EBM-A50M

5.25" AMD eOntario Mini Module with AMD A50M Chipset + T40E Processor

User's Manual

1st Ed – 10 November 2011

Part No. E2047581700R

FCC Statement

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

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

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

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

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

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

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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 EBM-A50M
- 1 x DVD-ROM or CD-ROM containing the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities

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

1.3 Document Amendment History

Revision	Date	Comment
1st	November 2011	Initial Release

1.4 Manual Objectives

This manual describes in detail the Avalue Technology EBM-A50M 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 interface with EBM-A50M series 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 concerning this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

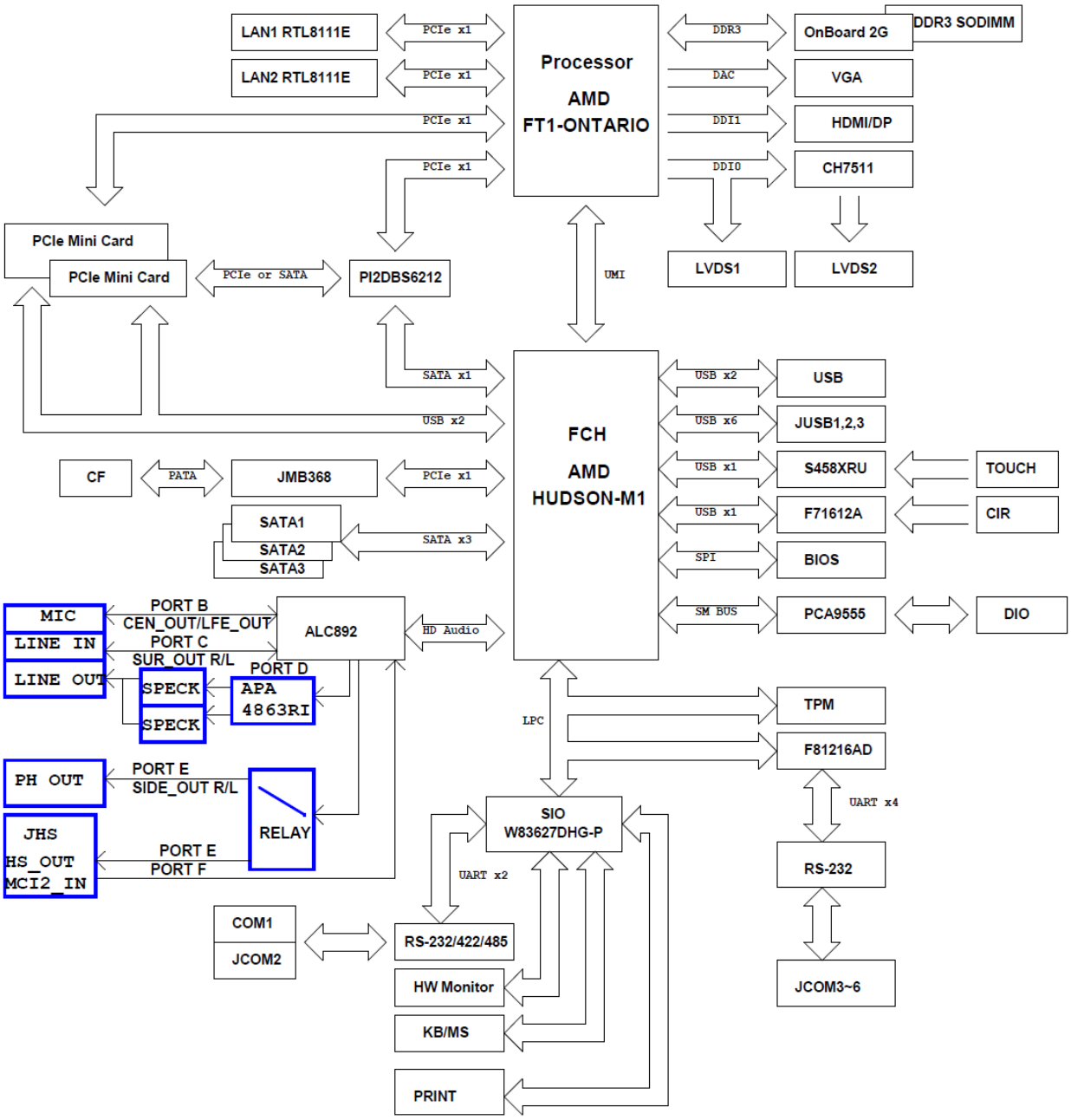
1.5 System Specifications

System	
CPU	Onboard AMD Fusion Accelerated Dual-Core Processor T56N Dual Core 1.65GHz CPU(18W), or optional T40E Dual Core 1.0GHz CPU(5~7W)
BIOS	AMI 32M-bit SPI BIOS
System Chipset	AMD A50M
I/O Chip	Winbond W83627DHG-P
System Memory	Onboard 2G DDR3 1333 SDRAM, One 204-pin DDR3 SODIMM socket supports up to 4GB DDR3 1333 SDRAM
SSD	1 x CompactFlash Type I/II socket
Watchdog Timer	Reset: 1 sec.~65535 sec./min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage. Auto trotting control when CPU overheats
Expansion	Mini-PCIe (Optional mSATA supported)
I/O	
MIO	2 x SATA connector (7 pin) 2 x COM with pin header (one is RS-232 with selectable power by jumper, the other is RS-232/422/485 by jumper) LPC (7 x 2, pitch 2.00mm pin header), CIR (5 x 1, pitch 2.00mm Optional),
USB	8x USB 2.0 ports (2 x Edge connector, 6 x pitch 2.0mm pin header) JUSB3 support 3.3V (for low power USB module, ex:BT, RFID reader)
DIO	8-bit GPI, 8-bit GPO (PCA9555)
TPM	NuvoTon WPCT200AA0WG (Optional)
Display	
Chipset	AMD Fusion Accelerated Processors
Resolution	CRT mode: T56N :2560 x 1600 @ 60 Hz T40E:1920 x 1200 @ 60 Hz
	LCD/Simultaneous mode : 1600 x 1200 @ 75 Hz
	HDMI: 1920 x 1200 @ 60 Hz
	Display port T56N :2560 x 1600 @ 60 Hz T40E:1920 x 1200 @ 60 Hz
	18-bit LVDS : 1400 x 1050 @ 60 Hz
	Dual 24-bit LVDS : 1920 x 1200 @ 60 Hz

Multiple Display	CRT+LVDS, HDMI+LVDS, CRT+HDMI
LCD Interface	18 bit LVDS or Dual channel 18/24-bit LVDS (Transfer Through DDI)
Built-in Touch Screen (Optional)	
Chipset	EETI ETP-CO-S458XRU supports 4/5-wire
Touch Screen Interface	With 5-pin 2.0mm box header (can be selected to support 4/5-wire touch screen)
Audio	
AC97 Codec	Realtek ALC892 supports 7.1-CH Audio
Audio Interface	Headphone (jack),AMP LINE OUT, Line in, and Mic in (in header)
Audio Amplifer	2W per channel
Ethernet	
LAN Chip	2 x Realtek 8111E (Optional 2nd LAN CO-lay with KB/MS)
Ethernet Interface	10/100/1000 Base-Tx Gigabit Ethernet Compatible
Mechanical & Environmental	
Power Requirement	+12V ~28V
ACPI	Single power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
Power Type	AT/ ATX
Operating Temp.	0 to 60°C (32~140 °F)
Storage Temp.	-40~75°C (-40~167 °F)
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	8" x 5.75"x 0.75" (203 mm x 146 mm x 19mm)
Weight	0.55lb (0.25kg)

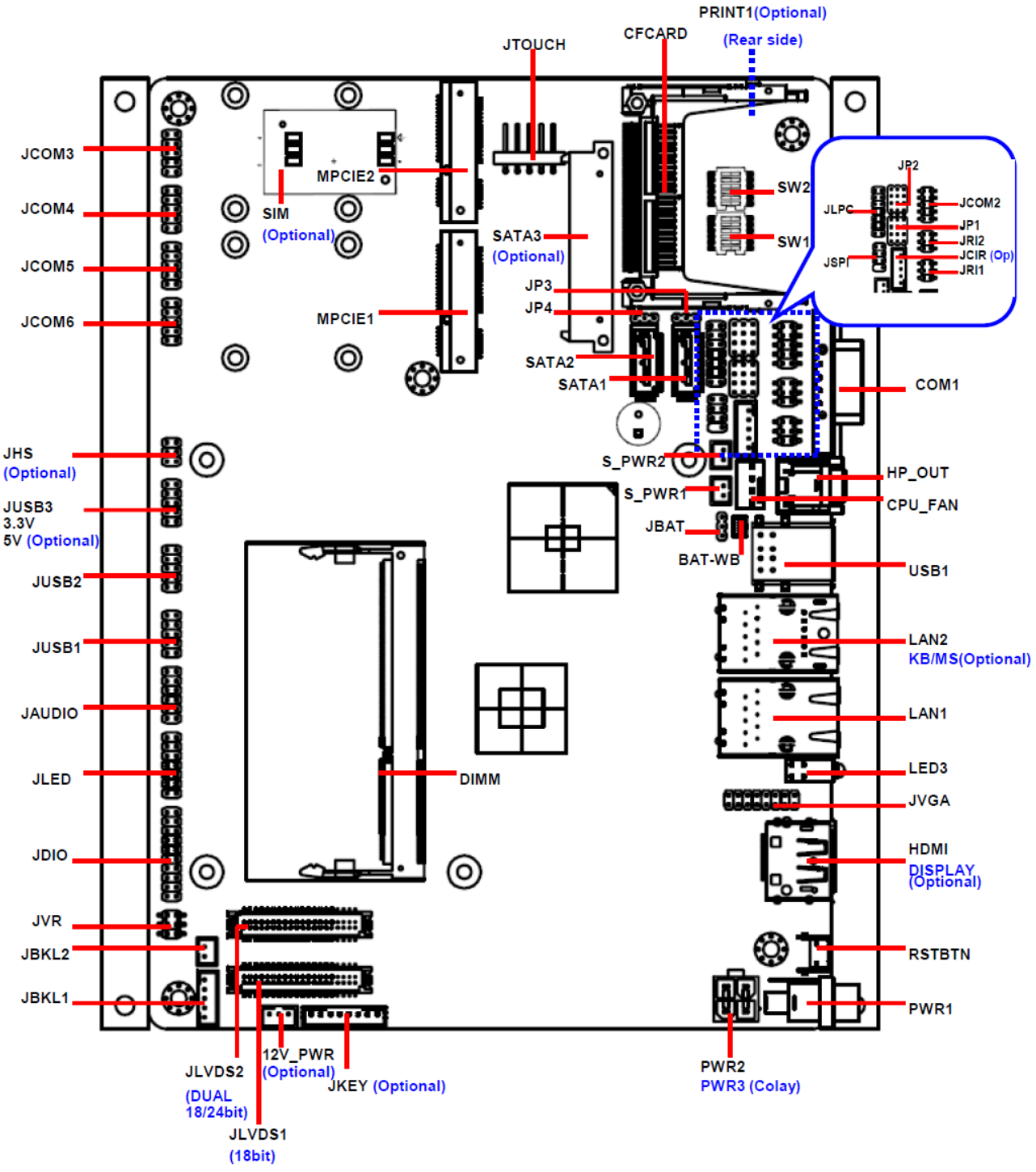
1.6 Architecture Overview – Block Diagram

The following block diagram shows the architecture and main components of EBM-A50M.



