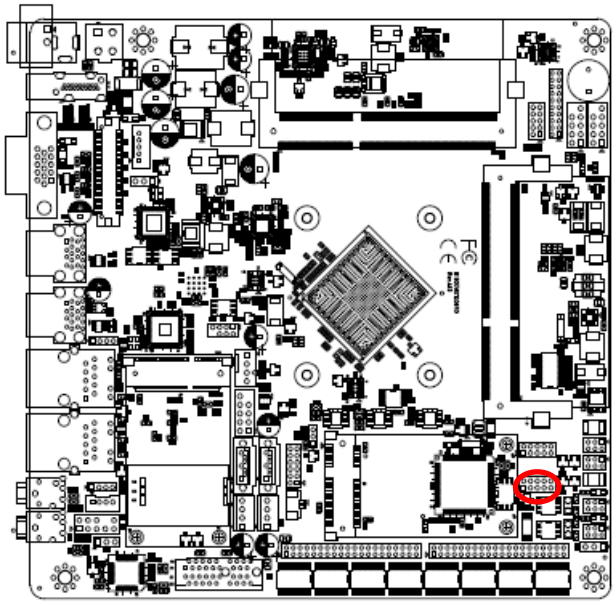
2.3.17 LPC connector (JLPC1)

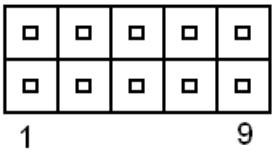




Signal	PIN	PIN	Signal
LPC_AD0	1	2	+3.3V
LPC_AD1	3	4	PLT_RST#
LPC_AD2	5	6	LPC_FRAME#
LPC_AD3	7	8	LPC_DEG_CLK
LPC_SERIRQ	9	10	GND

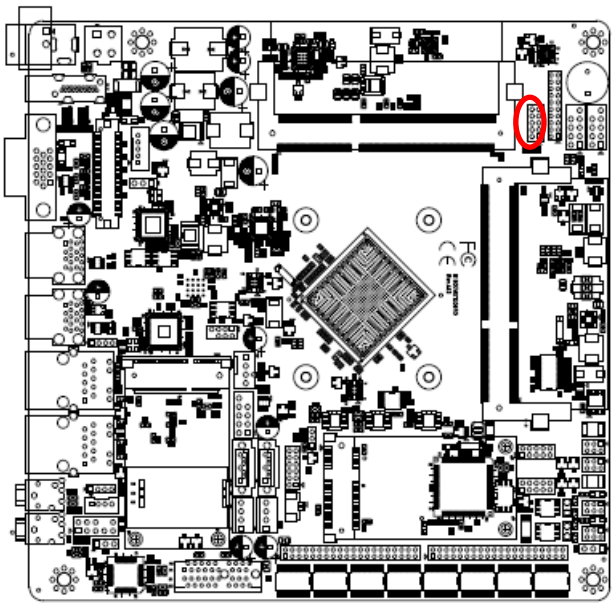
2.3.18 EC_Program (EC1)

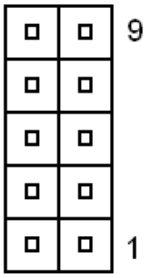




Signal	PIN	PIN	Signal
+3.3A_ECSPI	1	2	GND
EC_FSCE#	3	4	EC_FSCK
EC_FSMIOSO	5	6	EC_FSMOSI
EC_HOLD#	7	8	NC
EC_SMCLK_DBG	9	10	EC_SMDATA_DBG

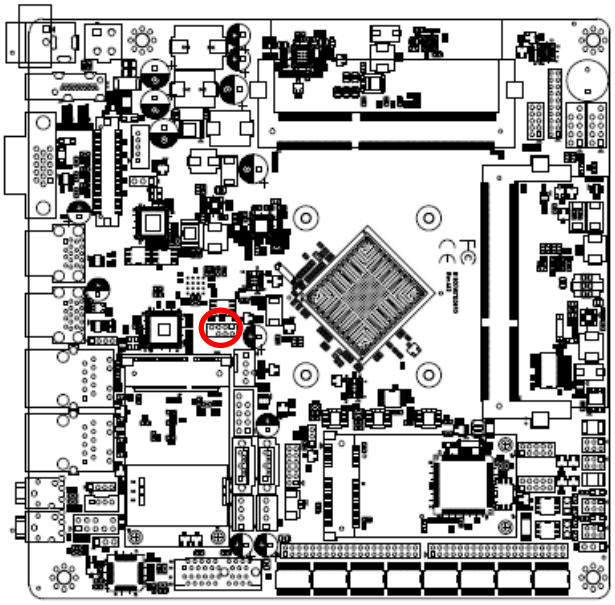
2.3.19 PS/2 keyboard & mouse connector (KBMS1)

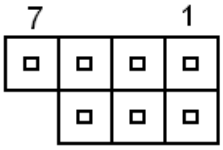




Signal	PIN	PIN	Signal
NC	10	9	NC
NC	8	7	NC
MSCK	6	5	MSDAT
+5VSB	4	3	GND
KBCK	2	1	KBDAT

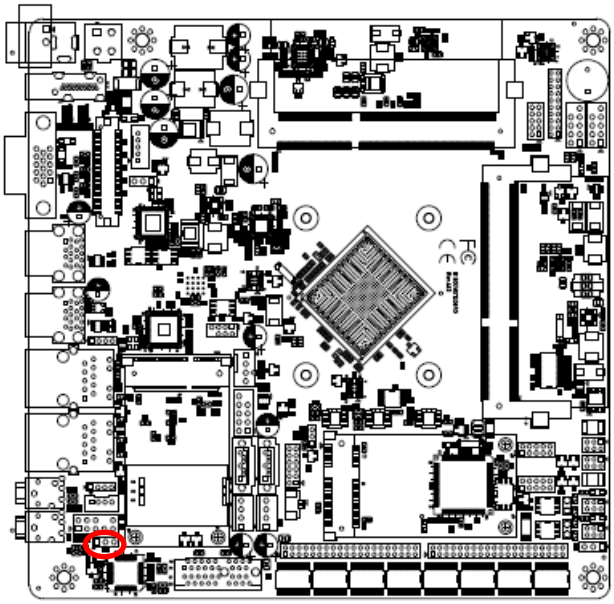
2.3.20 BIOS connector (BIOS1)

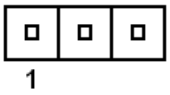




Signal	PIN	PIN	Signal
+V1.8A_SPI	1	2	GND
SPI_ROM_CS0#	3	4	SPI_ROM_CLK
SPI_ROM_R_MISO	5	6	SPI_ROM_MOSI
SPI_ROM_HOLD#	7		

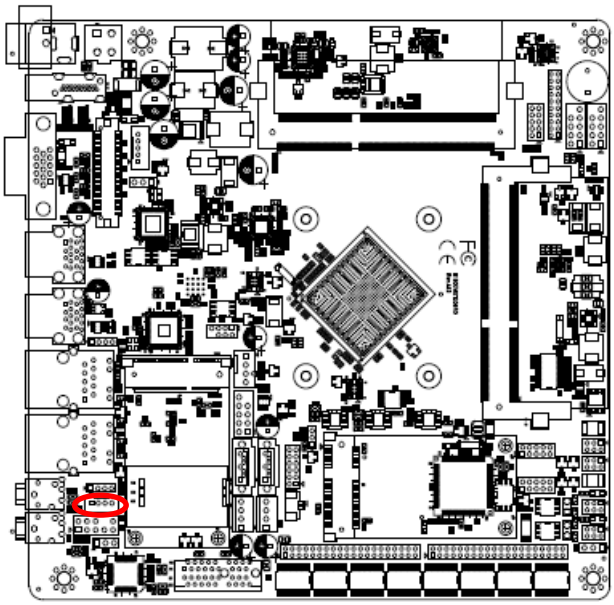
2.3.21 Sony/Philips Digital Interface (SPDIF1)

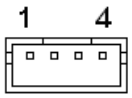




Signal	PIN
+5V	1
SPDIF_OUT	2
GND	3

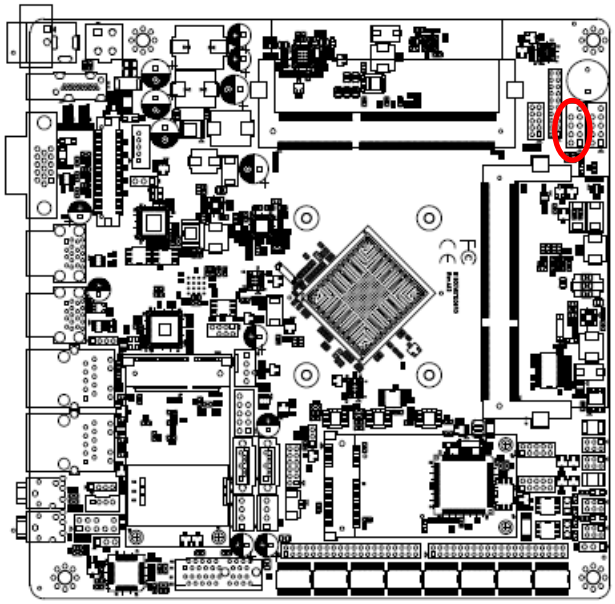
2.3.22 Speaker connector (SPK1)

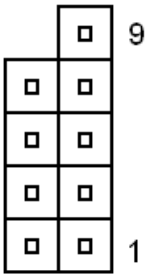




Signal	PIN
LSPK+	1
LSPK-	2
RSPK+	3
RSPK-	4

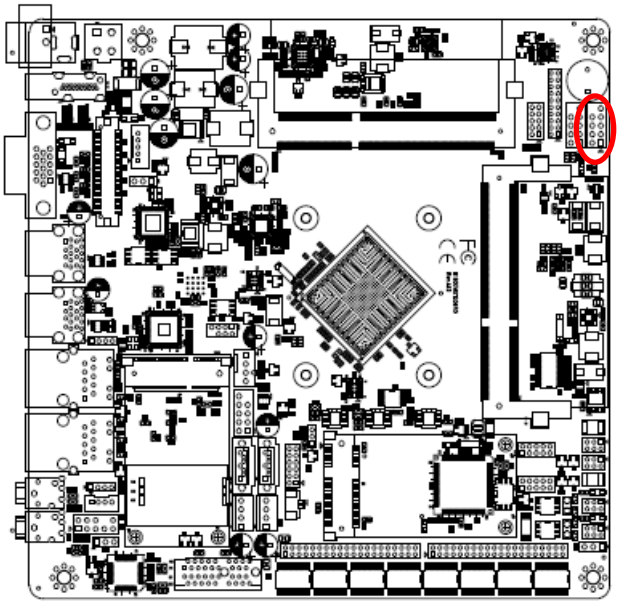
2.3.23 Miscellaneous setting connector 1 (FPT1)

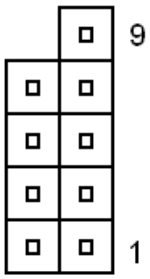




Signal	PIN	PIN	Signal
		9	NC
-PWR_BNT	8	7	-Reset
+PWR_BNT	6	5	+Reset
-PWE_LED	4	3	-HD_LED
+PWR_LED	2	1	+HD_LED

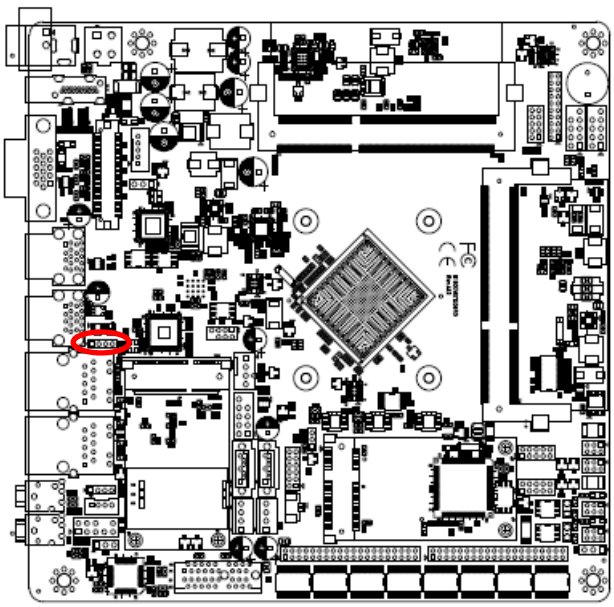
2.3.24 Miscellaneous setting connector 2 (FPT2)

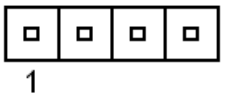




Signal	PIN	PIN	Signal
		9	NC
GND	8	7	Speaker-
BLK_DN	6	5	NC
BLK_UP	4	3	NC
BLK_VR(10K)	2	1	Speaker+

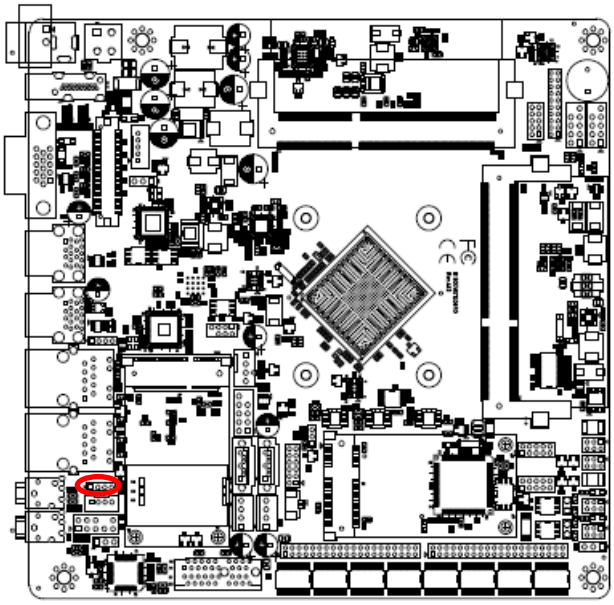
2.3.25 LED indicator connector 1 (LED1)

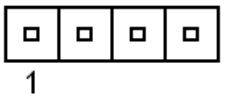




Signal	PIN
L1_ACT_P	1
L1_ACT_N	2
L1_100#_LED	3
L1_1000#_LED	4

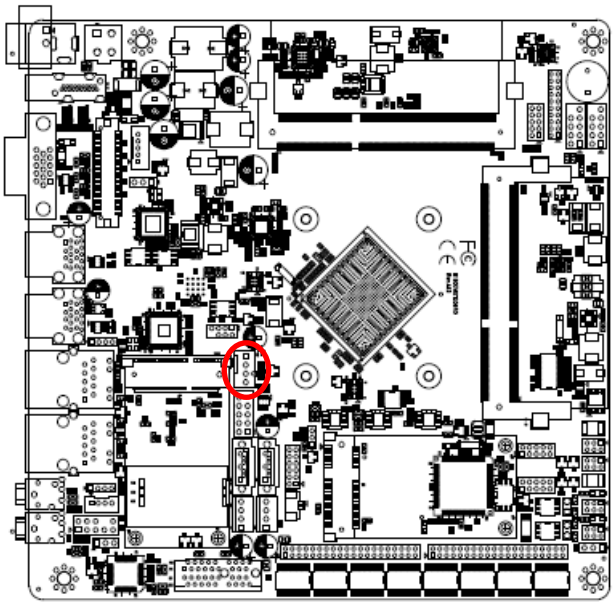
2.3.26 LED indicator connector 2 (LED2)