2. Hardware Configuration

2.1 Product Overview



NOTE: EITHER18 bit LVDS OR Dual channel 18/24-bit LVDS

2.2 Installation Procedure

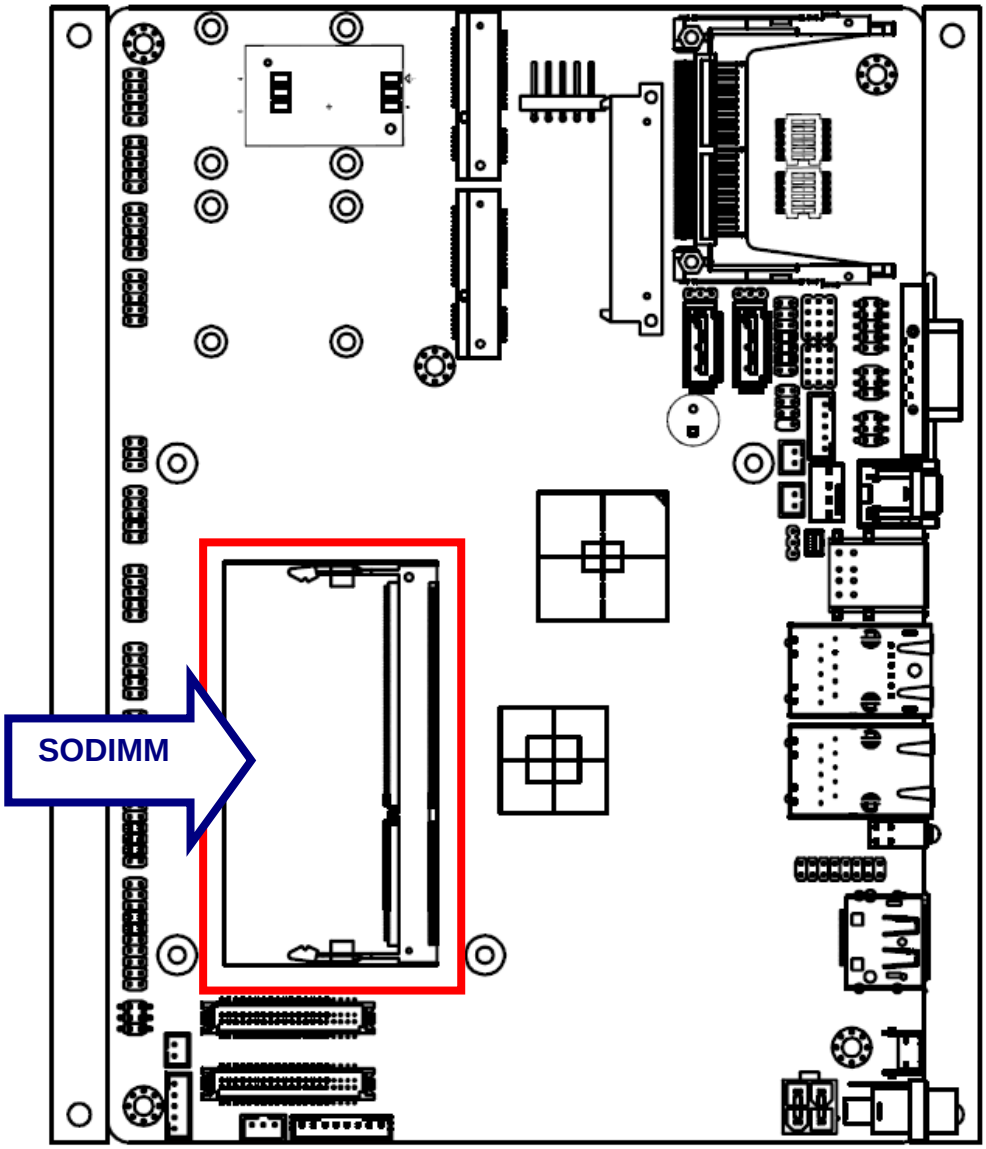
This chapter explains you the instructions of how to setup your system.

1. Turn off the power supply.
2. Insert the SODIMM module (be careful with the orientation).
3. Insert all external cables for hard disk, floppy, keyboard, mouse, USB etc. except for flat panel. A CRT monitor must be connected in order to change CMOS settings to support flat panel.
4. Connect power supply to the board via the ATXPWR.
5. Turn on the power.
6. Enter the BIOS setup by pressing the delete key during boot up. Use the "LOAD BIOS DEFAULTS" feature. The ***Integrated Peripheral Setup*** and the ***Standard CMOS Setup*** Window must be entered and configured correctly to match the particular system configuration.
7. If TFT panel display is to be utilized, make sure the panel voltage is correctly set before connecting the display cable and turning on the power.

Note: Make sure the heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause the system to hang or unstable

2.2.1 Main Memory

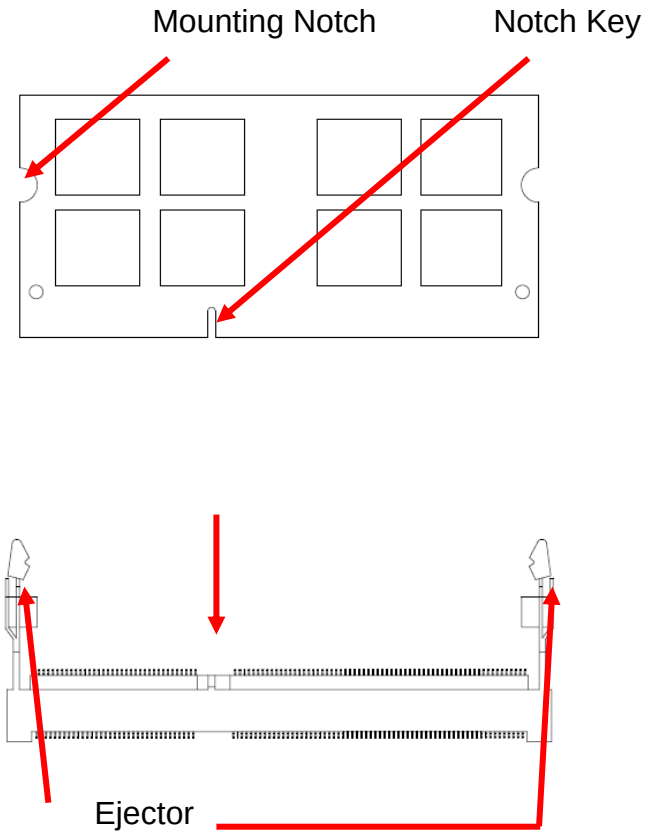
EBM-A50M provides Onboard 2G DDR3 1333 SDRAM, and One 204-pin DDR3 SODIMM socket supports up to 4GB DDR3 1333 SDRAM



Make sure to unplug the power supply before adding or removing SODIMMs or other system components. Failure to do so may cause severe damage to both the board and the components.

- Locate the SODIMM socket on the board.
- Hold two edges of the SODIMM module carefully. Avoid touching its connectors.

- Align the notch key on the module with the rib on the slot.
- Firmly press the modules into the socket which automatically snaps into the mounting notch. Do not force the SODIMM module in with extra force as the SODIMM module only fits in one direction.



204-pin DDR3 SODIMM

- To remove SODIMM modules, simultaneously push the two ejector tabs outward, then pull out the SODIMM module.

Note:

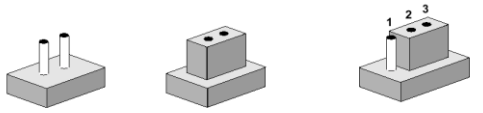
(1) Please do not change any DDR3 SDRAM parameter in BIOS setup to increase your system's performance without acquiring technical information in advance.

(2) Static electricity can damage the electronic components of the computer or optional boards. Before proceeding, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

2.3 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
JBAT	Clear CMOS	3 x 1 header, pitch 2.0mm
JHS	Handset speaker Mode selector (Optional)	3 x 2 header, pitch 2.0mm
JP1	Serial port 1 –RS-232/ 422/ 485 selector	4 x 3 header, pitch 2.0mm
JP2	Serial port 2 –RS-232/ 422/ 485 selector	4 x 3 header, pitch 2.0mm
JP3	SATA 1 Pin 7 Power Mode selector	3 x 1 header, pitch 2.0mm
JP4	SATA 2 Pin 7 Power Mode selector	3 x 1 header, pitch 2.0mm
JRI1	Serial port 1 pin9 signal selector	3 x 2 header, pitch 2.0mm
JRI2	Serial port 2 pin9 signal selector	3 x 2 header, pitch 2.0mm
JVR	LCD backlight brightness adjustment	3 x 2 header, pitch 2.0mm
SW1	Multi-function select	DIP switch 6pin
SW2	Serial port 1/ 2 – RS232/ 422/ 485 mode selector	DIP switch 6pin

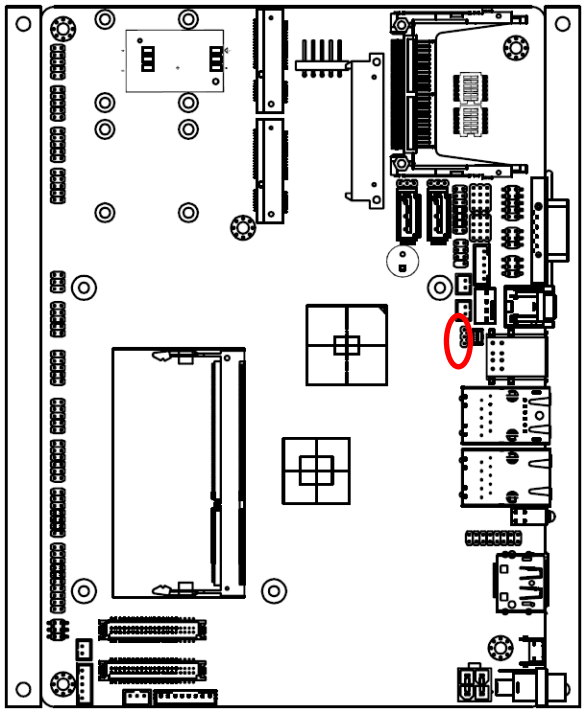
Connectors

Label	Function	Note
BAT-WB	Battery connector	2 x 1 wafer, pitch 1.25mm
CFCARD	Compact Flash card connector	
COM1	Serial Port 1 connector	D-sub 9 pin, male
CPU_FAN	CPU fan connector	3 x 1 wafer, pitch 2.54mm
DIMM	204-pin DDR3 SODIMM socket	
JAUDIO	Audio connector	6 x 2 header, pitch 2.0mm
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.0mm
JBKL2	LCD Inverter connector	2 x 1 wafer, pitch 2.0mm
JCIR	CIR connector (Optional)	5 x 1 wafer, pitch 2.0mm
JCOM2	Serial Port 2 connector	5 x 2 header, pitch 2.0mm
JCOM3	Serial Port 3 connector	5 x 2 header, pitch 2.0mm
JCOM4	Serial Port 4 connector	5 x 2 header, pitch 2.0mm
JCOM5	Serial Port 5 connector	5 x 2 header, pitch 2.0mm
JCOM6	Serial Port 6 connector	5 x 2 header, pitch 2.0mm
JDIO	General purpose I/O connector	10 x 2 header, pitch 2.0mm
JKEY	OSD for front panel key (Optional)	8 x 1 wafer, pitch 2.0mm
JLED	LED indicator connector	7 x 2 header, pitch 2.0mm
JLVDS1	LVDS Connector (18bit)	DIN 40-pin wafer, pitch 1.25mm
JLVDS2	LVDS Connector (DUAL 24bit)	DIN 40-pin wafer, pitch 1.25mm
JLPC	Low Pin Count Interface connector	7 x 2 header, pitch 2.0mm
JSPI	SPI connector	4 x 2 header, pitch 2.0mm
JTOUCH	Touch panel connector	5 x 1 header, pitch 2.54mm
JUSB1	USB connector 2&3	5 x 2 header, pitch 2.0mm
JUSB2	USB connector 4&5	5 x 2 header, pitch 2.0mm
JUSB3	USB connector 6&7 **3.3V (Default) 5V is (Optional)**	5 x 2 header, pitch 2.0mm
JVGA	VGA connector	8 x 2 header, pitch 2.0mm
HDMI	HDMI connector/ DISPLAY (Optional)	
HP_OUT	Audio line-out connector	
LAN1	RJ-45 Ethernet 1	
LAN2	RJ-45 Ethernet 2/KB/MS (Optional)	
LED	LED indicator connector	
MPCIE1	Mini-PCI connector 1	
MPCIE2	Mini-PCI connector 2 (supports Optional SIM CARD)	
PRINT	Optional LPT Connector	
PWR1	Power connector	
PWR2	Power connector (colay PWR3)	2 x 2 wafer, pitch 2.0mm
RSBTN	Reset button	

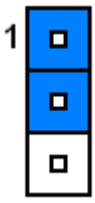
S_PWR1	Serial ATA power connector 1	2 x 1 wafer, pitch 2.0mm
S_PWR2	Serial ATA power connector 2	2 x 1 wafer, pitch 2.0mm
SATA1	Serial ATA connector 1	
SATA2	Serial ATA connector 2	
SATA3	SATA-HDD connector (Optional)	
USB1	USB connector 0&1	
12V_PWR	12V Power Output (Max:1A) (Optional)	3 x 1 wafer, pitch 2.0mm

2.4 Setting Jumpers & Connectors

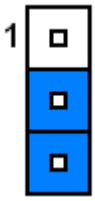
2.4.1 Clear CMOS (JBAT)



Protect*

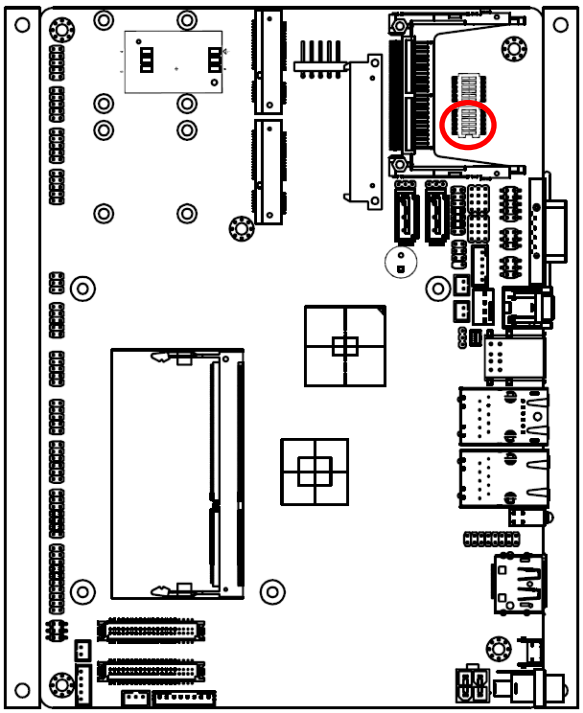


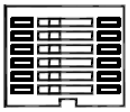
Clear CMOS



*** Default**

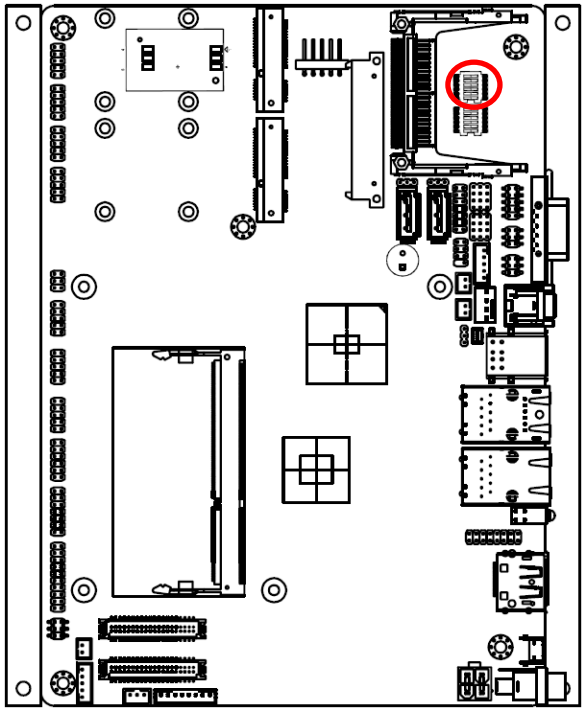
2.4.2 Multi-function selector (SW1)

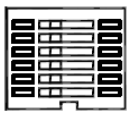




	ON	OFF
1	AT SEL	ATX SEL
2	CF Master	CF Slave
3	Touch off	Touch on
4	Touch: 4W	Touch: 5W
5	GPIO032:L	GPIO032:H
6	GPIO033:L	GPIO033:H

2.4.3 Serial port 1/ 2 - RS-232/ 422/ 485 mode selector (SW2)





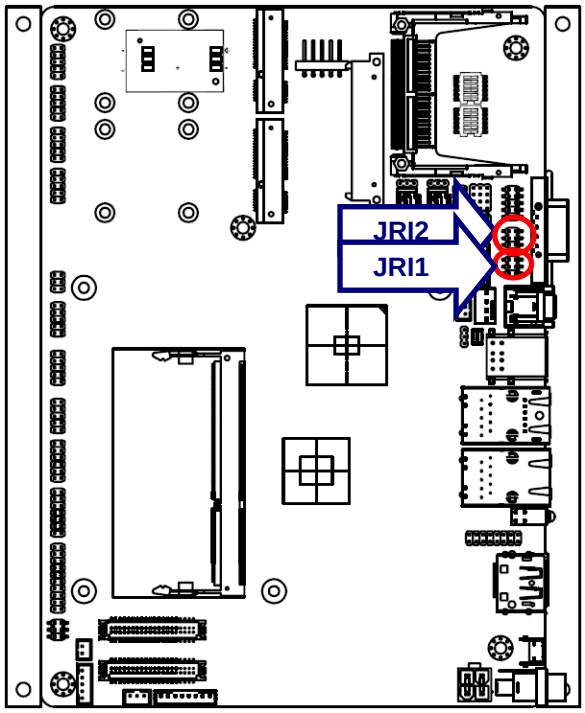
In Serial Port 1 mode

	RS-232	RS-422	RS-485
1	ON	OFF	OFF
2	OFF	ON	OFF
3	OFF	OFF	ON

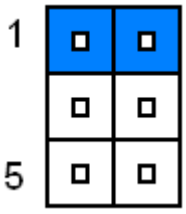
In Serial Port 2 mode

	RS-232	RS-422	RS-485
4	ON	OFF	OFF
5	OFF	ON	OFF
6	OFF	OFF	ON

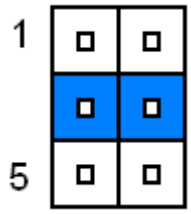
2.4.4 Serial port 1/ 2 pin9 signal selector (JRI1/ JRI2)