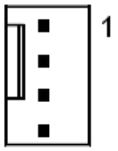




Signal	PIN
L2_ACT_P	1
L2_ACT_N	2
L2_100#_LED	3
L2_1000#_LED	4

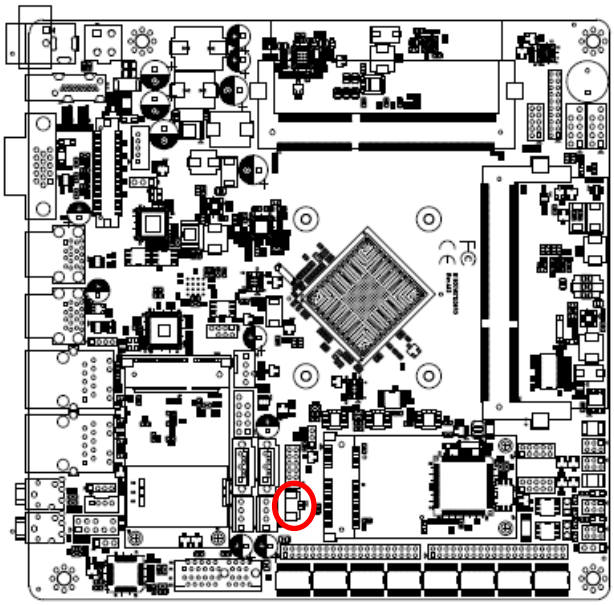
2.3.27 CPU fan connector (FAN1)

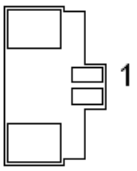




Signal	PIN
GND	1
+12V	2
CPU_FANIN	3
CPU_FANOUT	4

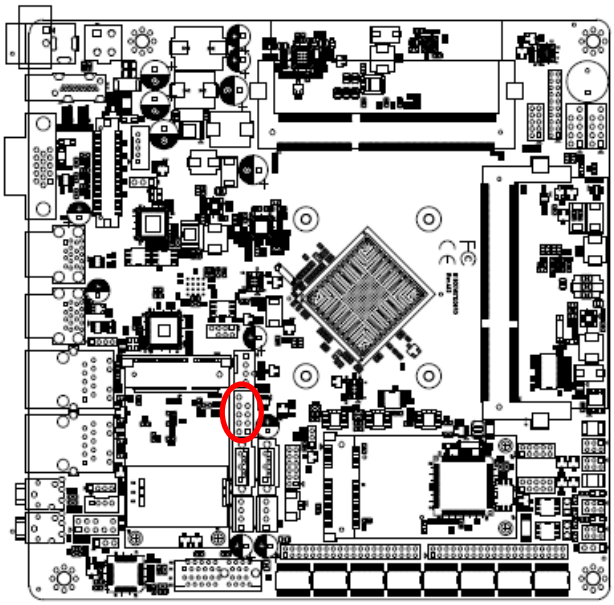
2.3.28 Battery connector (BT1)

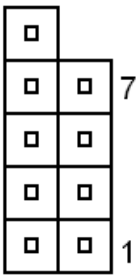




Signal	PIN
+3.3VSB	1
GND	2

2.3.29 USB connector 3 (USB3)





Signal	PIN	PIN	Signal
NC	10		
GND	8	7	GND
USB_DP3	6	5	USB_DP2
USB_DN3	4	3	USB_DN2
+V5A_USB23	2	1	+V5A_USB23

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 <Enter> 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.

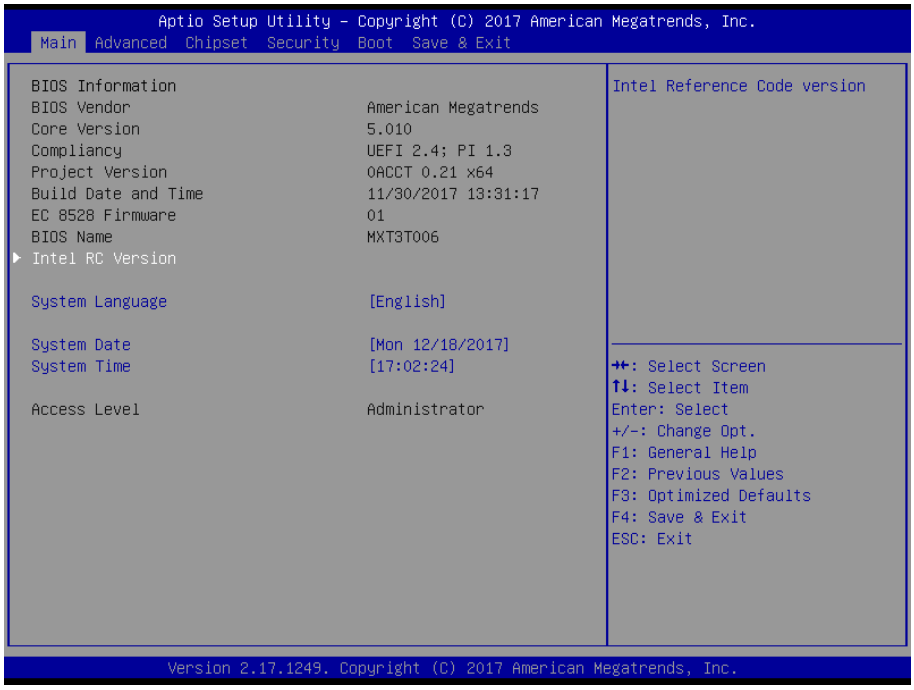
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance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

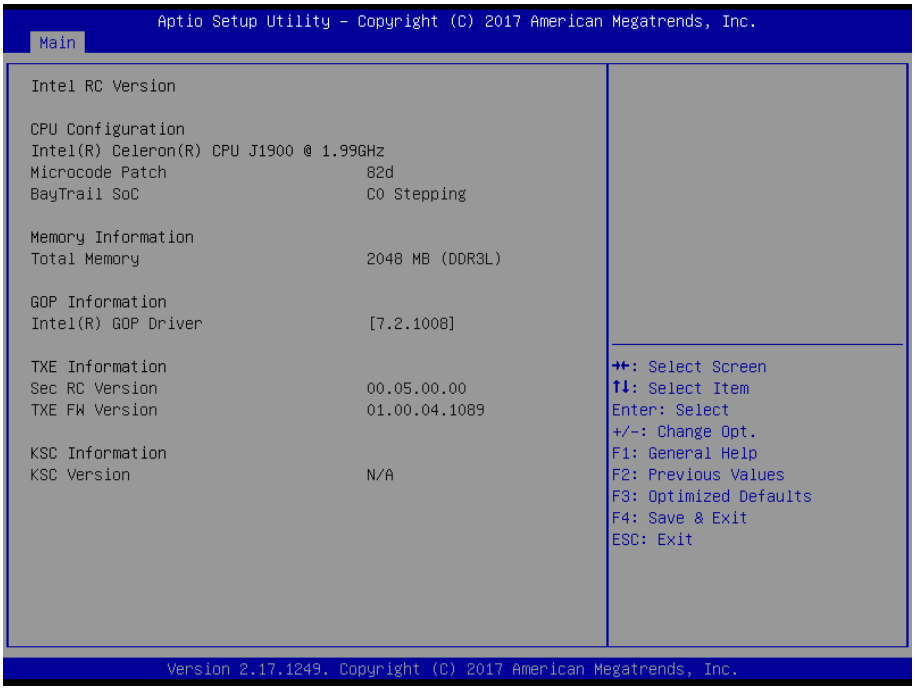
3.6 BIOS setup

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.

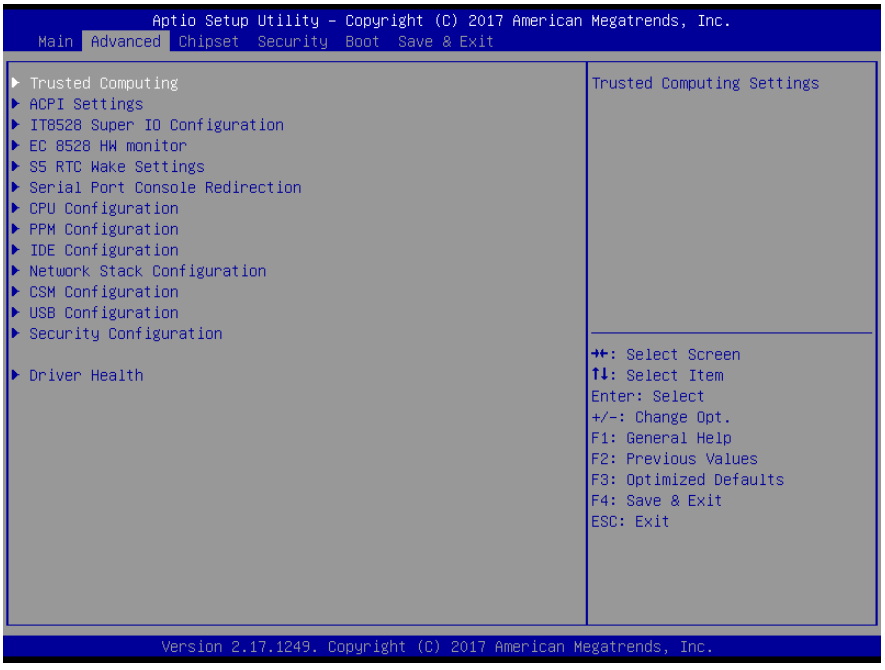
3.6.1.3 System Time

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

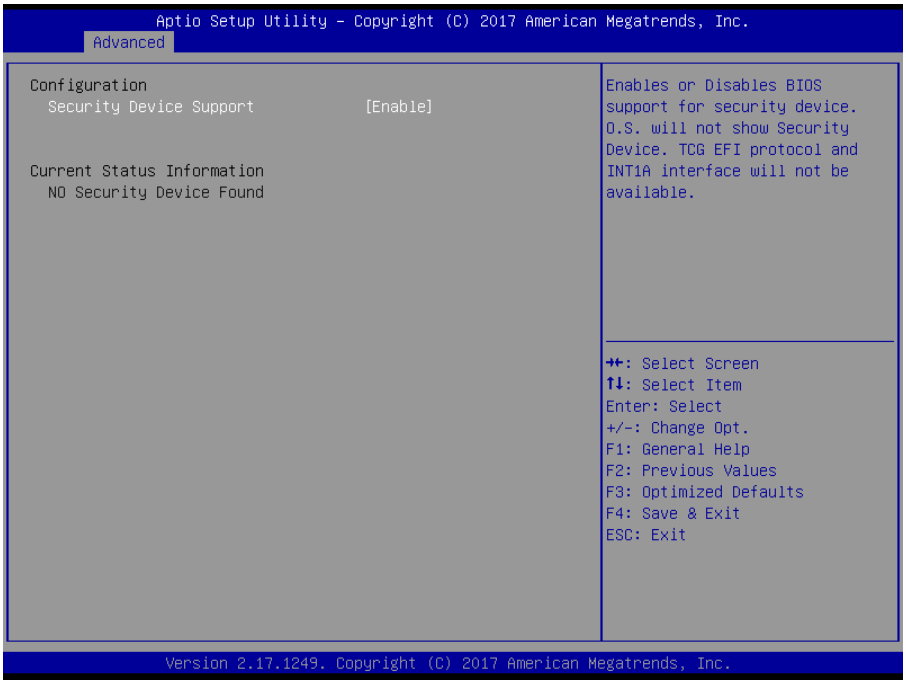
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

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.

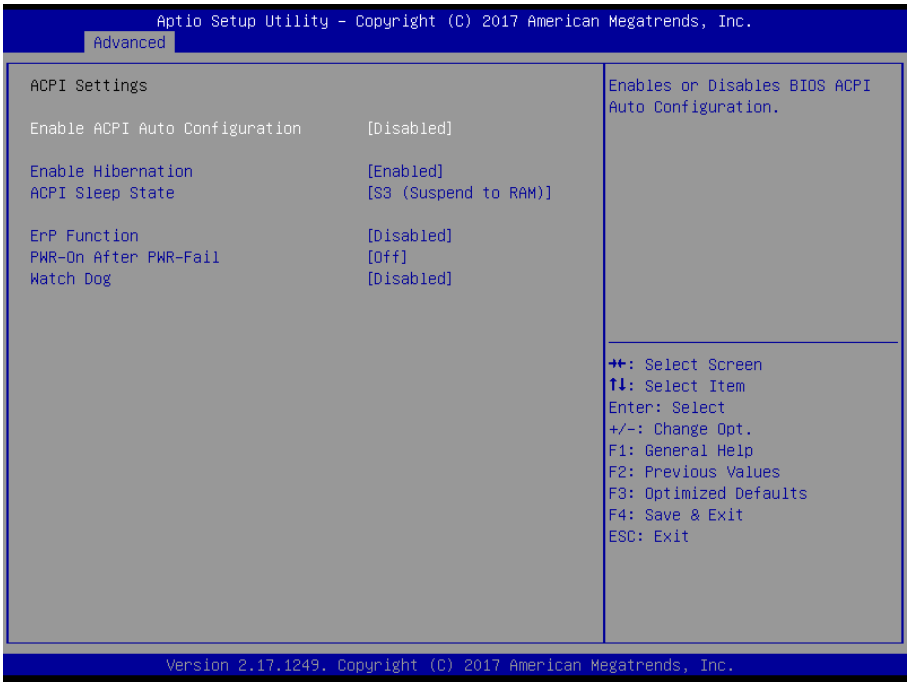


3.6.2.1 Trusted Computing



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.

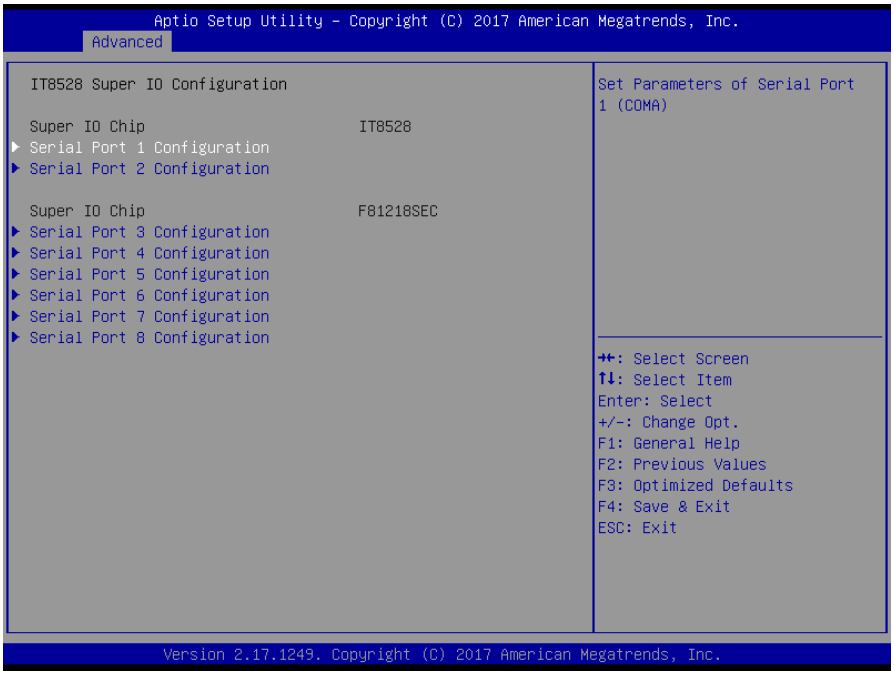
3.6.2.2 APCI Settings



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.

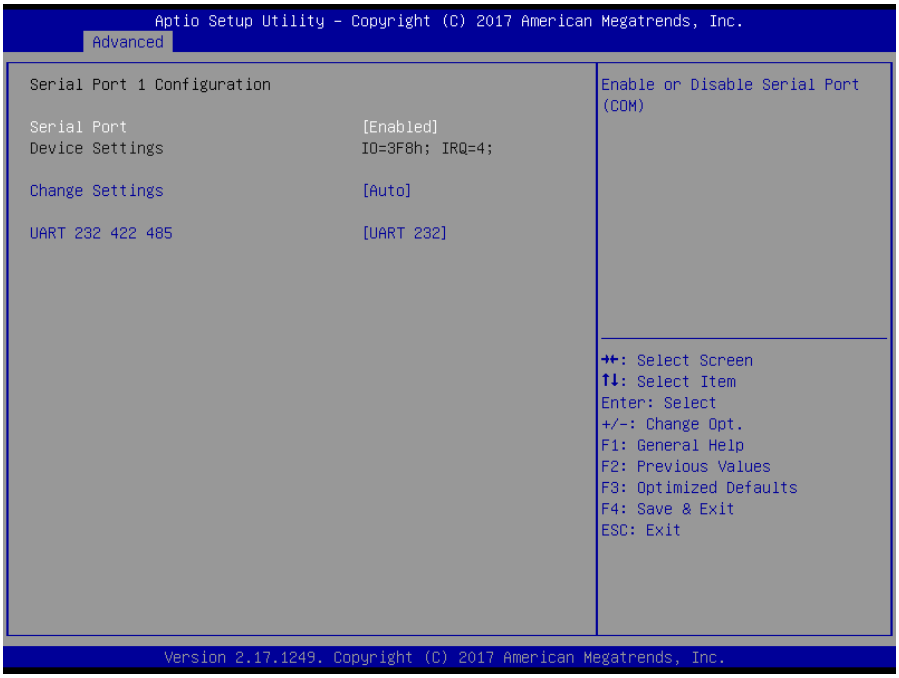
3.6.2.3 IT8528 Super IO Configuration

You can use this item to set up or change the IT8528 Super IO configuration for serial ports. Please refer to 3.6.2.3.1~ 3.6.2.3.6 for more information.