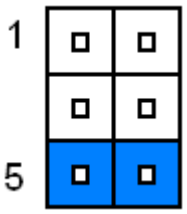
Ring*



+5V

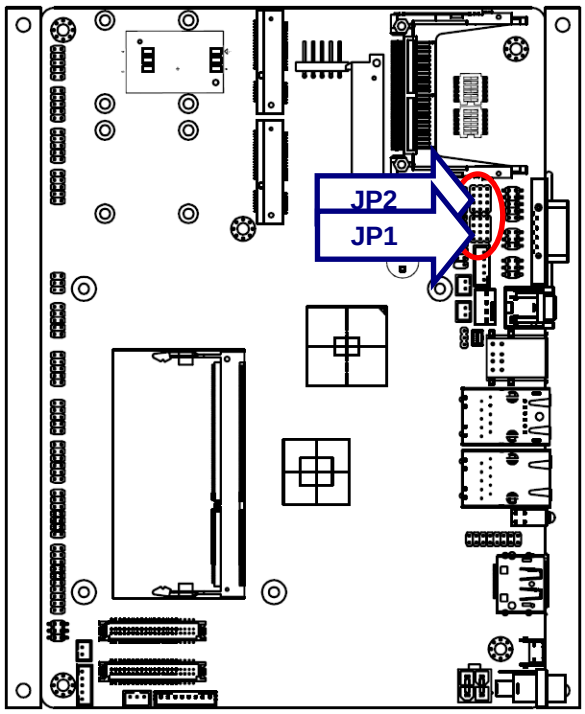


+12V

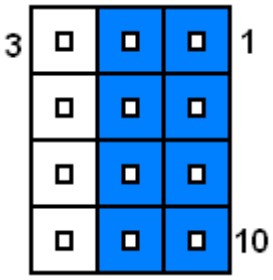


*** Default**

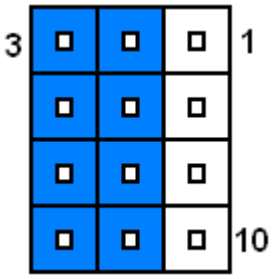
2.4.5 Serial port 1/ 2 RS-232/ 422/ 485 mode selector (JP1/ JP2)



RS-232*

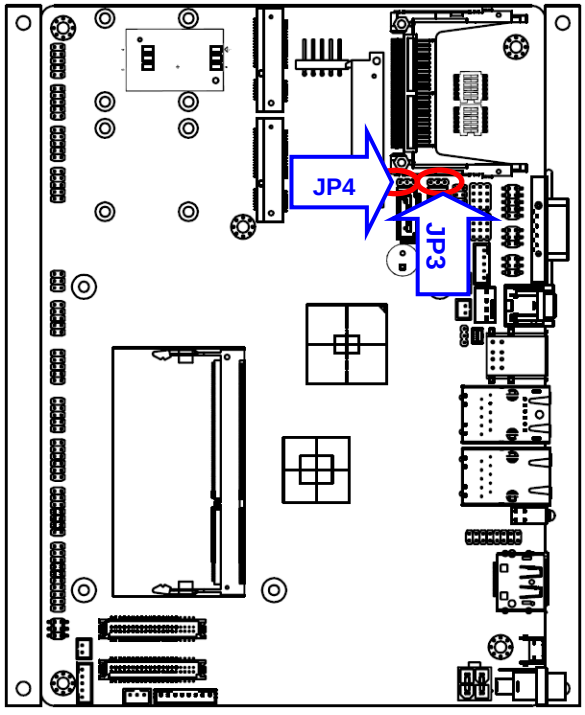


RS-422/ 485

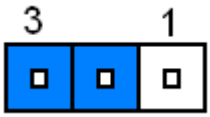


*** Default**

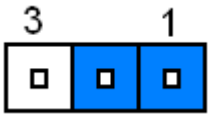
2.4.6 SATA 1/2 Pin 7 Power mode selector (JP3/JP4)



Clear*



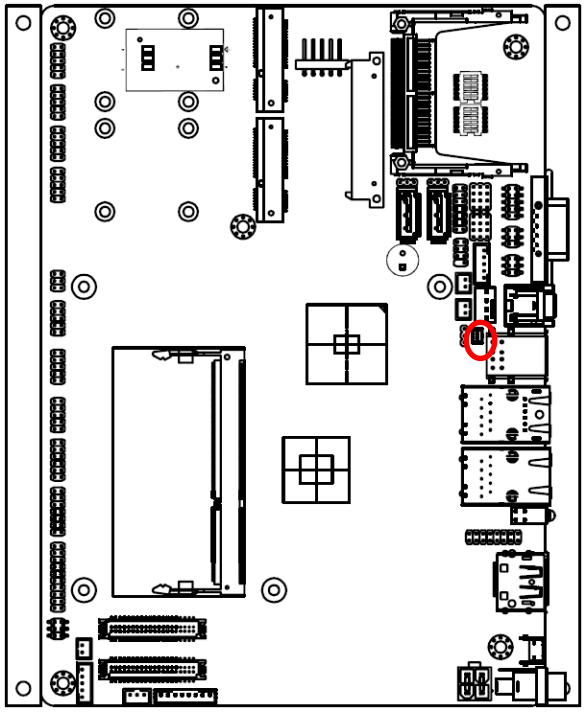
Power

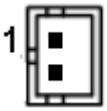


Signal	PIN
SATA_PWR1	1
SATA1_P7	2
GND	3

*** Default**

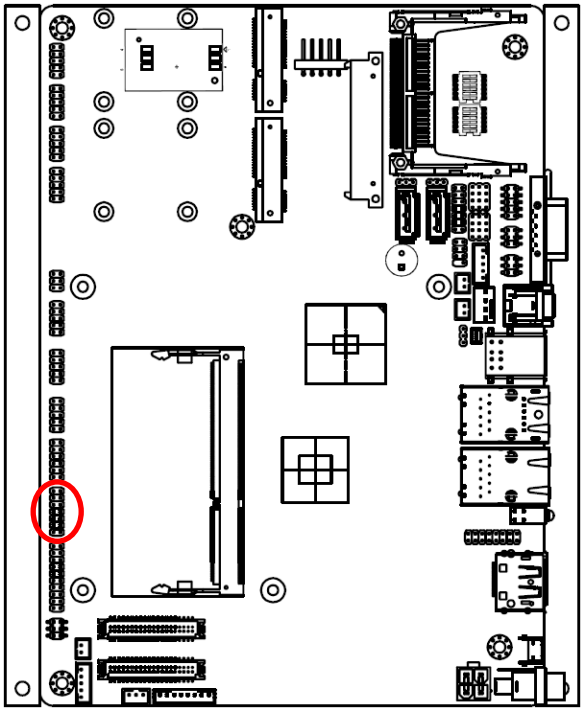
2.4.7 Battery connector (BAT-WB)

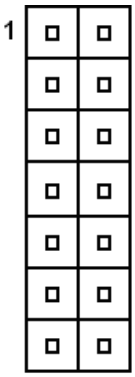




Signal	PIN
BAT	1
GND	2

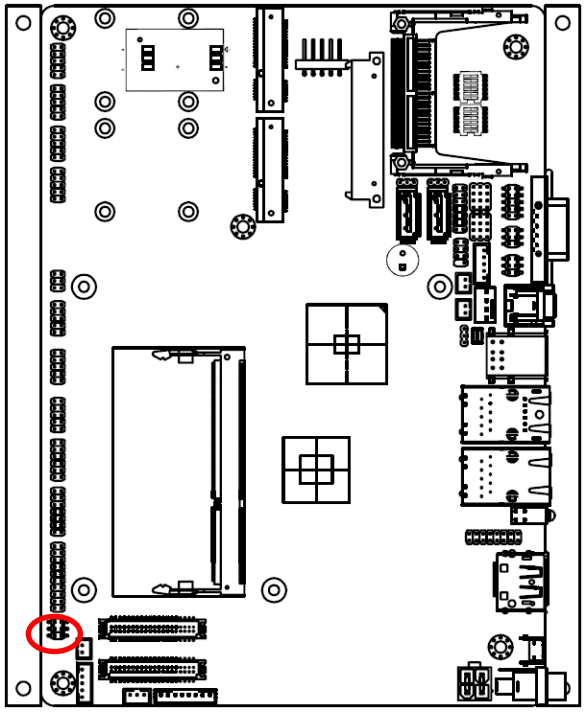
2.4.8 LED indicator connector (JLED)





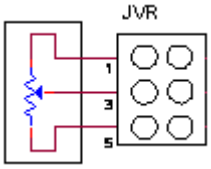
Signal	PIN	PIN	Signal
GND	1	2	+3.3V
HD_LED#	3	4	+3.3V
LAN1_ACT	5	6	3.3V_SB
LAN2_ACT	7	8	3.3V_SB
ROUT-	9	10	ROUT+
LOUT-	11	12	LOUT+
PWRBTN#	13	14	GND

2.4.9 LCD backlight brightness adjustment (JVR)



*** Default**

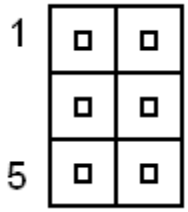
Signal	PIN	PIN	Signal
+5V	1	2	DC
VR	3	4	VR
GND	5	6	PWM



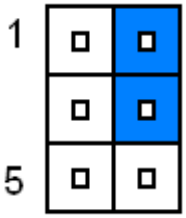
Variation Resistor

(Recommended: 4.7KΩ, >1/16W)

Mode1: VR type

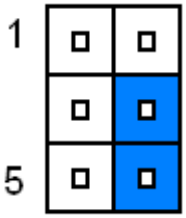


Mode 2: DC type*



Note: DC: 0V ~5V

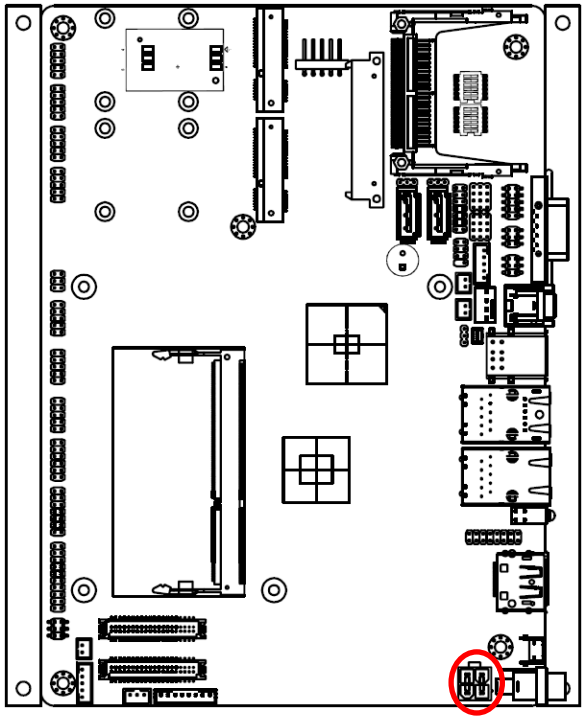
Mode 3: Pulse-Width Modulated type

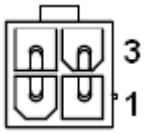


Note:

For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by JBKL1. Please see the JBKL1 section for detailed circuitry information.

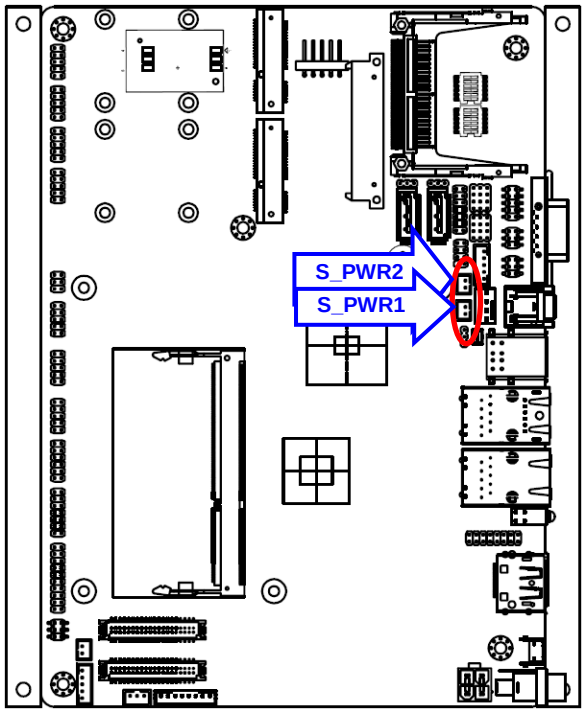
2.4.10 Power connector (PWR2)

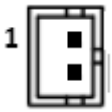




Signal	PIN	PIN	Signal
VIN	4	3	VIN
GND	2	1	GND

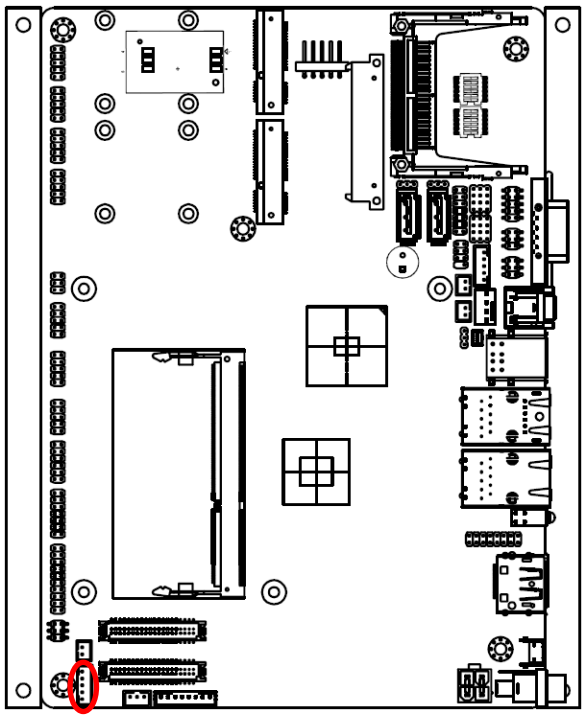
2.4.11 Serial ATA power connector (S_PWR1 / S_PWR2)





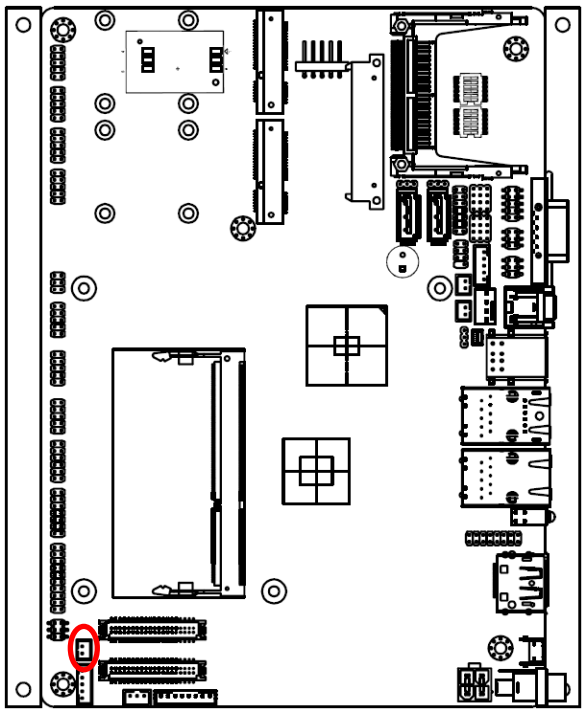
Signal	PIN
GND	1
SATA_PWR	2

2.4.12 LCD Inverter connector (JBKL1)



Signal	PIN
+5V	5
BRIGHT	4
BLK_ON	3
GND	2
+12V	1

2.4.13 LCD Inverter connector (JBKL2)



Signal	PIN
GND	2
+12V	1

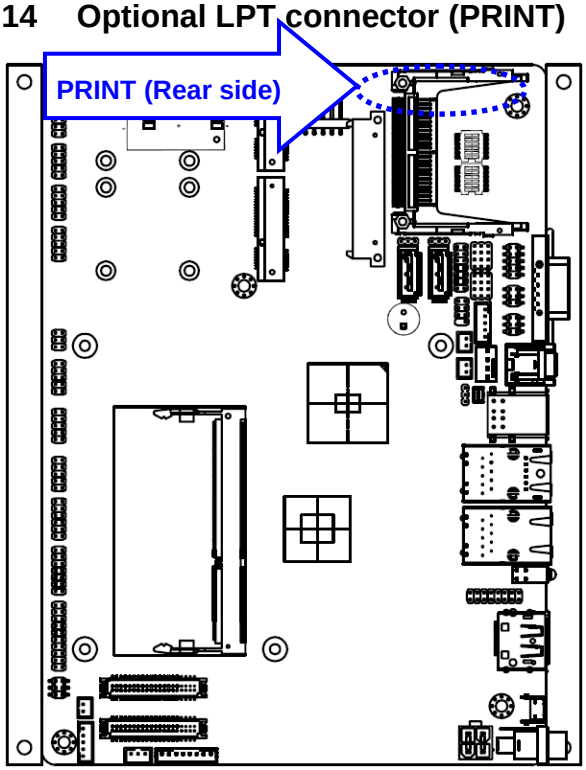
Note:

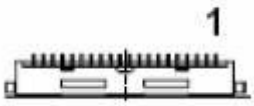
For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by **JVR**. Please see the **JVR** section for detailed circuitry information.

2.3.13.1 Signal Description – LCD Inverter Connector (JBKL1/ JBKL2)

Signal	Signal Description
BRIGHT	Vadj = 0.75V ~ 4.25V (Recommended: 4.7KΩ, >1/16W)
BKL_ON	LCD backlight ON/OFF control signal

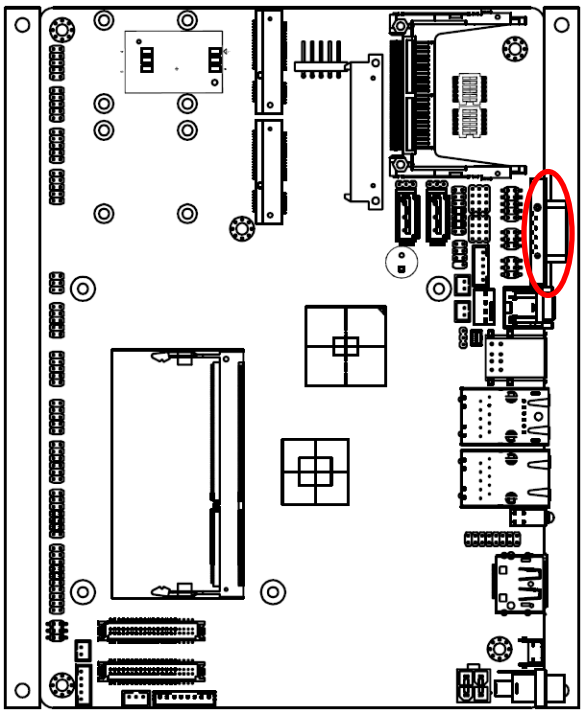
2.4.14 Optional LPT connector (PRINT)

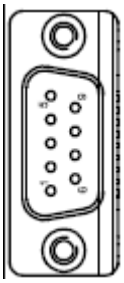




Signal	PIN
GND	1
GND	2
GND	3
SLIN#	4
PAR_INIT#	5
ERR#	6
AFD#	7
SLCT	8
PE	9
BUSY	10
ACK#	11
PTD7	12
PTD6	13
PTD5	14
PTD4	15
PTD3	16
PTD2	17
PTD1	18
PTD0	19
STB-	20