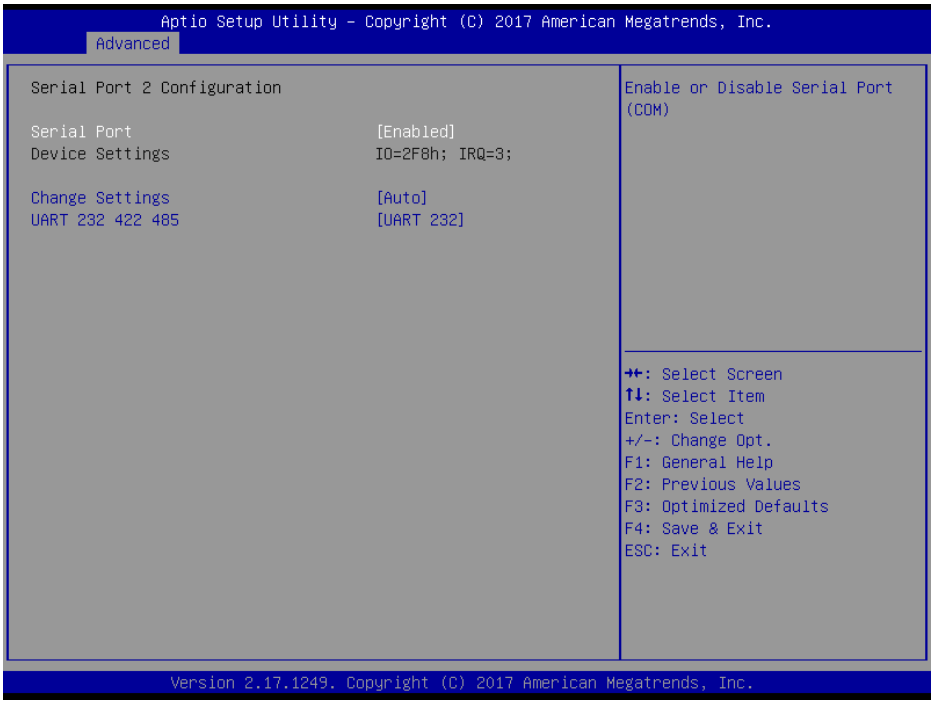
Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMA).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMB).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COMC).
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMD).
Serial Port 7 Configuration	Set Parameters of Serial Port 7 (COME).
Serial Port 8 Configuration	Set Parameters of Serial Port 8 (COMF).

3.6.2.3.1 Serial Port 1 Configuration



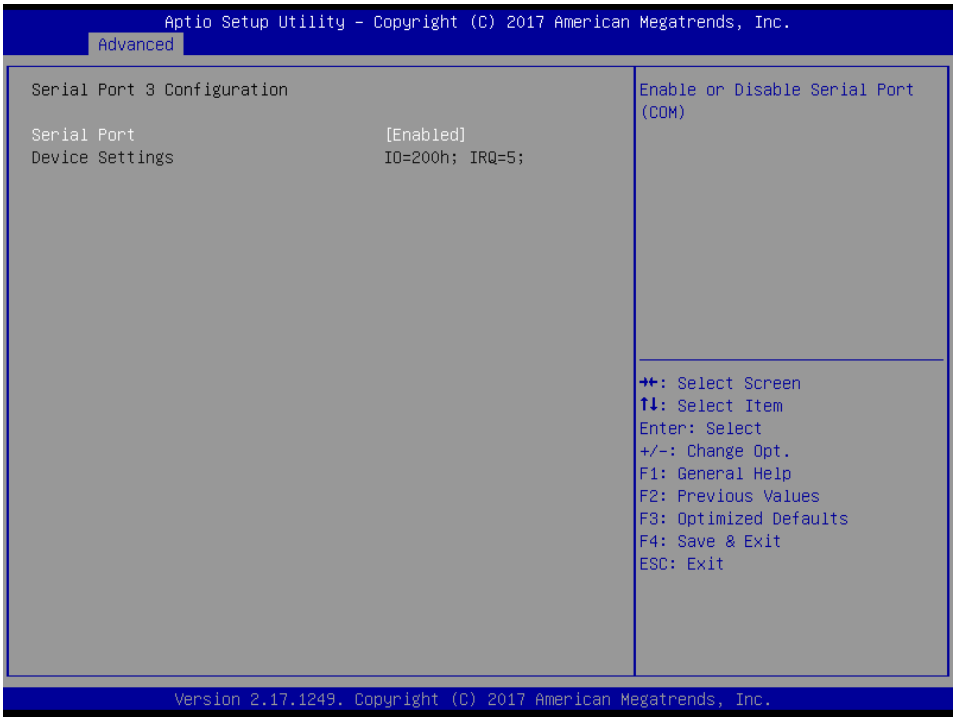
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select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

3.6.2.3.2 Serial Port 2 Configuration



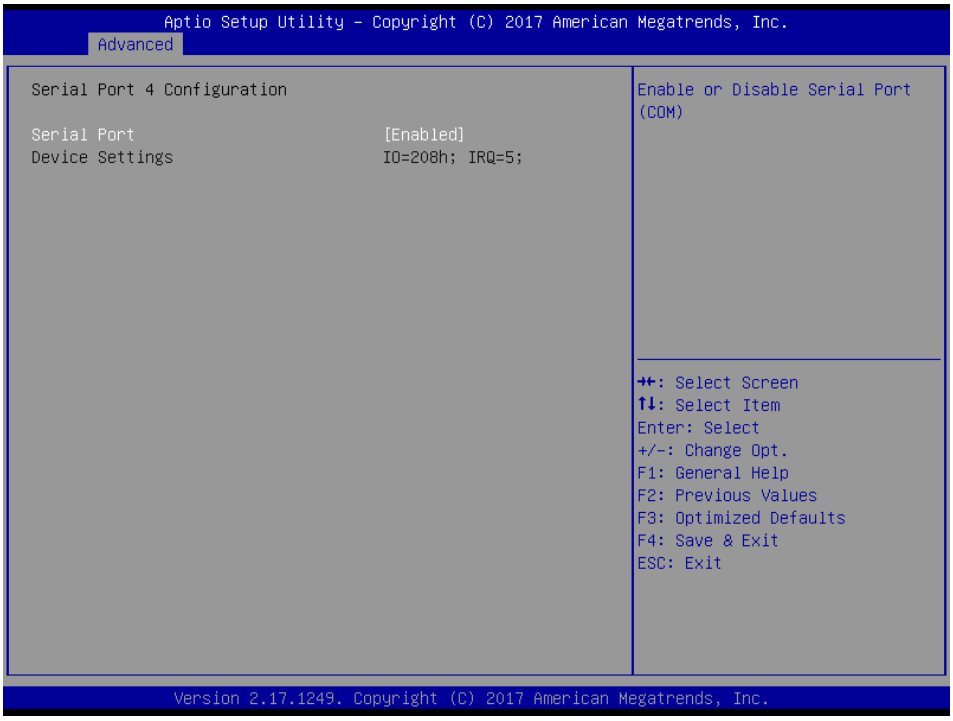
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).
Change Settings	Auto**[Default]** IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select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

3.6.2.3.3 Serial Port 3 Configuration



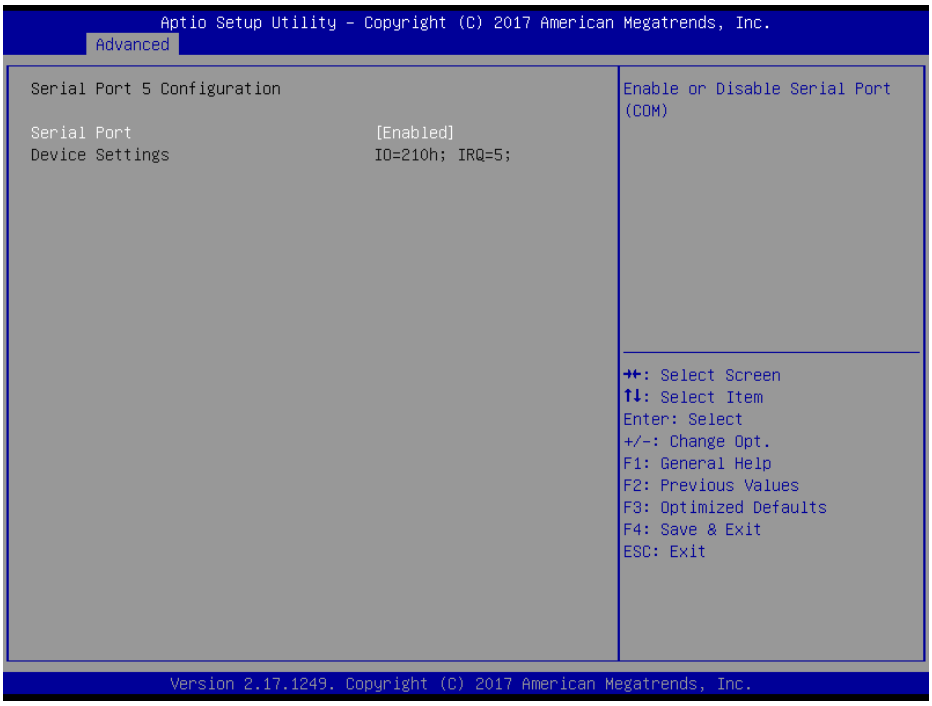
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.3.4 Serial Port 4 Configuration



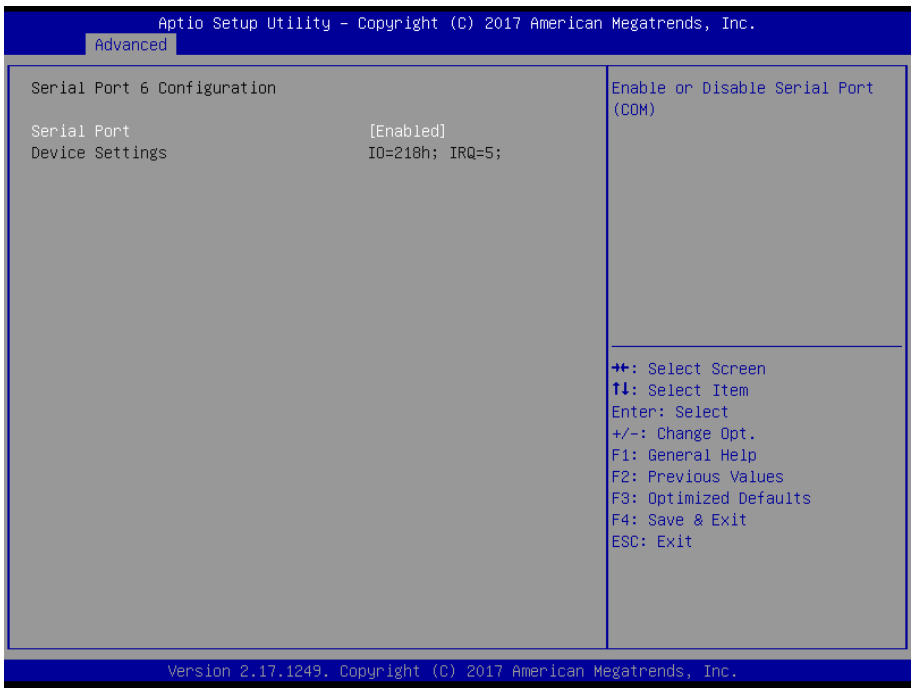
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.3.5 Serial Port 5 Configuration



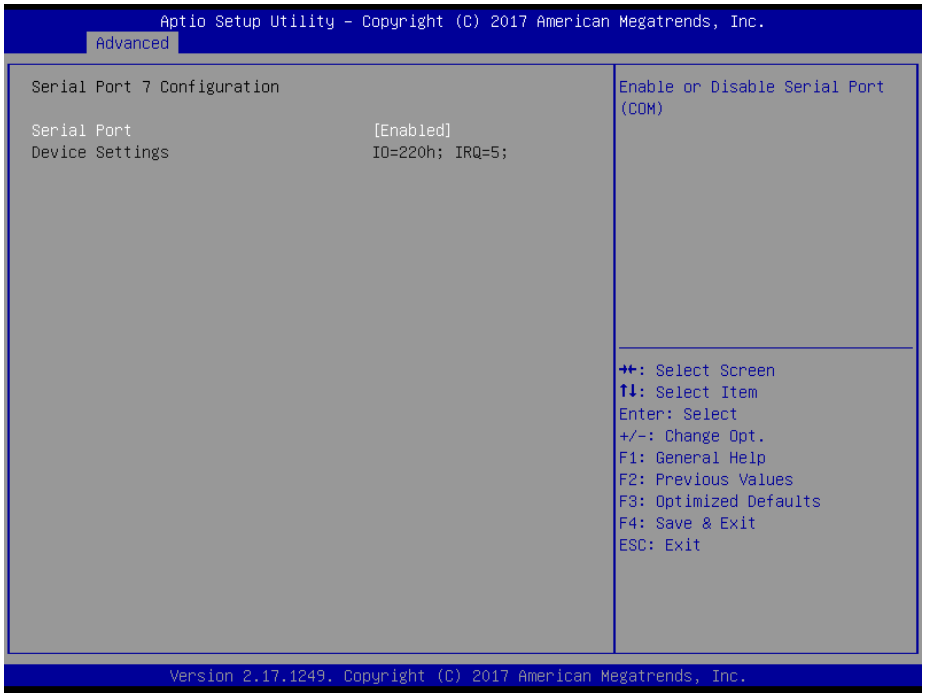
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.3.6 Serial Port 6 Configuration



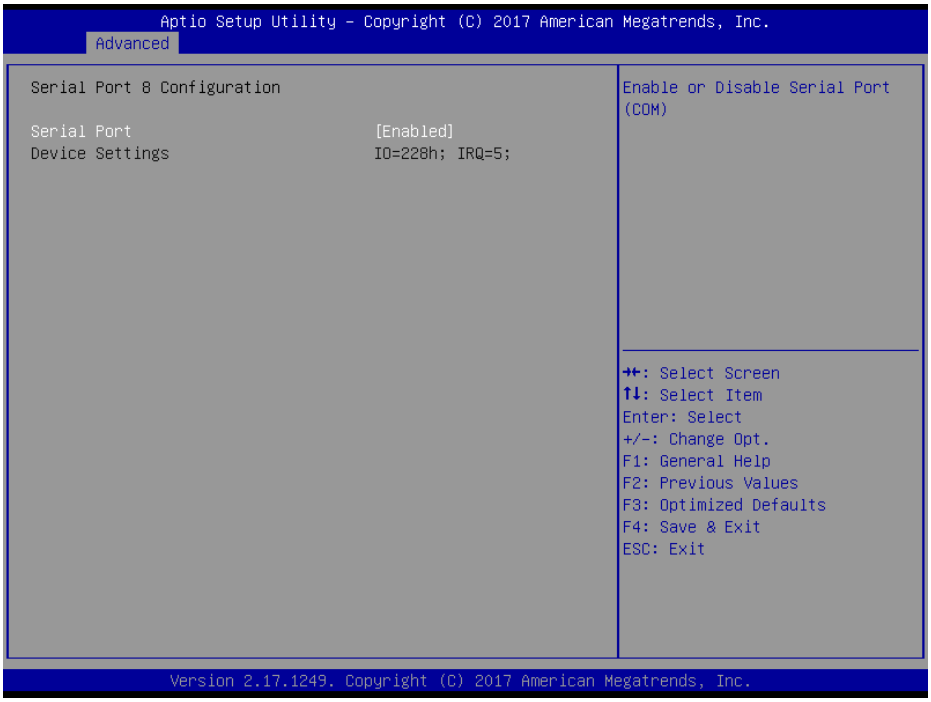
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.3.7 Serial Port 7 Configuration



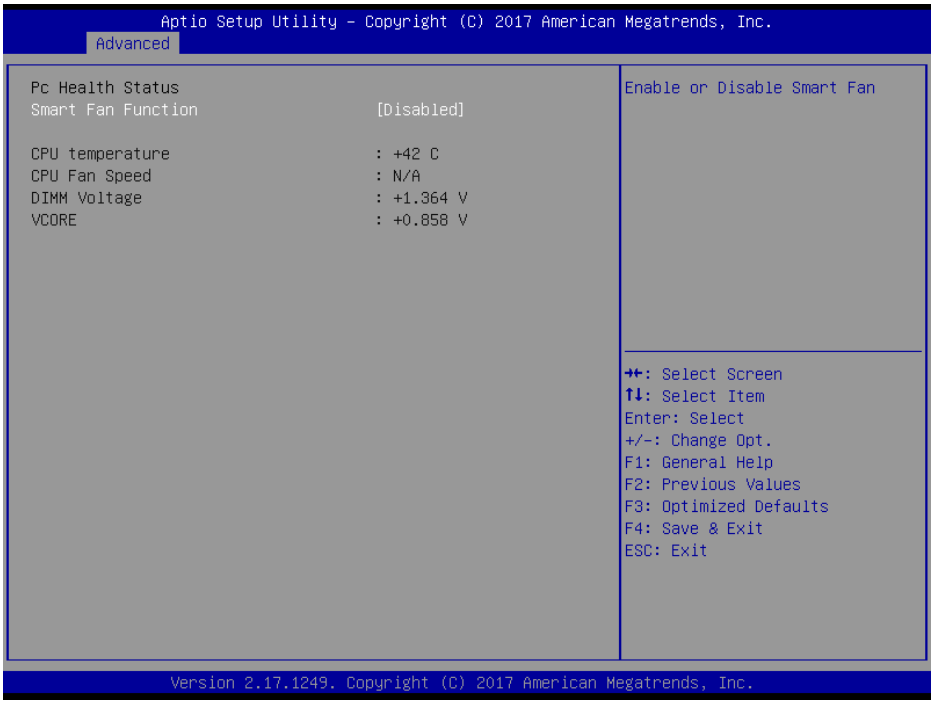
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.3.8 Serial Port 8 Configuration



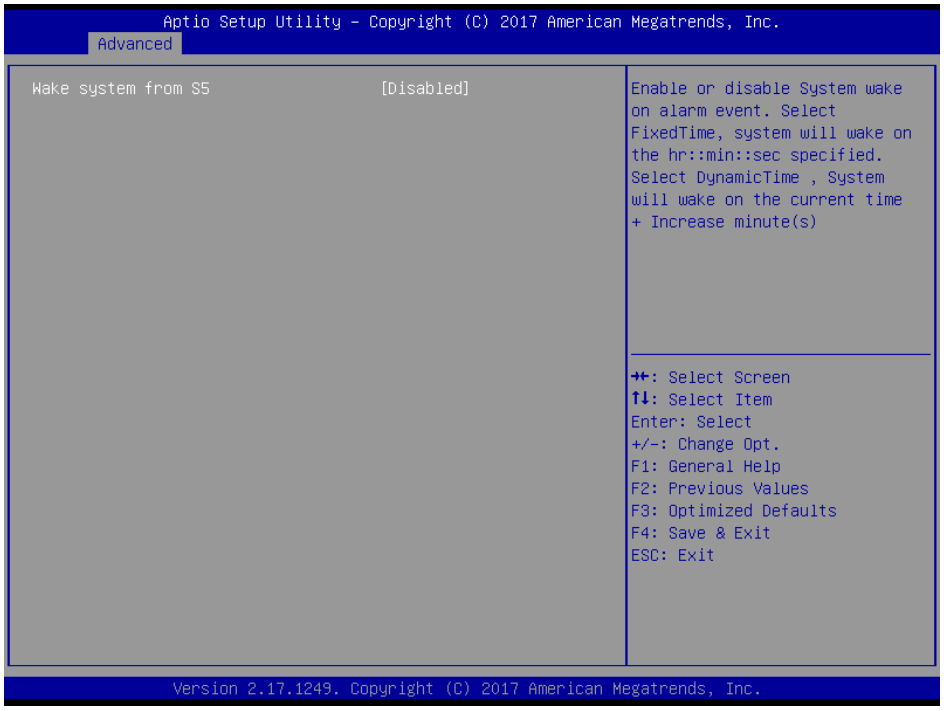
Item	Option	Description
Serial Port	Enabled**[Default]**, Disabled	Enable or Disable Serial Port (COM).

3.6.2.4 H/W Monitor



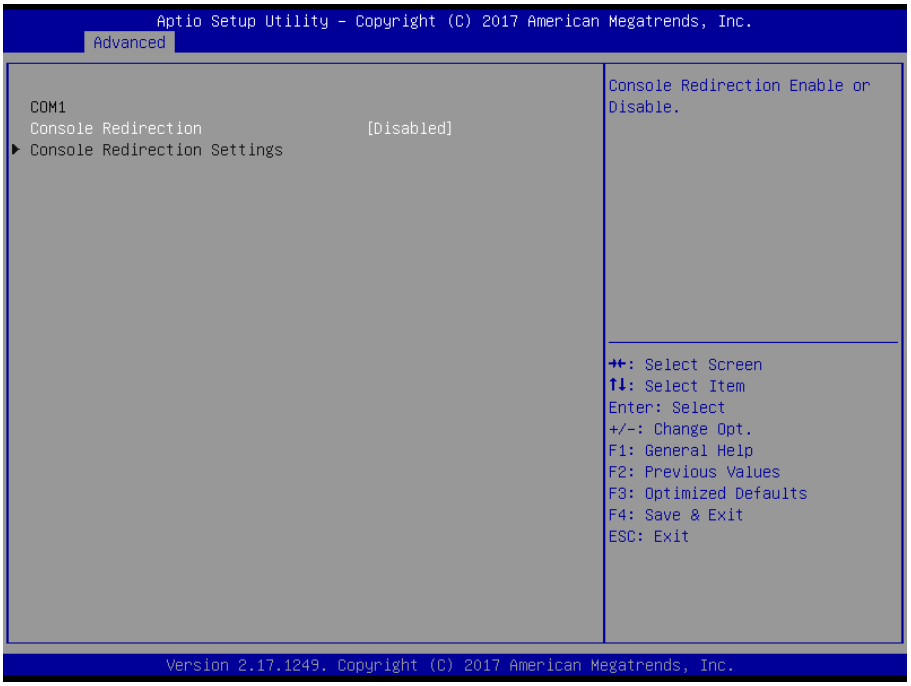
Item	Options	Description
Smart Fan Function	Enabled, Disabled**[Default]**	Enable or Disable Smart Fan.

3.6.2.5 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).

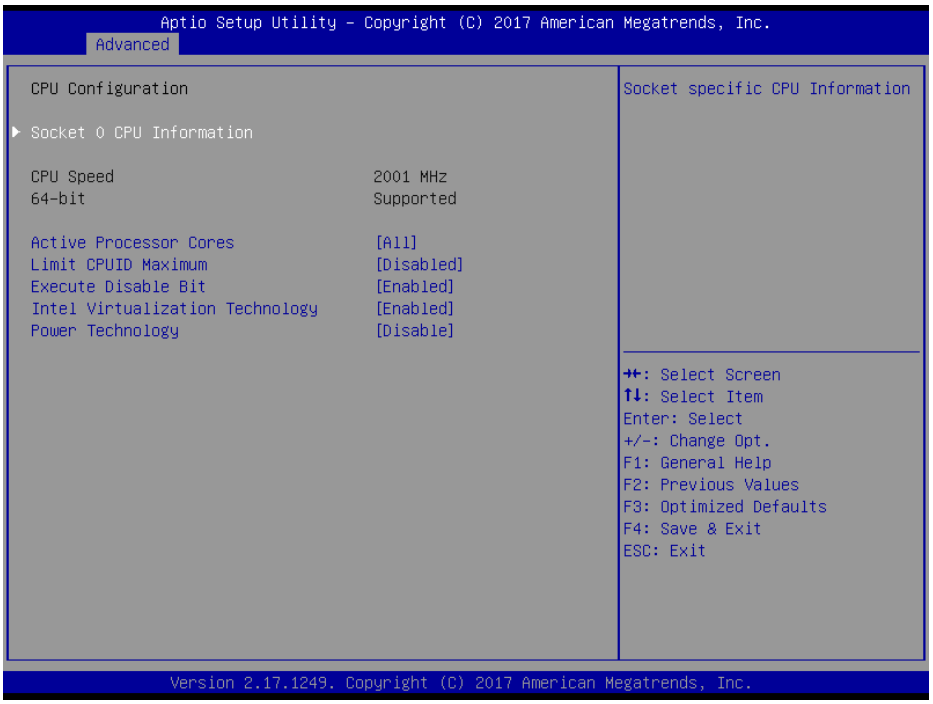
3.6.2.6 Serial Port Console Redirection



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

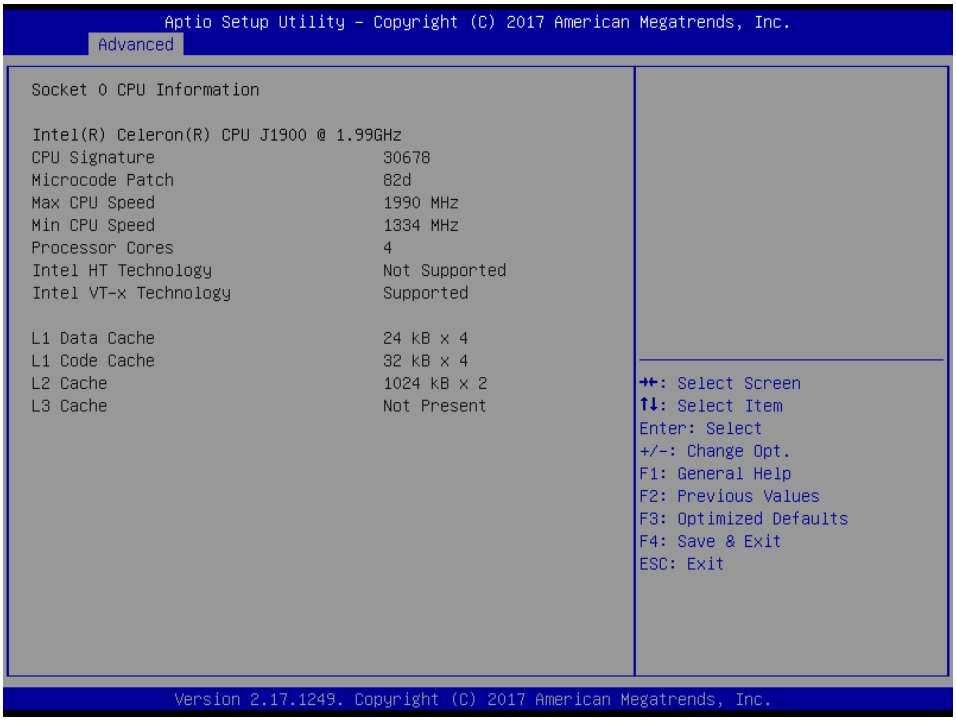
3.6.2.7 CPU Configuration

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

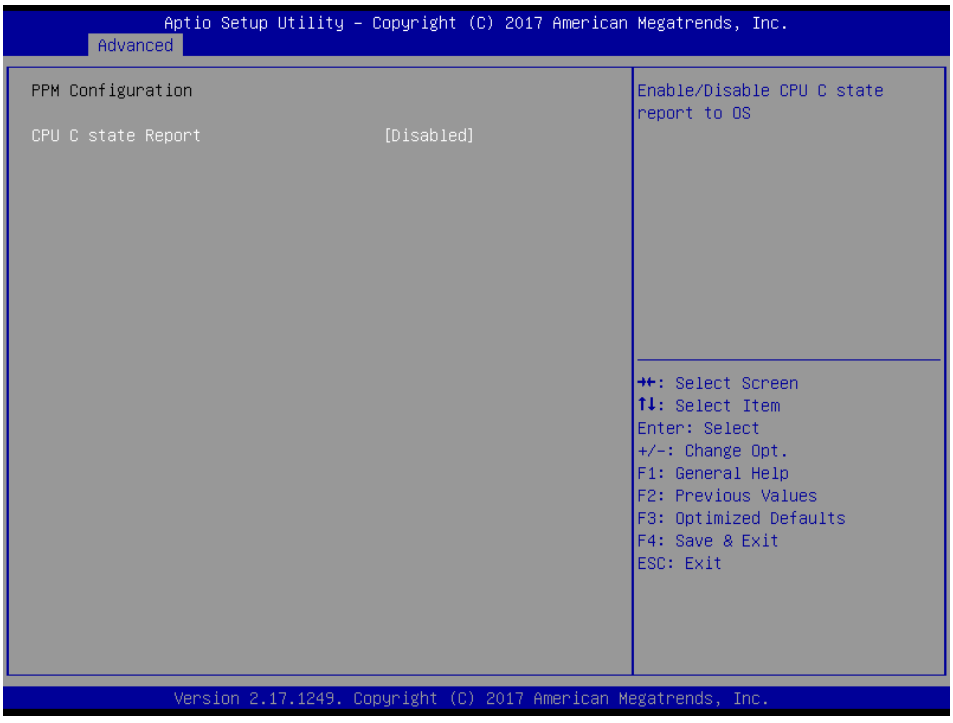


Item	Options	Description
Active Processor Cores	All**[Default]**, 1	Number of cores to enable in each processor package.
Limit CPUID Maximum	Disabled**[Default]**, Enabled	Disabled for Windows XP.
Execute Disable Bit	Disabled, Enabled**[Default]**	XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)
Intel Virtualization Technology	Disabled, Enabled**[Default]**	When enabled, a VMM can utilize the additional hardware capabilities provided by Virtualization Technology.
Power Technology	Disable**[Default]**, Energy Efficient Custom	Enable the power management features.

3.6.2.7.1 Socket 0 CPU Information

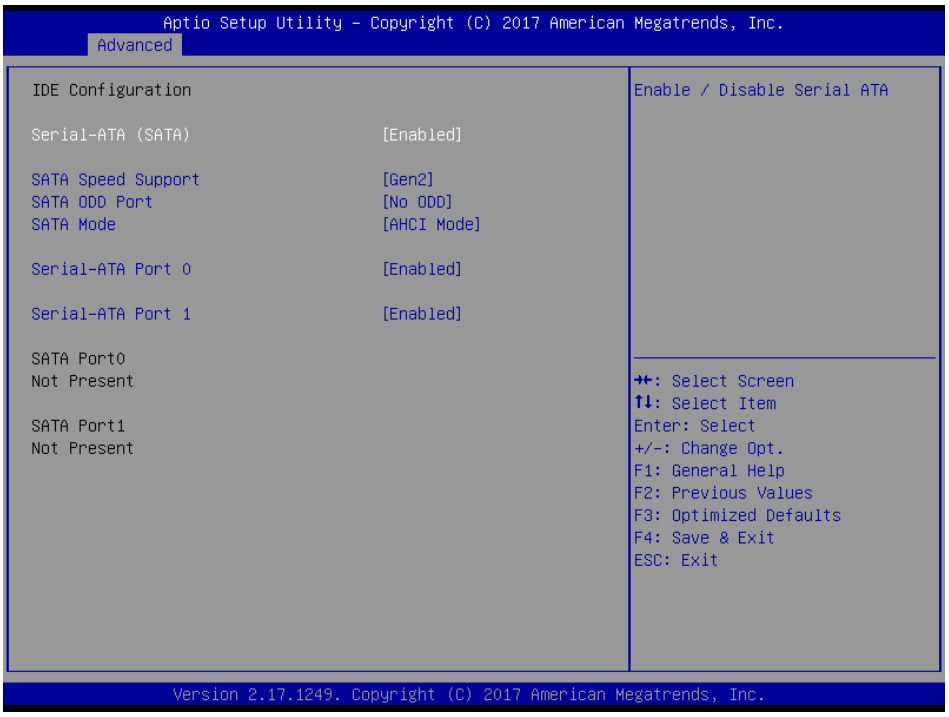


3.6.2.8 PPM Configuration



Item	Options	Description
CPU C state Report	Disabled**[Default]**, Enabled	Enable/Disable CPU C state report to OS.