2.4.15 Serial port 1 connector (COM1)





In RS-232 Mode

Signal	PIN	PIN	Signal
DCD1	1	2	RxD1
TxD1	3	4	DTR1
GND	5	6	DSR1
RTS1	7	8	CTS1
RI1	9		NC

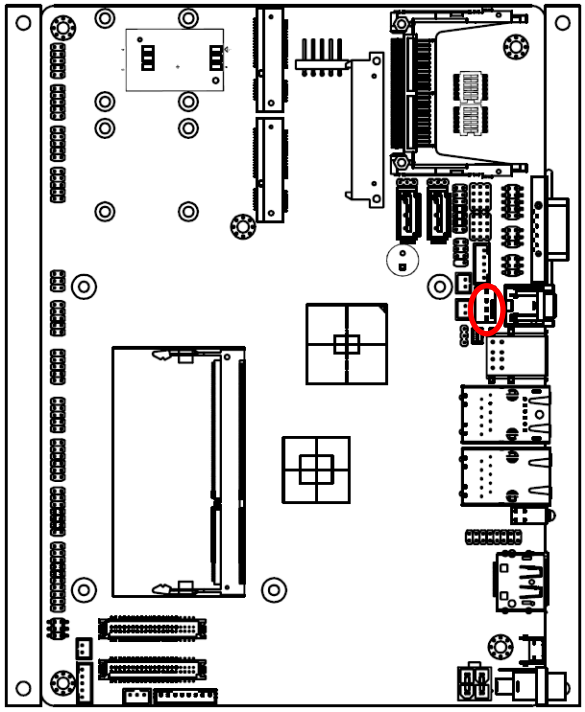
In RS-422 Mode

Signal	PIN	PIN	Signal
TxD1-	1	2	RxD1+
TxD1+	3	4	RxD1-
GND	5	6	NC
NC	7	8	NC
NC	9		NC

In RS-485 Mode

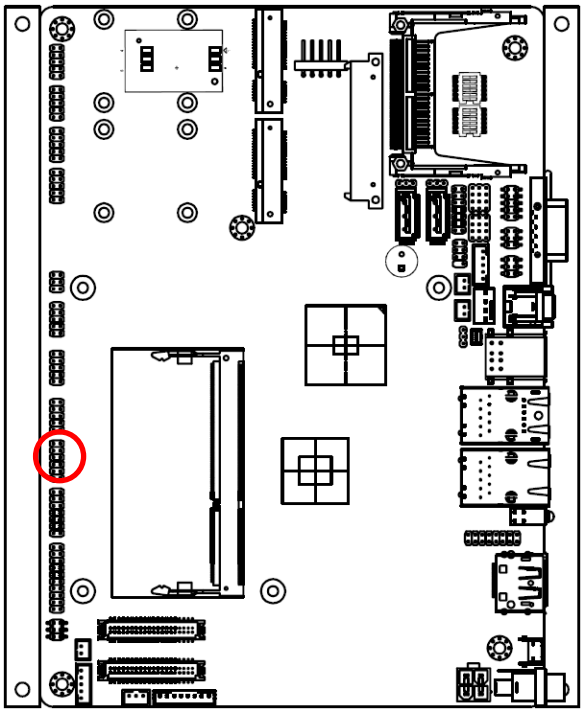
Signal	PIN	PIN	Signal
DATA1-	1	2	NC
DATA1+	3	4	NC
GND	5	6	NC
NC	7	8	NC
NC	9		NC

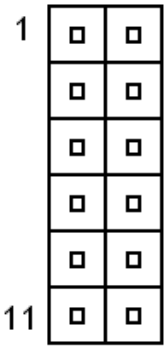
2.4.16 CPU fan connector (CPU_FAN)



Signal	PIN
FANO	4
FANI	3
+12V	2
GND	1

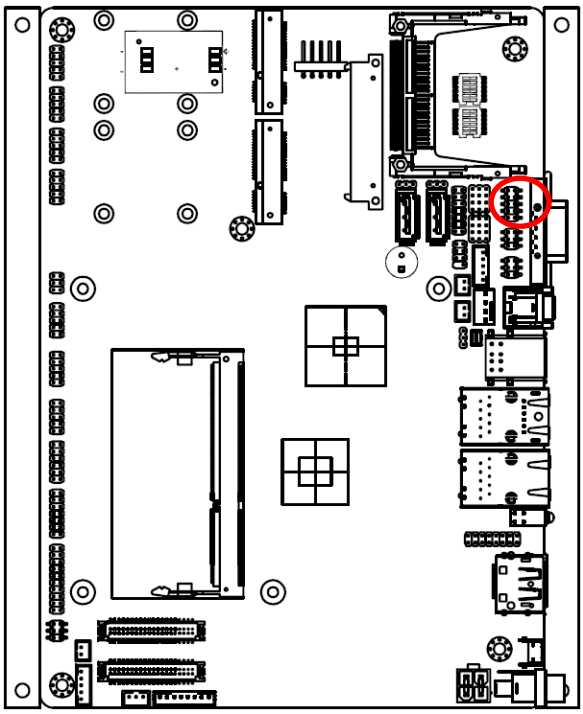
2.4.17 Audio connector (JAUDIO)

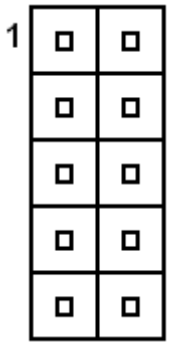




Signal	PIN	PIN	Signal
LOUT_R	1	2	LOUT_L
GND	3	4	GND
LINEIN_R	5	6	LINEIN_L
MIC-R	7	8	MIC-L
APORT_D-JD	9	10	LINE1-JD
MIC1-JD	11	12	GND

2.4.18 Serial port 2 connector (JCOM2)





In RS-232 Mode

Signal	PIN	PIN	Signal
DCD2	1	2	RxD2
TxD2	3	4	DTR2
GND	5	6	DSR2
RTS2	7	8	CTS2
RI2	9	10	NC

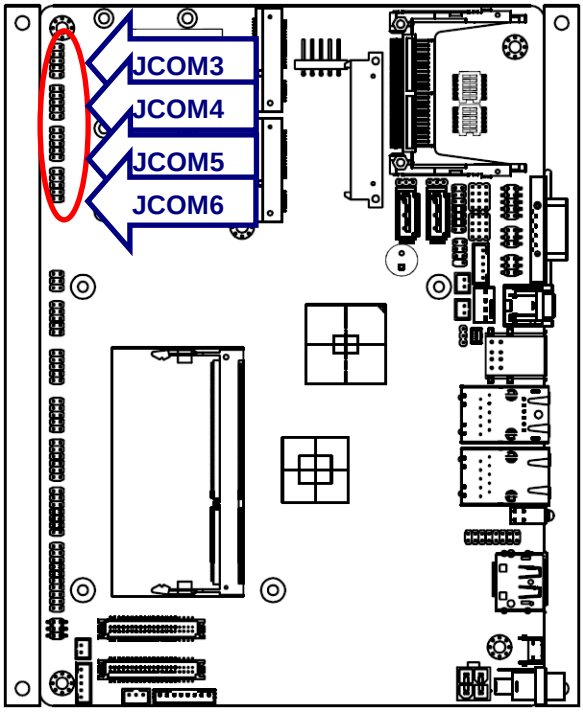
In RS-422 Mode

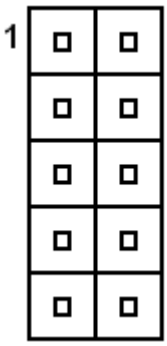
Signal	PIN	PIN	Signal
TxD2-	1	2	RxD2+
TxD2+	3	4	RxD2-
GND	5	6	NC
NC	7	8	NC
NC	9	10	NC

In RS-485 Mode

Signal	PIN	PIN	Signal
DATA2-	1	2	NC
DATA2+	3	4	NC
GND	5	6	NC
NC	7	8	NC
NC	9	10	NC

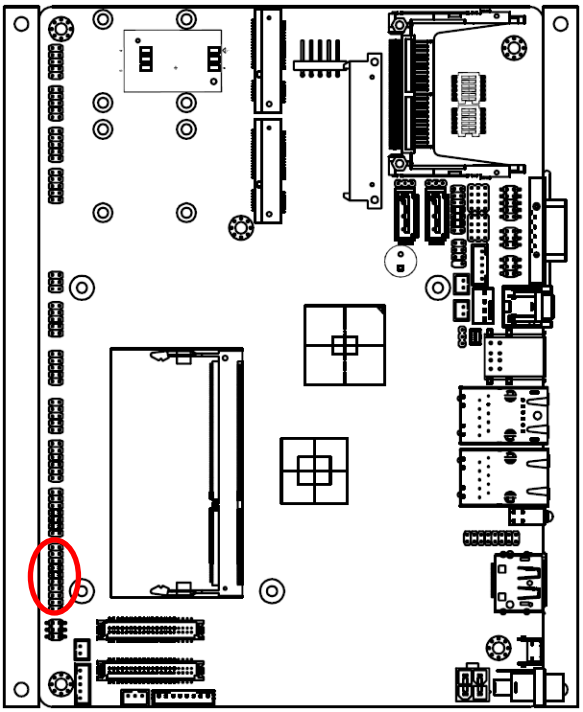
2.4.19 Serial port 3/ 4/ 5/ 6 connector (JCOM3/ JCOM4/ JCOM5/ JCOM6)

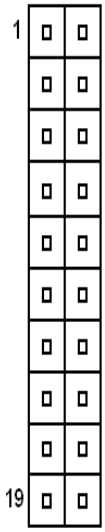




Signal	PIN	PIN	Signal
DCD	1	2	RxD
TxD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