3.6.2.9 IDE Configuration

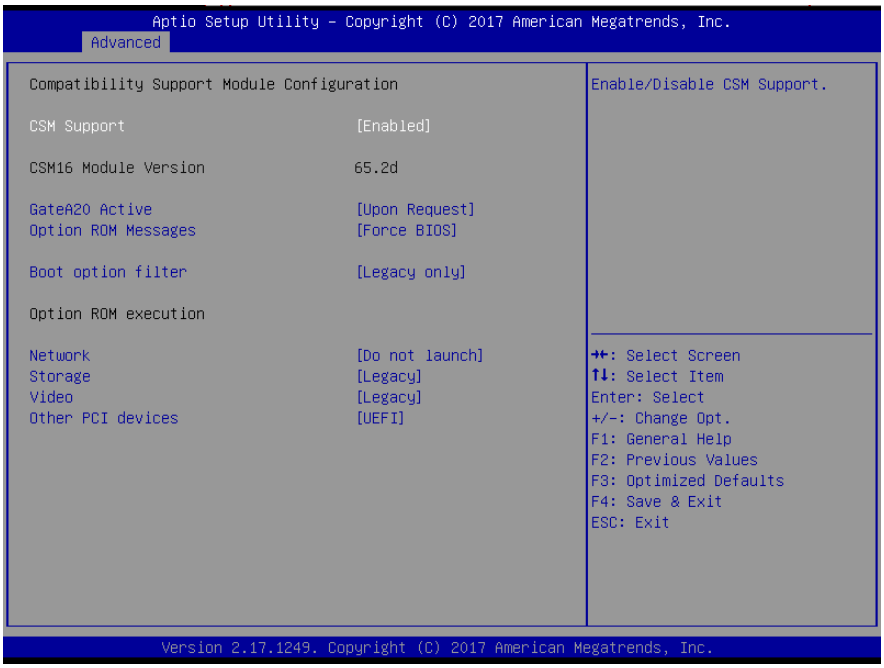


Item	Options	Description
Serial-ATA (SATA)	Enabled**[Default]** Disabled,	Enable/Disable Serial ATA.
SATA Speed Support	Gen1 Gen2**[Default]**	SATA Speed Support Gen1 or Gen2.
SATA ODD Port	Port0 ODD Port1 ODD No ODD**[Default]**	SATA ODD is Port0 or Port1.
SATA Mode	IDE Mode AHCI Mode**[Default]**	Select IDE/AHCI.
Serial-ATA Port 0/1	Enabled**[Default]** Disabled,	Enable/Disable Serial ATA Port0/1.

3.6.2.10 Network Stack Configuration

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

3.6.2.11 CSM Configuration



Item	Options	Description
CSM Support	Enabled**[Default]** Disabled,	Enable/Disable CSM Support.

GateA20 Active	Upon Request**[Default]** Always	UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – go not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Option ROM Messages	Force BIOS**[Default]** Keep Current	Set display mode for Option ROM.
Boot option filter	UEFI and Legacy Legacy only**[Default]** UEFI only	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.

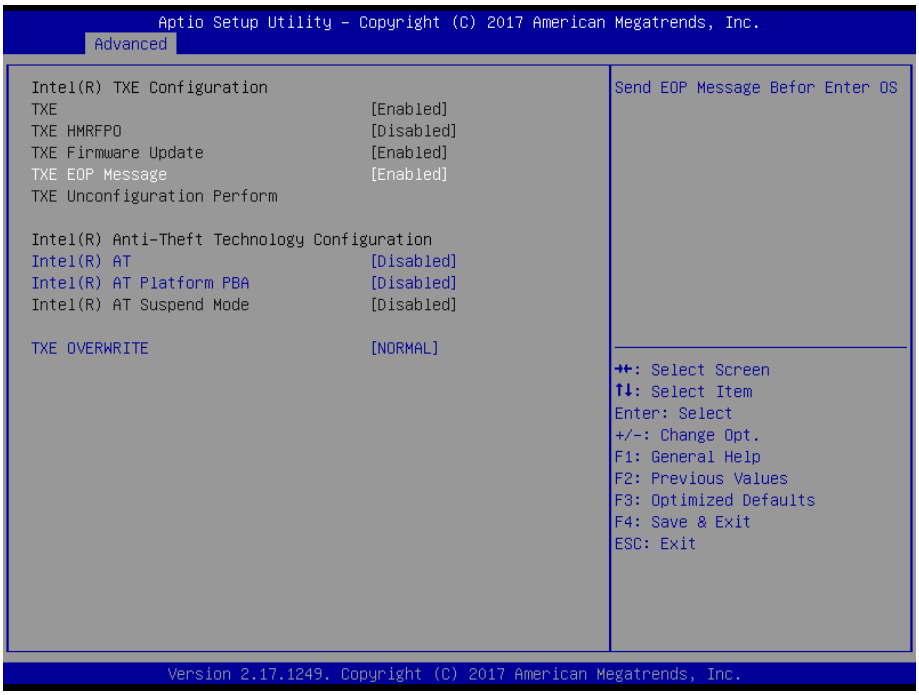
3.6.2.12 USB Configuration

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.
XHCI Hand-off	Enabled**[Default]**	This is a workaround for OSew without XHCI

	Disabled	hand-off support. The XHCI ownership change should be claimed by XHCI driver.
EHCI Hand-off	Enabled Disabled**[Default]**	This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
USB Mass Storage Driver Support	Enabled**[Default]** Disabled	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 form 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.

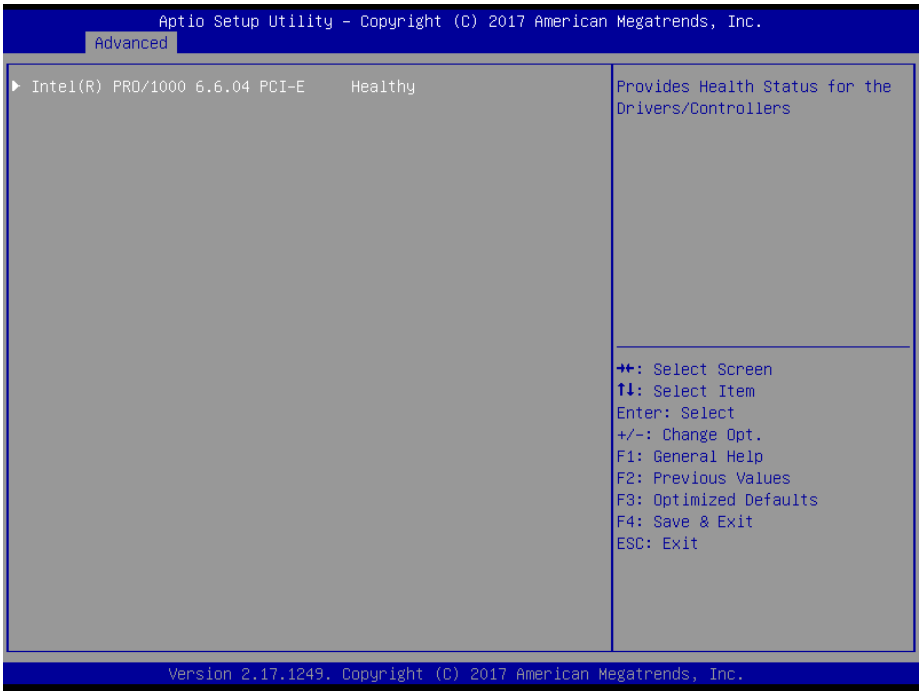
3.6.2.13 Security Configuration



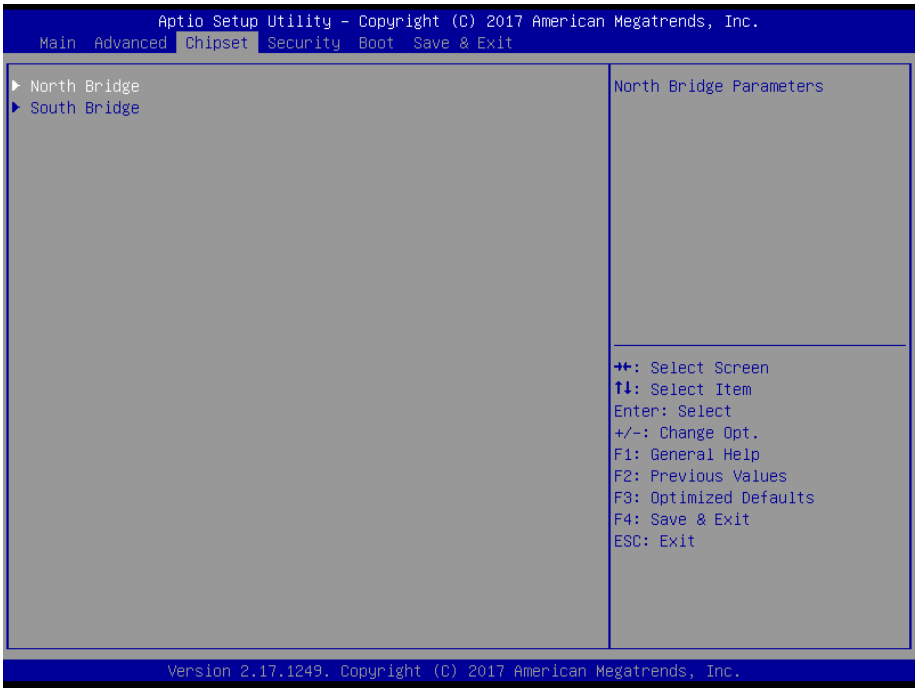
Item	Options	Description
TXE EOP Message	Disabled Enabled**[Default]**,	Send EOP Message Before Enter OS.
Intel® AT	Disabled**[Default]**	Enable/Disable BIOS AT Code from Running.

	Enabled,	
Inter® AT Platform PBA	Disabled**[Default]** Enabled	Enable/Disable BIOS AT Code from Running.
TXE OVERWRITE	OVERWRITE NORMAL**[Default]**	TXE OVERWRITE. NORMAL: OverWrite Pin as high. (TXE enabled) OVERWRITE:OverWrite Pin as low. (TXE disabled).

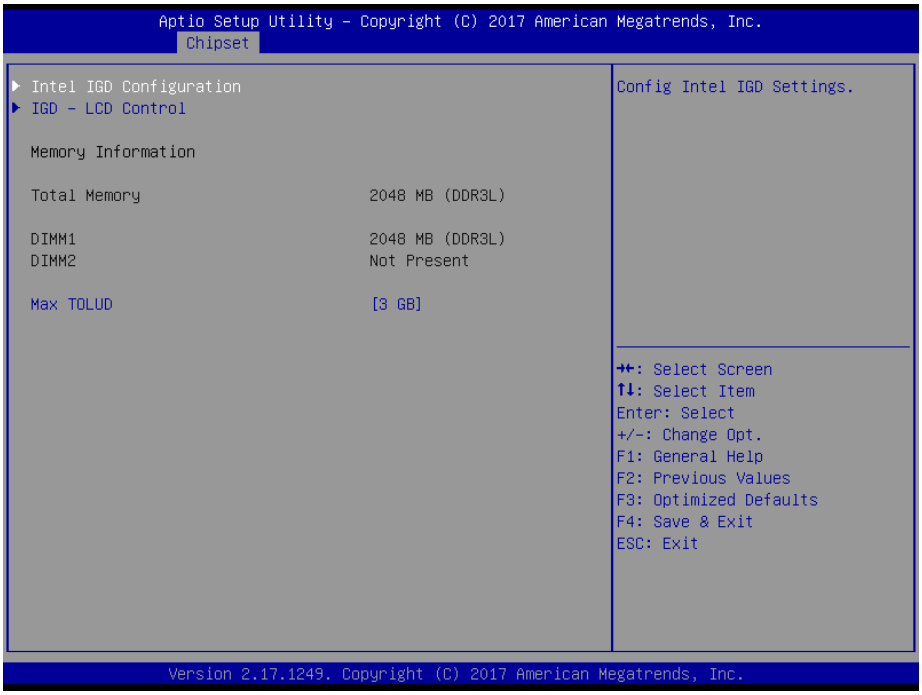
3.6.2.14 Driver Health



3.6.3 Chipset

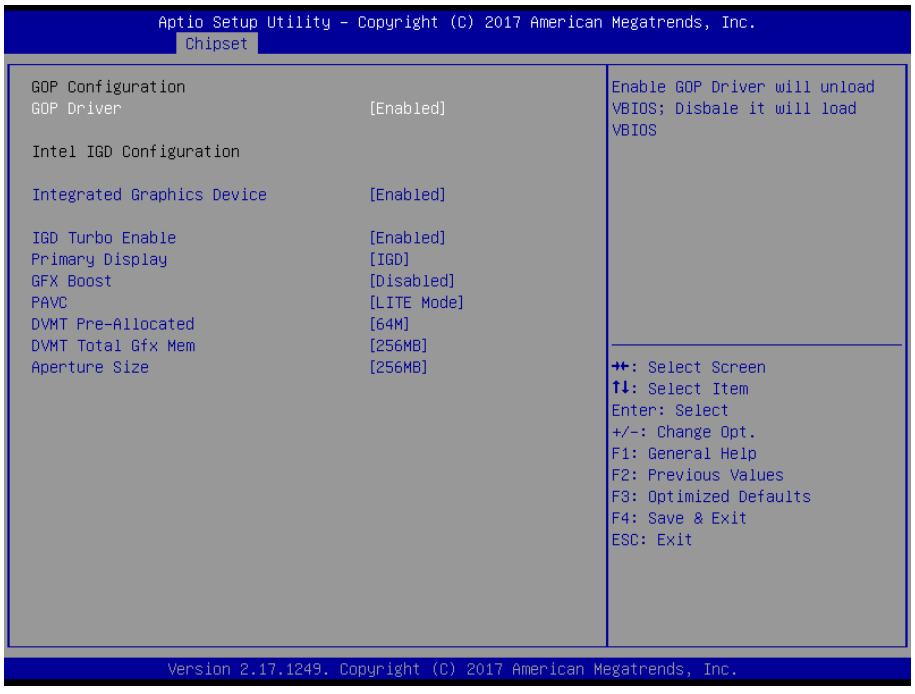


3.6.3.1 North Bridge



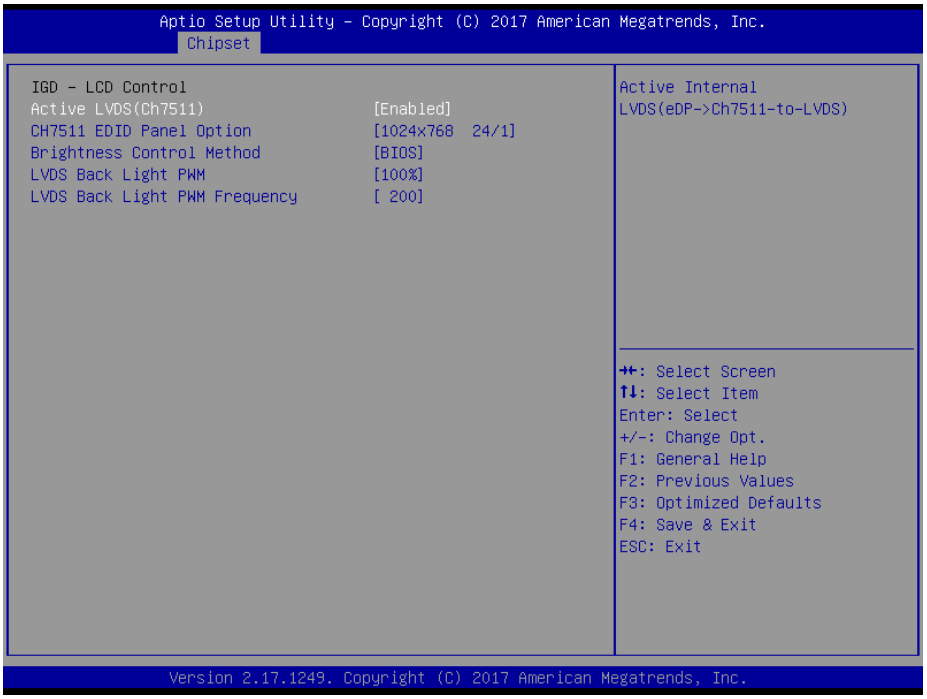
Item	Option	Description
Max TOLUD	Dynamic 2 GB 2.25 GB 2.5 GB 2.75 GB 3 GB**[Default]**	Maximum Value of TOLUD.