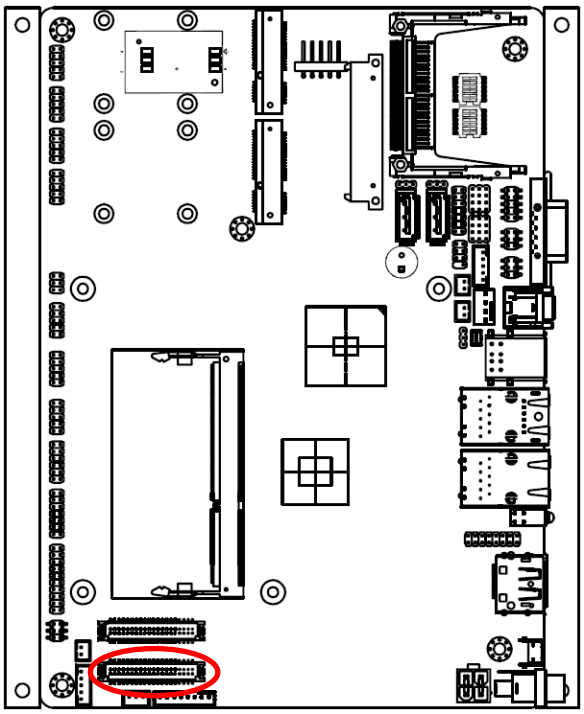
2.4.20 General purpose I/O connector (JDIO)

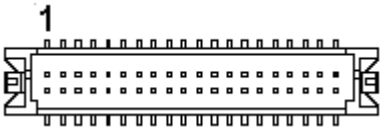




Signal	PIN	PIN	Signal
DIO0	1	2	DIO10
DIO1	3	4	DIO11
DIO2	5	6	DIO12
DIO3	7	8	DIO13
DIO4	9	10	DIO14
DIO5	11	12	DIO15
DIO6	13	14	DIO16
DIO7	15	16	DIO17
SMB_CLK_S	17	18	SMB_DATA_S
GND	19	20	+5V

2.4.21 LVDS connector (JLVDS1)



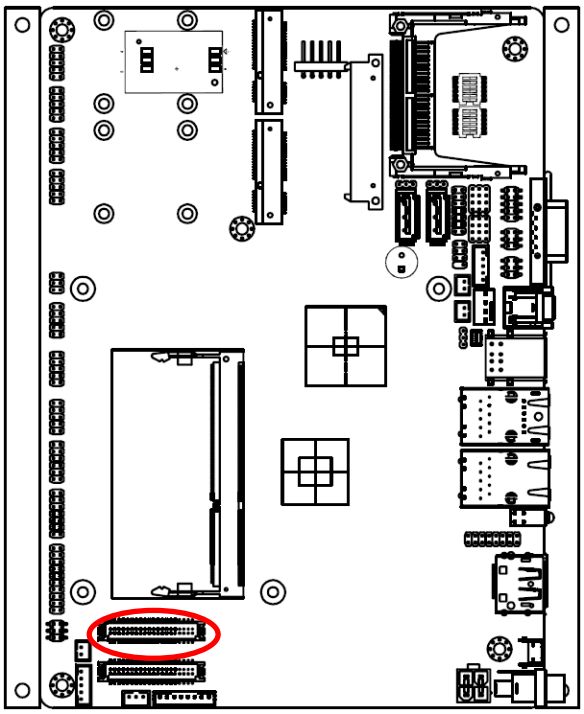


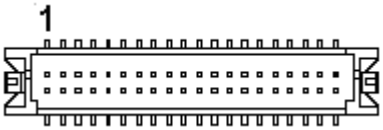
Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
I^2C_DAT	6	5	I^2C_CLK
GND	8	7	GND
Txout0	10	9	Txout1
Txout0#	12	11	Txout1#
GND	14	13	GND
Txout2	16	15	NC
Txout2#	18	17	NC
GND	20	19	GND
NC	22	21	NC
NC	24	23	NC
GND	26	25	GND
NC	28	27	NC
NC	30	29	NC
GND	32	31	GND
Txclk	34	33	NC
Txclk#	36	35	NC
GND	38	37	GND
+12V	40	39	+12V

2.3.21.1 Signal Description – LVDS Connecter (JLVDS)

Signal	Description
I^2C_DAT, I^2C_CLK	I^2C interface for panel parameter EEPROM. This EERPOM is mounted on the LVDS receiver. The data in the EEPROM allows the EXT module to automatically set the proper timing parameters for a specific LCD panel.

2.4.22 LVDS connector (JLVDS2)



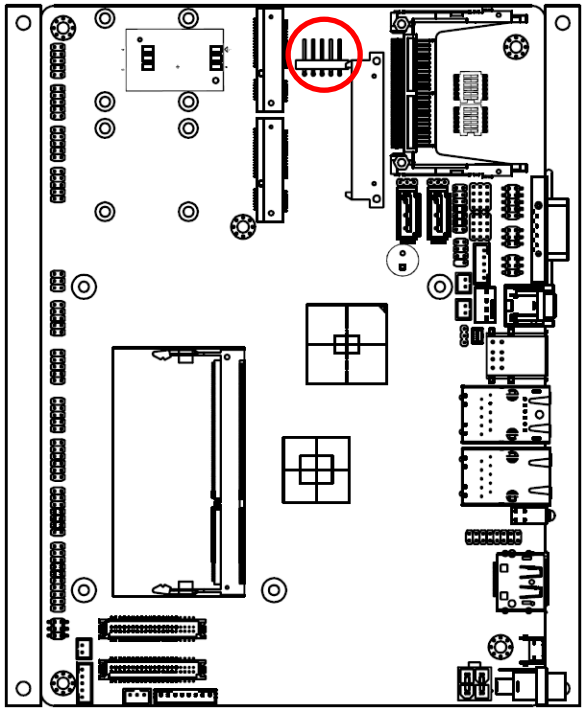


Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
NC	6	5	NC
GND	8	7	GND
Txout0	10	9	Txout1
Txout0#	12	11	Txout1#
GND	14	13	GND
Txout2	16	15	Txout3
Txout2#	18	17	Txout3#
GND	20	19	GND
Txout4	22	21	Txout5
Txout4#	24	23	Txout5#
GND	26	25	GND
Txout6	28	27	Txout7
Txout6#	30	29	Txout7#
GND	32	31	GND
Txclk1	34	33	Txclk2
Txclk1#	36	35	Txclk2#
GND	38	37	GND
+12V	40	39	+12V

Note: Single/Dual 24-bit LVDS

1. CRT's resolution < LCD's resolution.
   If we boot from CRT & LCD, the resolution is decided by CRT's resolution.
   If we boot from LCD only and connect CRT to the OS, LCD works well but the CRT will have wrong resolution.
2. CRT's resolution > LCD's resolution.
   Everything is fine.

2.4.23 Touch panel connector (JTOUCH)

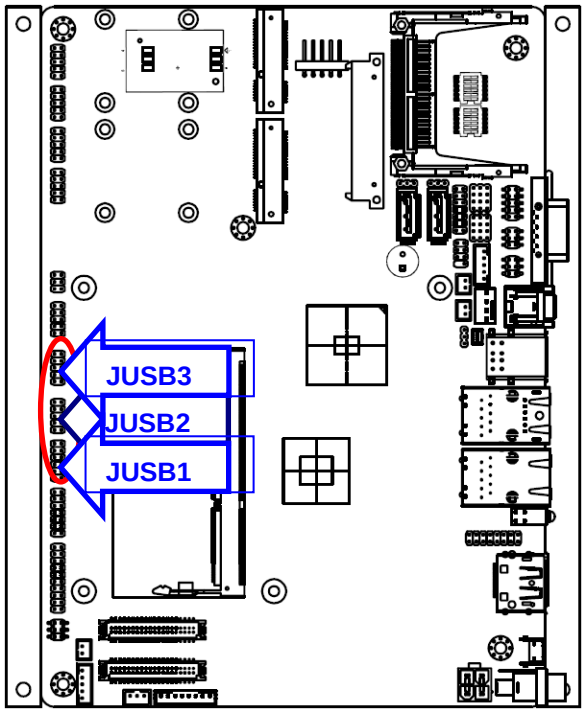


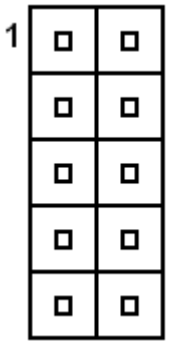
Signal	PIN
UL	1
UR	2
PROBE	3
LR	4
LL	5

NOTE: Under 4W situation

UL=X+, UR=Y+, LR=Y-, LL=X-

2.4.24 USB connector 2&3, 4&5, 6&7 (JUSB1/ JUSB2 / JUSB3)



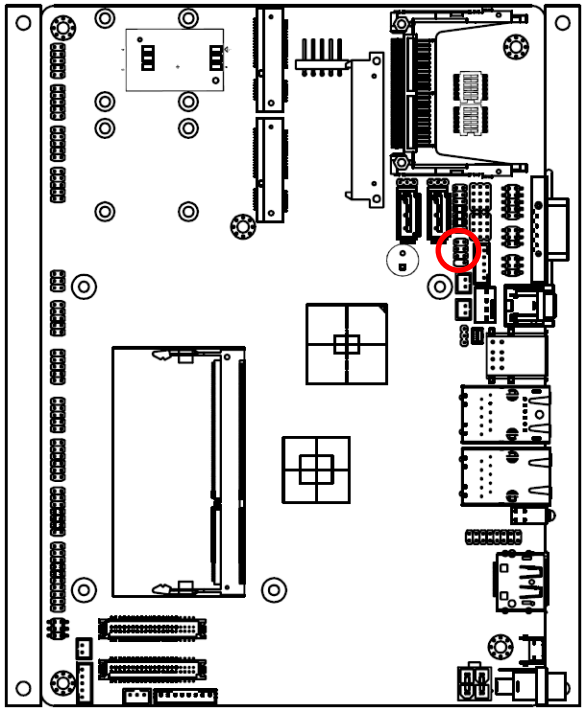


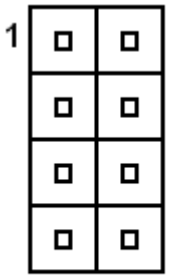
Signal	PIN	PIN	Signal
+5V	1	2	GND
D-	3	4	GND
D+	5	6	D+
GND	7	8	D-
GND	9	10	+5V