3.6.3.1.1 Intel IGD Configuration



Item	Option	Description
GOP Driver	Enabled**[Default]**, Disabled	Enable GOP Driver will unload VBIOS; Disable it will load VBIOS.
Integrated Graphics Device	Enabled**[Default]**, Disabled	Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adaptor. Disable: Always disable IGD.
IGD Turbo Enable	Enabled**[Default]**, Disabled	Enable: Enable IGD Turbo Enable. Disable: IGD Turbo Disable.
Primary Display	Auto IGD**[Default]** PCIe	Select which of IGD/PCI Graphics device should be Primary Display.
GFX Boost	Enabled, Disabled**[Default]**	Enable/Disable GFX Boost.
PAVC	Disabled LITE Mode**[Default]** SERPENT Mode	Enable/Disable Protected Audio Video Control.
DVMT Pre-Allocated	64M**[Default]**/96M/128M /160M/192M/224M/256M /288M/320M/352M/384M /416M/448M/480M/512M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	128MB 256MB**[Default]** Max	Select DVMT 5.0 Total Graphics Memory size used by the Internal Graphics Device.
Aperture Size	128MB 256MB**[Default]**	Select the Aperture Size.

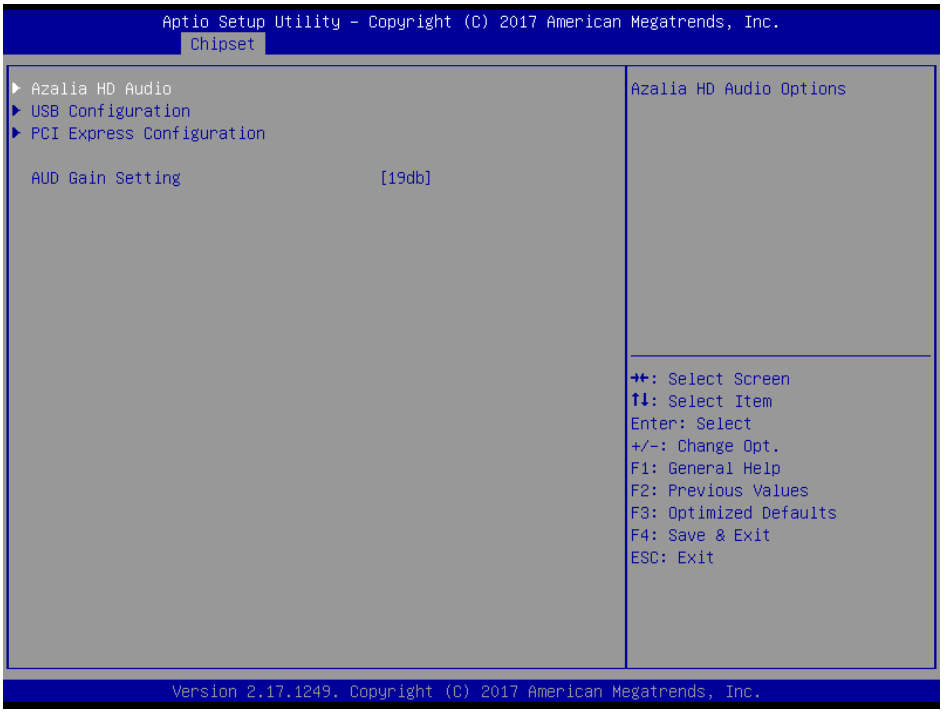
3.6.3.1.2 IGD - LCD Control



Item	Option	Description
Active LVDS (Ch7511)	Enabled**[Default]** Disabled	Active Internal LVDS(eDP->Ch7511-to –LVDS).

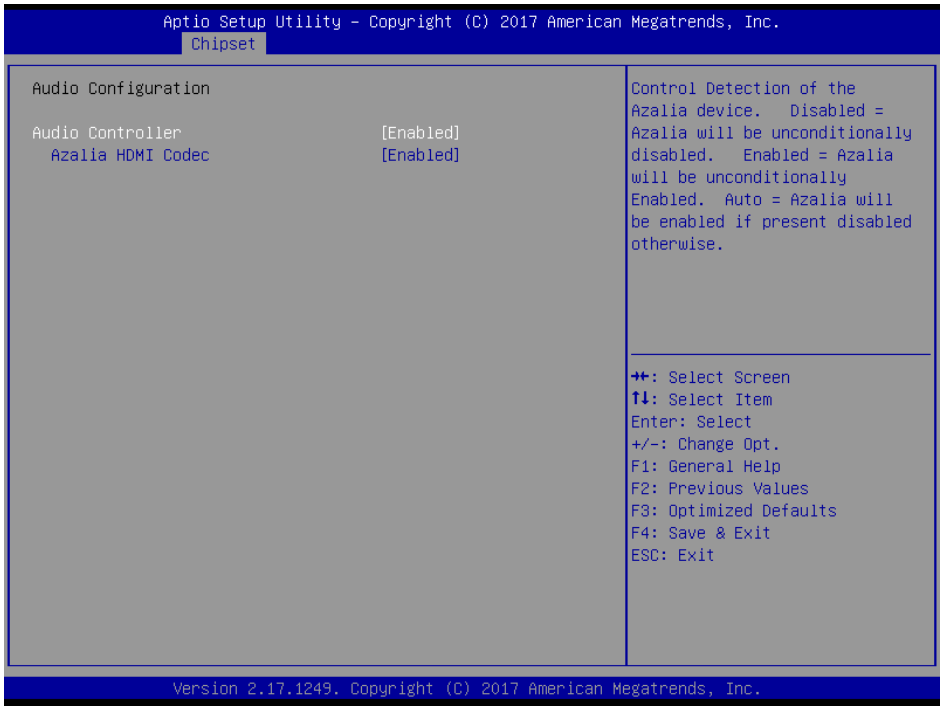
CH7511 EDID Panel Option	1024x768 24/1**[Default]** 800x600 18/1 1024x768 18/1 1366x768 18/1 1024x600 18/1 1280x800 18/1 1920x1200 24/2 640x480 18/1 800x480 18/1 1920x1080 18/2 1280x1024 24/2 1440x900 18/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2 1680x1050 24/2	Port1-EDP to LVDS (Chrontel 7511) Panel EDID Option.
Brightness Control Method	BIOS**[Default]** BR Button VR	LVDS Brightness Control Method. 1.BIOS 2.Brightness Button 3.Variable Resistor.
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



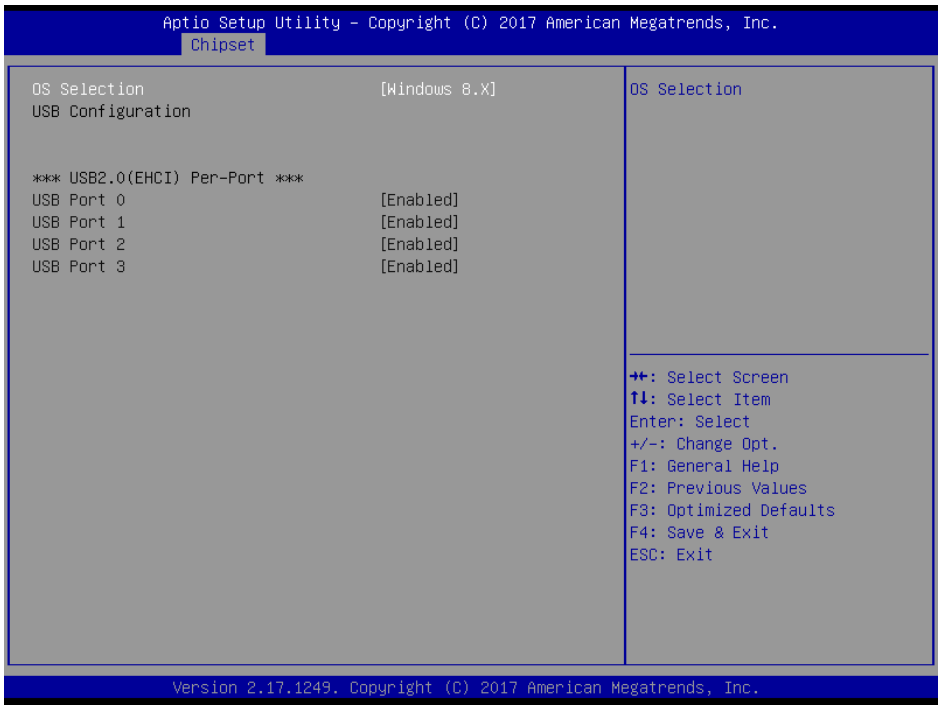
Item	Option	Description
AUD Gain Setting	11db 14db 19db**[Default]** 25db	Select db Value of the AUD Gain.

3.6.3.2.1 Azalia HD Audio



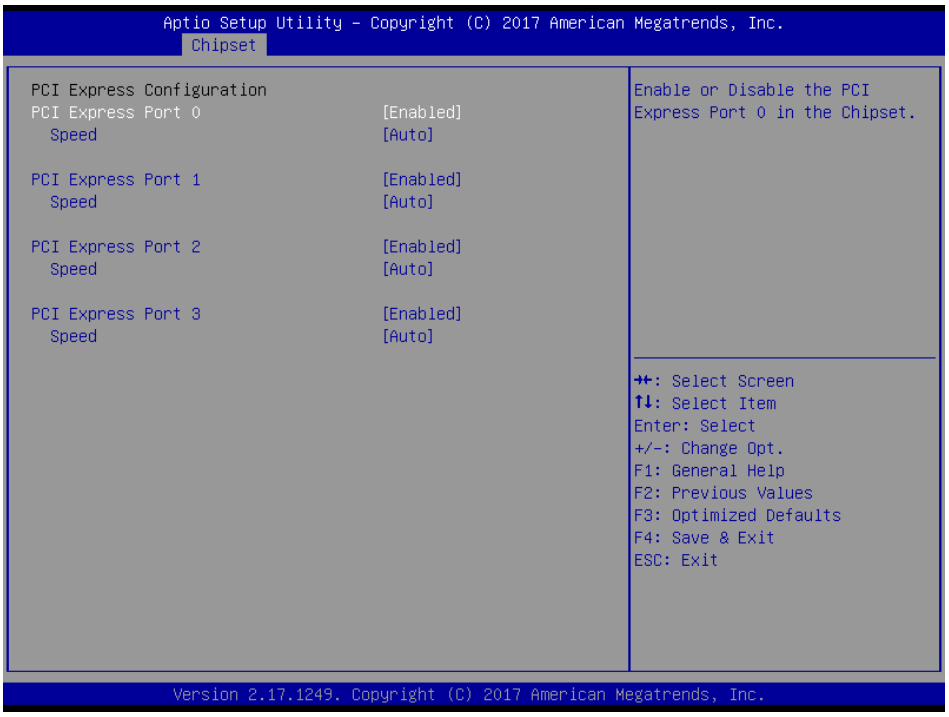
Item	Option	Description
Audio Controller	Enabled**[Default]**, Disabled	Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled. Auto = Azalia will be enabled if present disabled otherwise.
Azalia HDMI Codec	Enabled**[Default]**, Disabled	Enable/Disable internal HDMI codec for Azalia.

3.6.3.2.2 USB Configuration



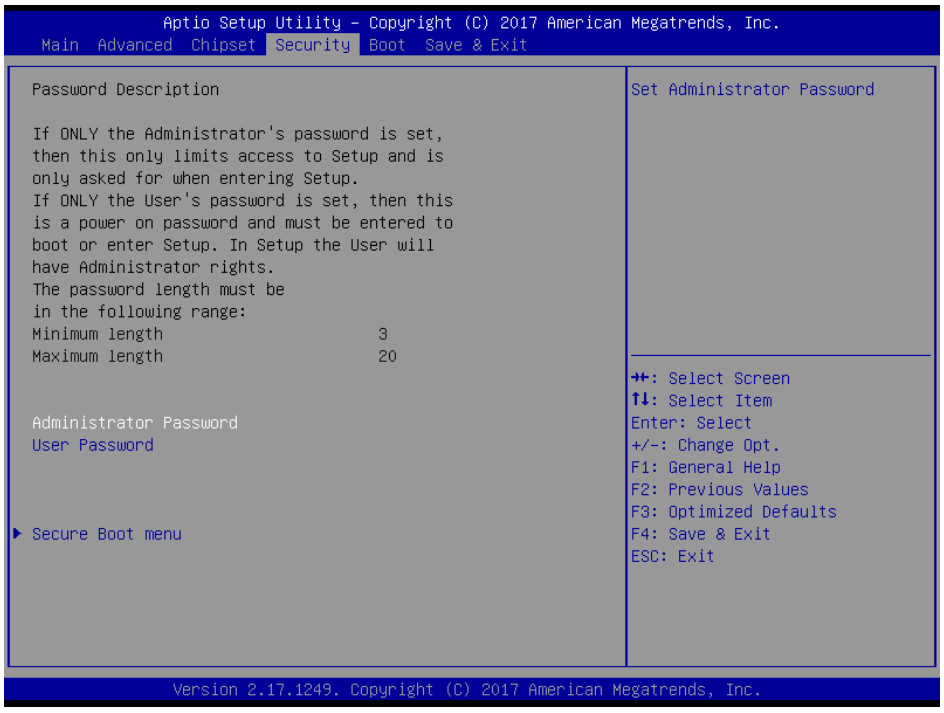
Item	Option	Description
OS Selection	Windows 8.X**[Default]** Android Windows 7	OS Selection.

3.6.3.2.3 PCI Express Configuration



Item	Option	Description
PCI Express Port 0/1/2/3	Enabled**[Default]**, Disabled	Enable or Disable the PCI Express Port 0/1/2/3 in the Chipset.
Speed	Auto**[Default]** Gen 2 Gen 1	Configure PCIe Port Speed.

3.6.4 Security



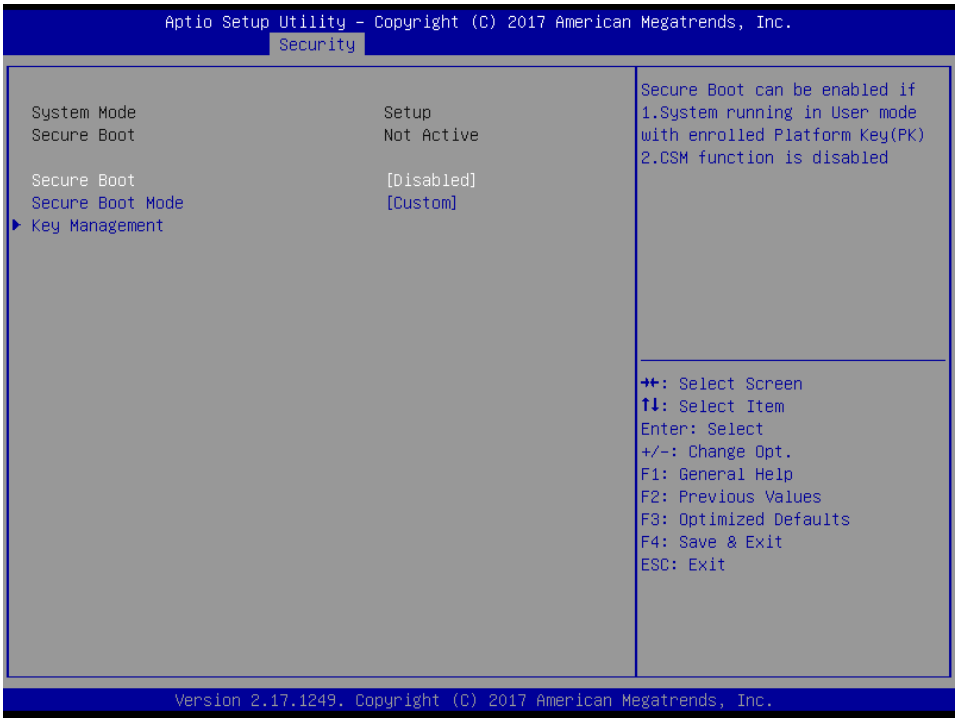
- **Administrator Password**

Set setup Administrator Password

- **User Password**

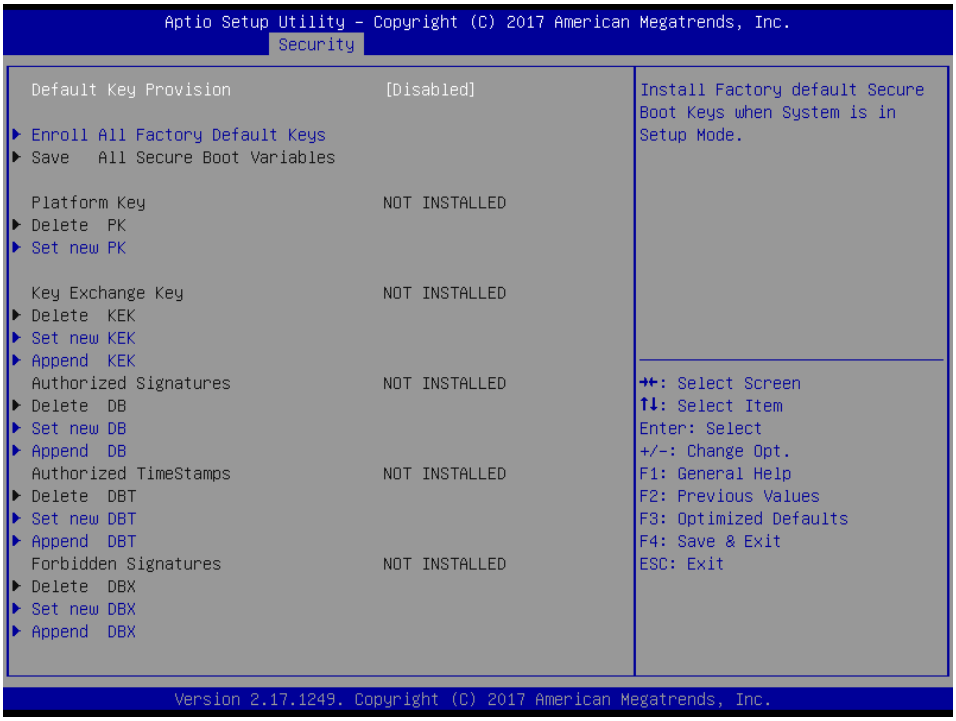
Set User Password

3.6.4.1 Secure Boot menu



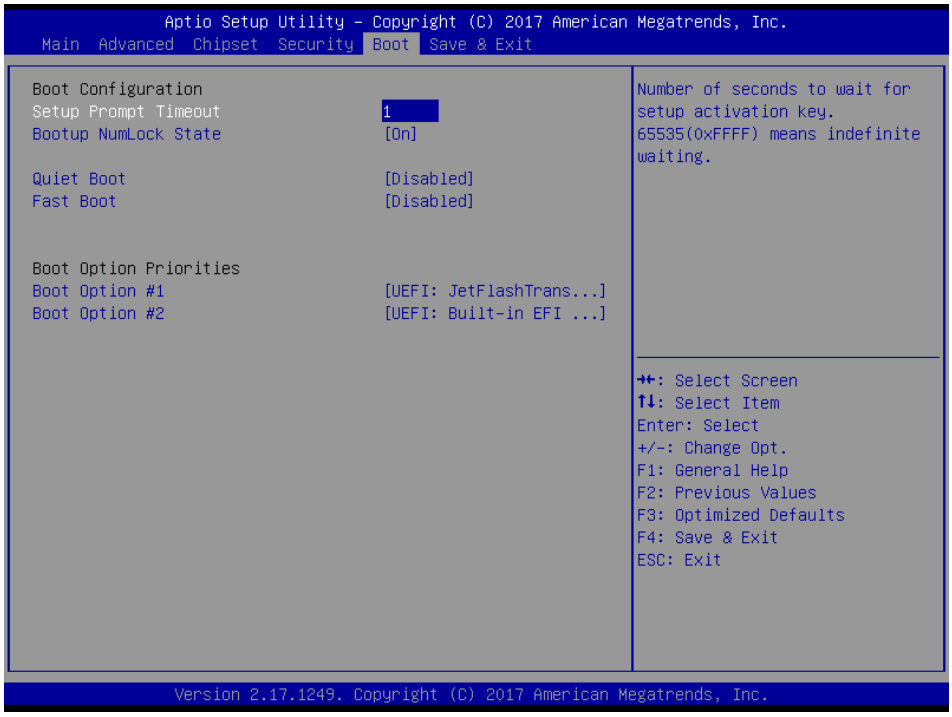
Item	Option	Description
Secure Boot	Disabled**[Default]** Enabled	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled.
Secure Boot Mode	Standard Custom**[Default]**	Secure Boot mode selector. 'Custom' Mode enables users to change Image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

3.6.4.1.1 Key Management



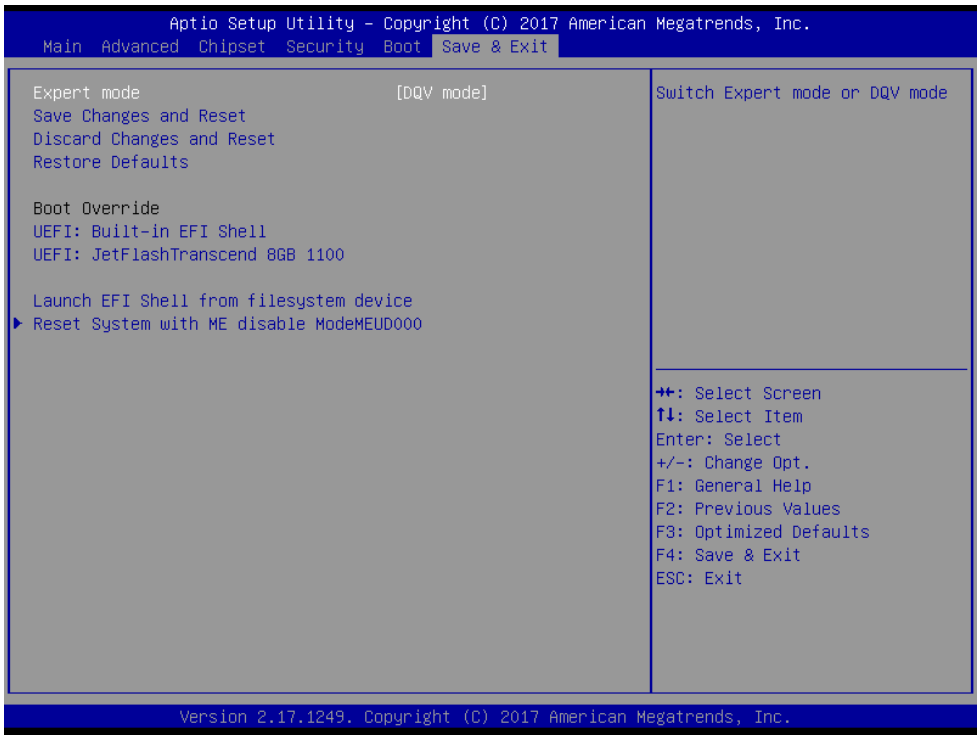
Item	Option	Description
Default Key Provision	Enabled, Disabled**[Default]**	Install Factory default Secure Boot Keys when System is in Setup Mode.

3.6.5 Boot



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.
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	Attempts to Launch EFI Shell application (Shellx64.efi) from one of the	

filesystem device	available filesystem devices.

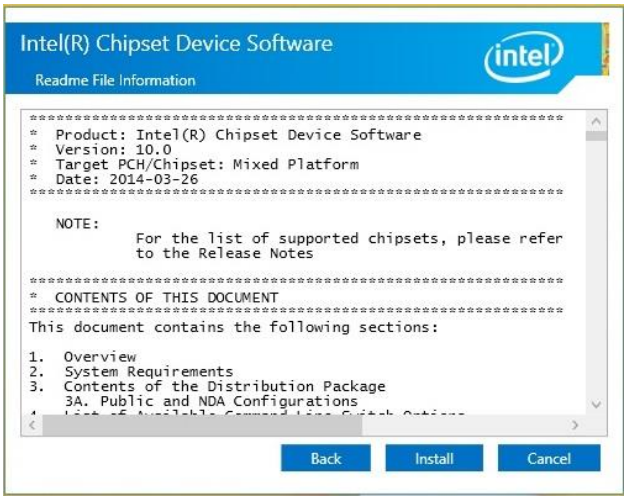
4. Drivers Installation

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.



Step 3. Click **Install**.

Step1. Click **Next**.

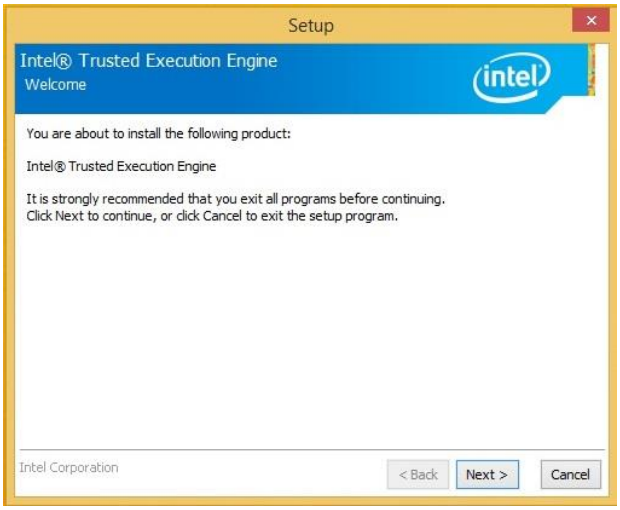
Step 4. Click **Finish** to complete setup.

Step 2. Click **Accept**.

4.2 Install TXE Driver

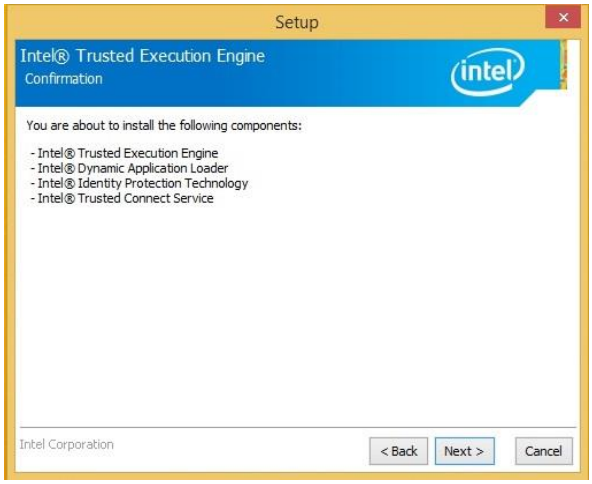
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

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.

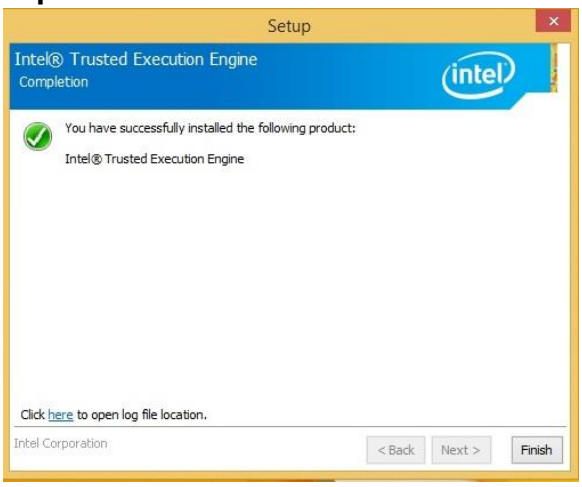


Step1. Click **Next** to start installation.

Step 2. Click **Next**.



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

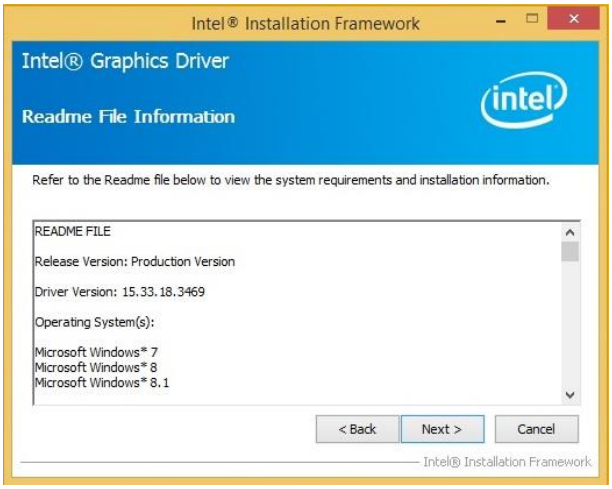


Step 4. Click **Finish** to complete setup.

4.3 Install VGA Driver

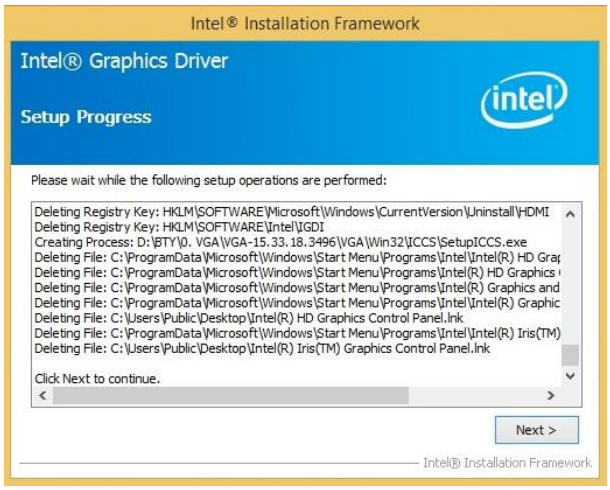
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

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

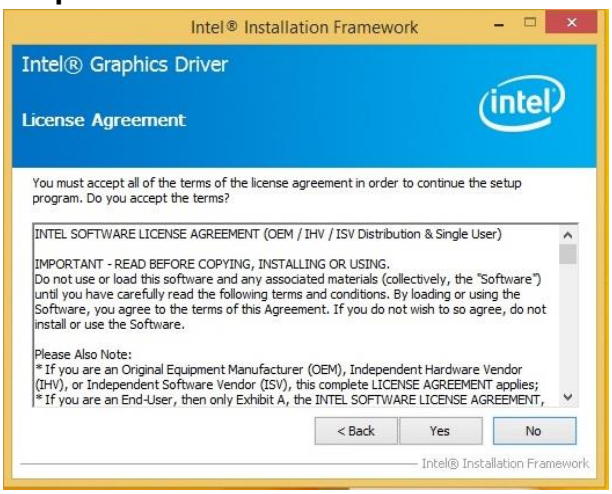


Step 3. Click **Next.**

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

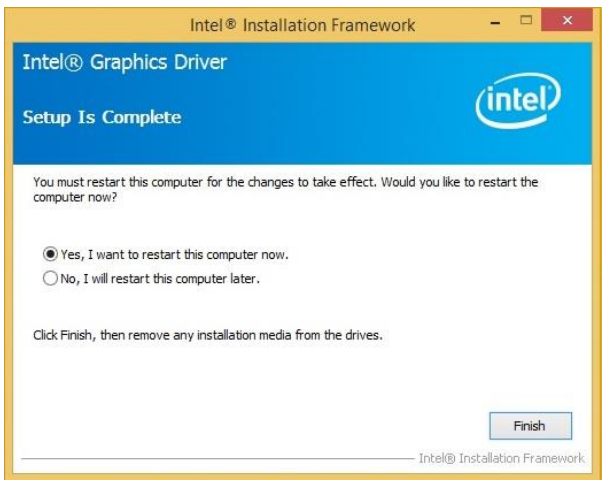


Step 4. Click **Next**.



Step 2.

Click **Yes** to accept license agreement.

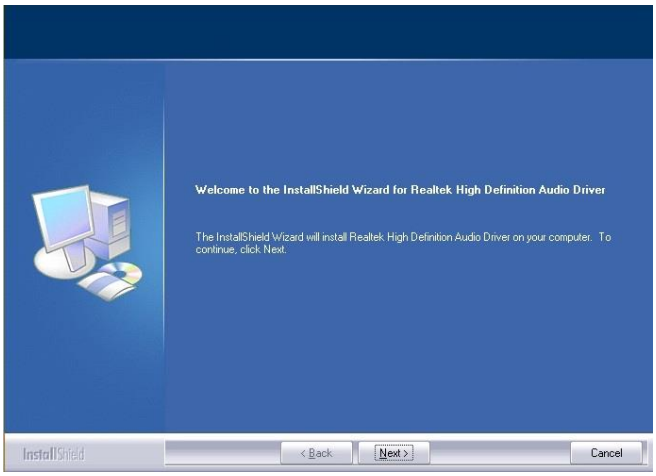


Step 5. Click **Finish** to complete setup.

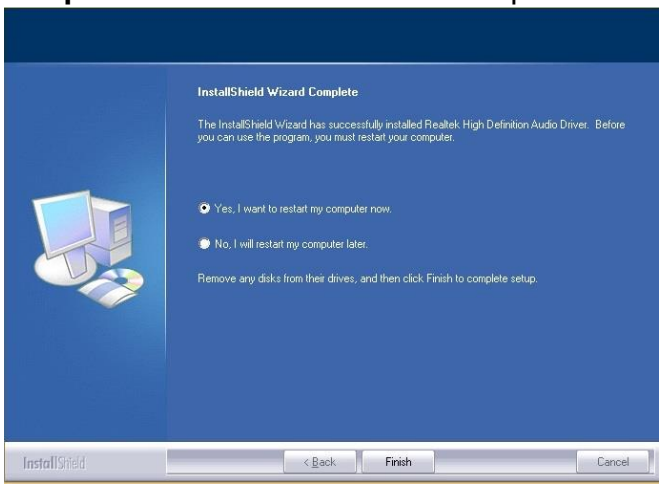
4.4 Install Audio Driver

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.

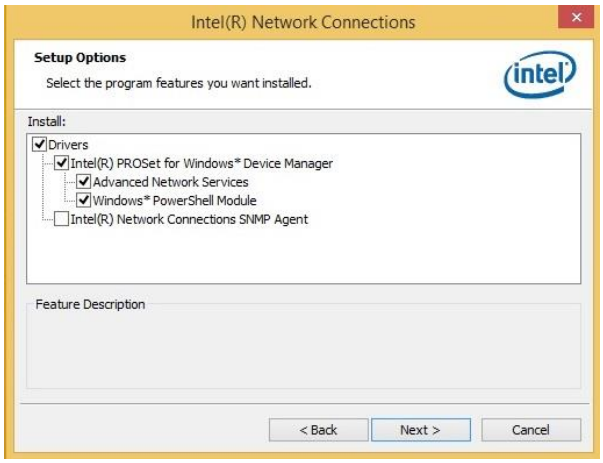
4.5 Install Ethernet Driver

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.

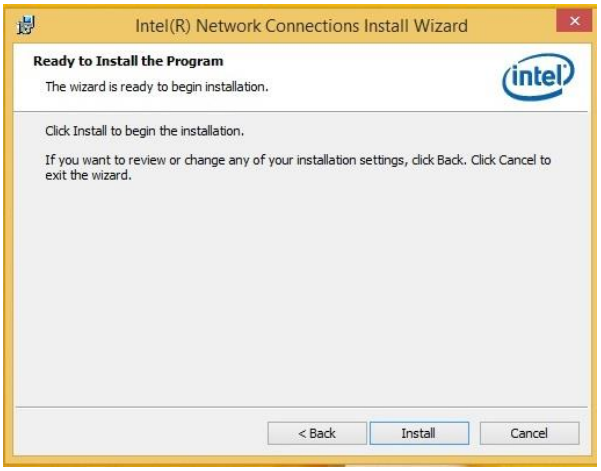
Note: The installation procedures and screen shots in this section are based on Windows 8.1 operation system.

Step 1. Click **Next**.

Step 2. Click **Next** to accept license agreement.



Step 3. Click **Next**.



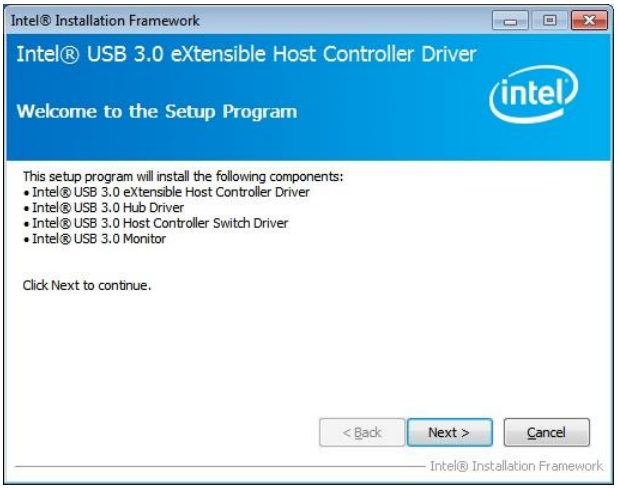
Step 4. Click **Install** to proceed.

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

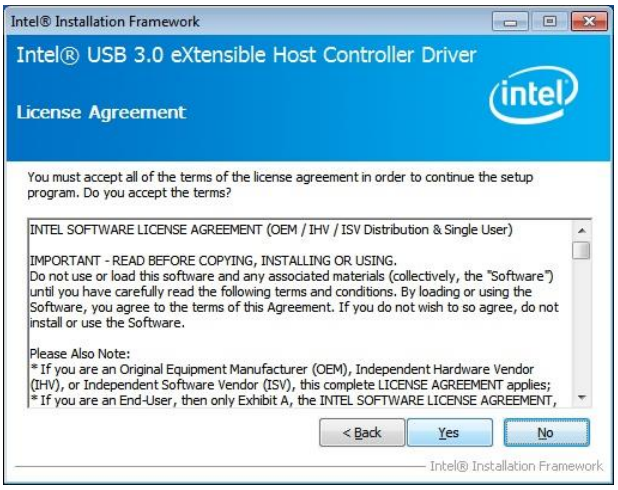
4.6 Install USB 3.0 Driver

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.

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.

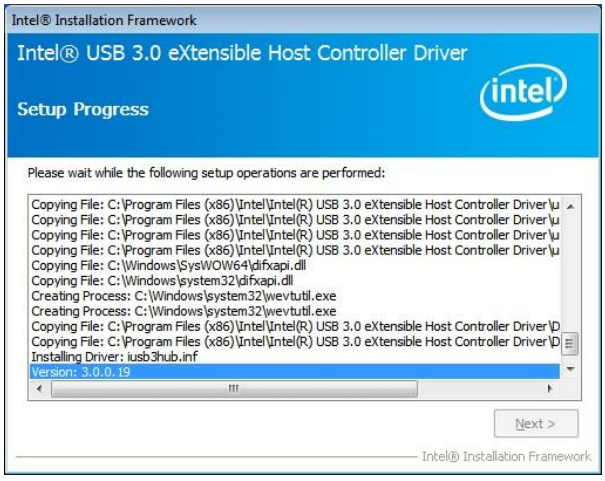


Step1. Click **Next** to start installation.



Step 2. Click **Yes**.

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



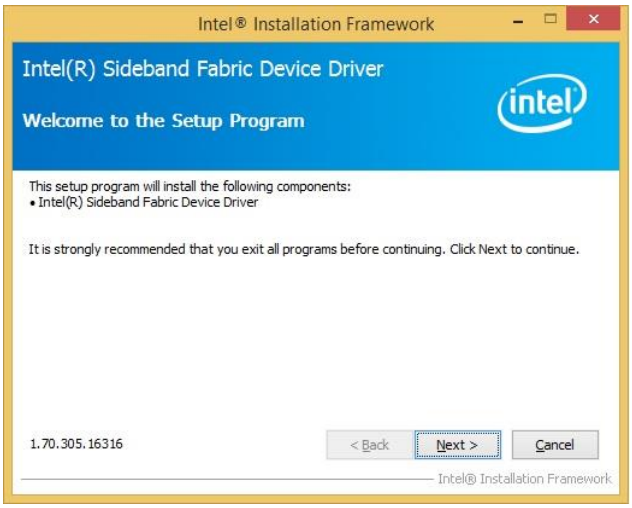
Step 4. Wait while installing.

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

4.7 Install MBI Driver

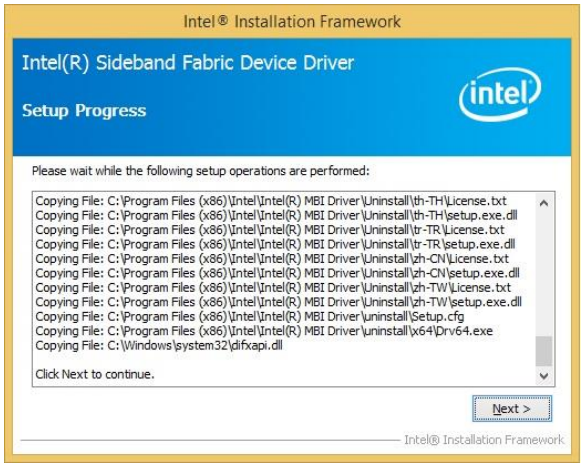
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left.

Note: The installation procedures and screen shots in this section are based on Windows 8 operation system. If the warning message appears while the installation process, click Continue to go on.

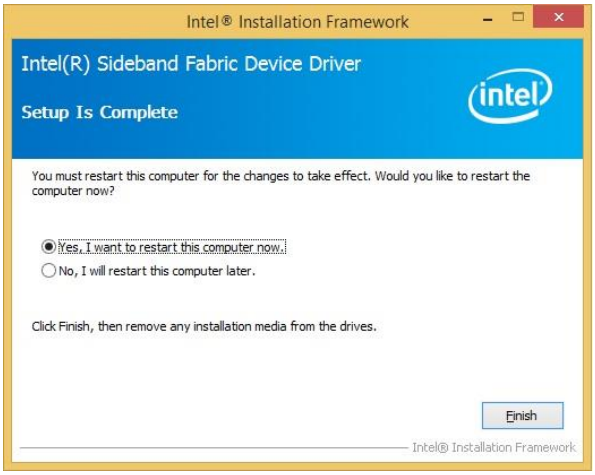


Step1. Click **Next** to start installation.

Step 2. Click **Yes**.

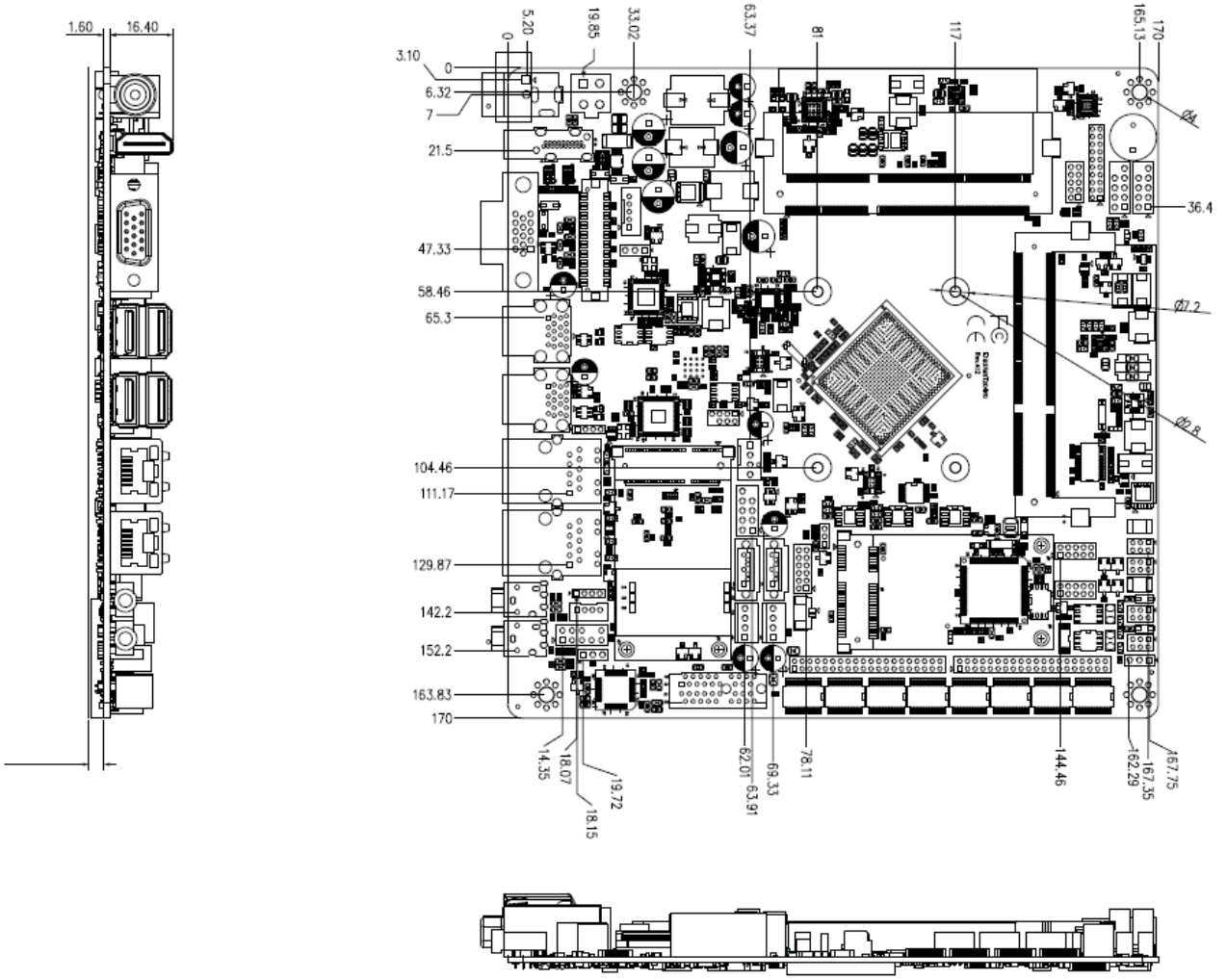


Step 3. Click **Next** to continue installation.



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

5. Mechanical Drawing


1.60
16.40
3.10
0
6.32
7
21.5
47.33
58.46
65.3
104.46
111.17
129.87
142.2
152.2
163.83
170
5.20
19.85
33.02
63.37
81
117
165.13
170
Ø4
36.4
Ø7.2
Ø2.8
14.35
18.07
19.72
18.15
62.01
63.91
69.33
78.11
144.46
162.29
167.35
167.75

Unit: mm