Note: JUSB3-→**3.3V**

5V is **(Optional)**

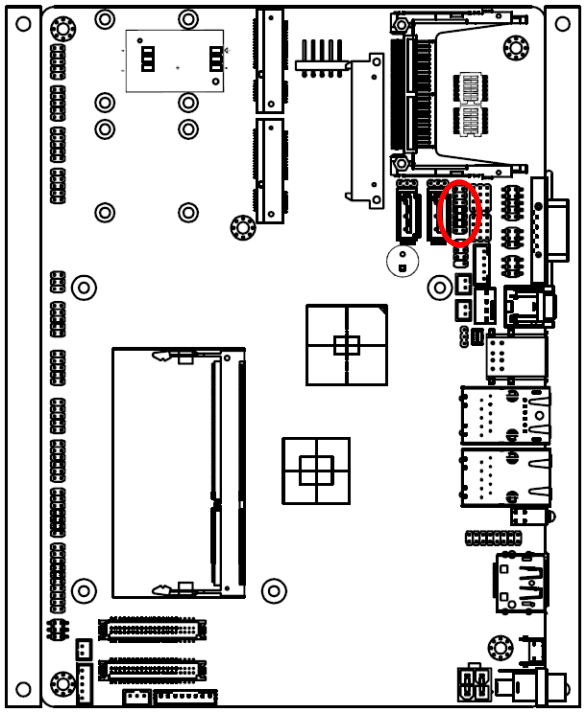
2.4.25 SPI connector (JSPI)

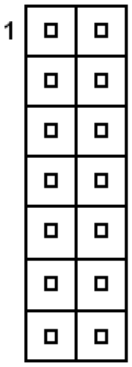




Signal	PIN	PIN	Signal
+3.3V	1	2	GND
CS#	3	4	CLK
DI_R	5	6	DO
HOLD	7		

2.4.26 Low Pin Count Interface connector (JLPC)





Signal	PIN	PIN	Signal
AD0	1	2	+3.3V
AD1	3	4	A_RST#
AD2	5	6	FRAME#
AD3	7	8	JLPC
LPC_SERIRQ	9	10	GND
+5V	11	12	GND
+5V	13	14	LDRQ1#

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 CMOS 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> immediately after switching the system on, or
By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL 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 CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ 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
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

- **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 is no longer able to boot, the AMI BIOS supports an override to the CMOS settings which resets your system to its defaults.

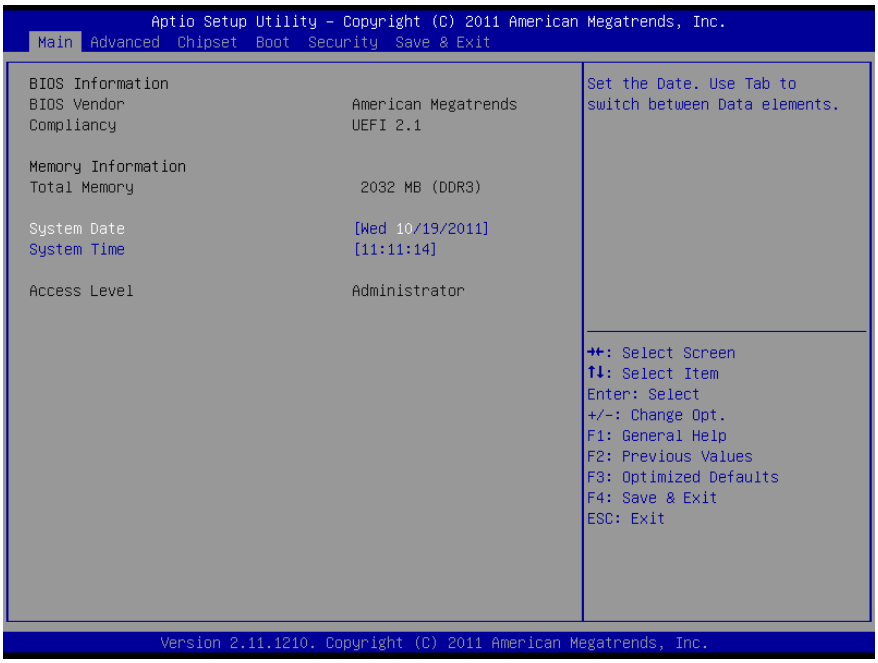
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and 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 AMI BIOS CMOS 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 Date

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

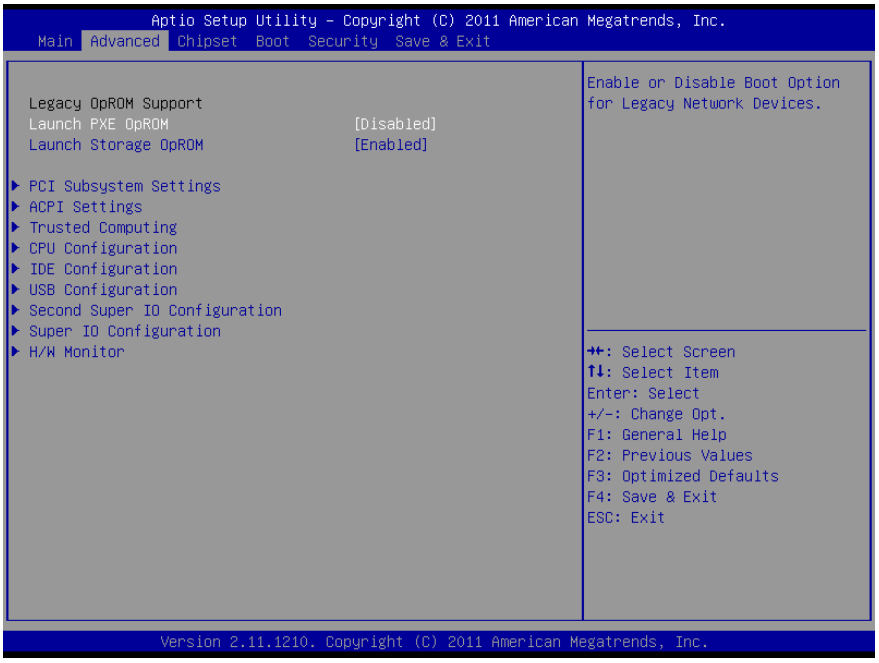
3.6.1.2 System Time

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

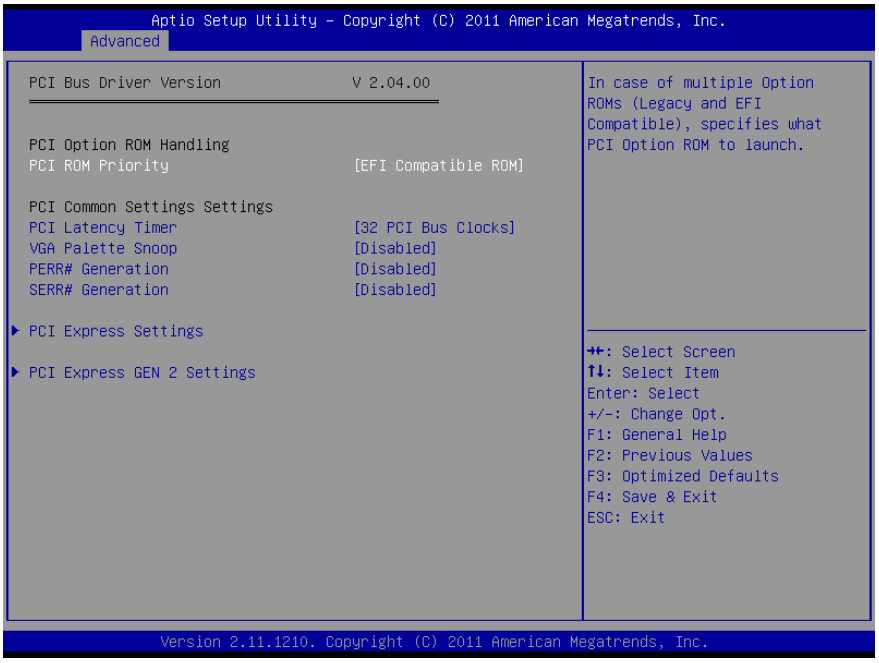
Note: BIOS setup screens shown in this chapter are for reference only, and may not exactly match what you see on your screen. Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.2 Advanced BIOS settings

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

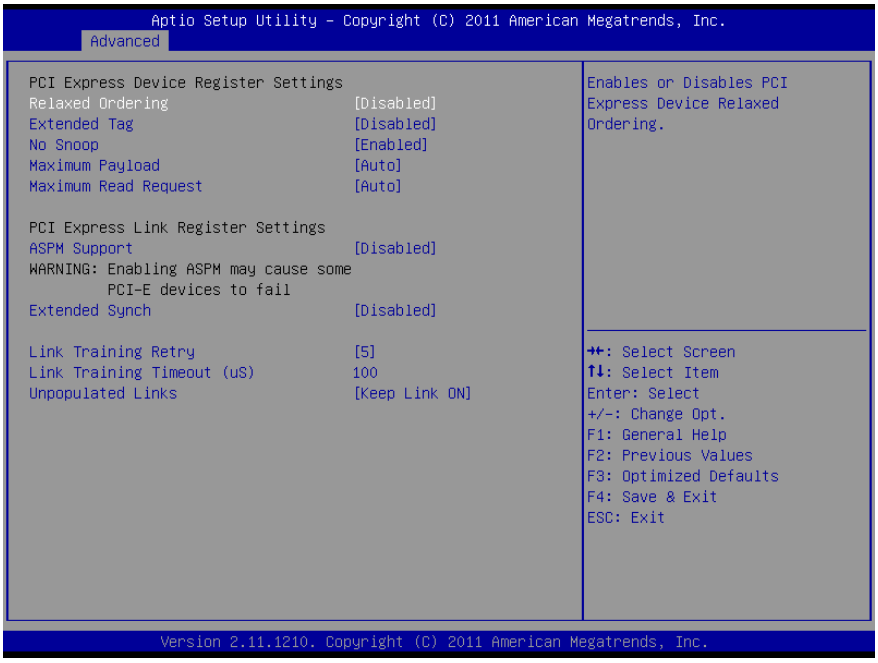


3.6.2.1 PCI subsystem Settings



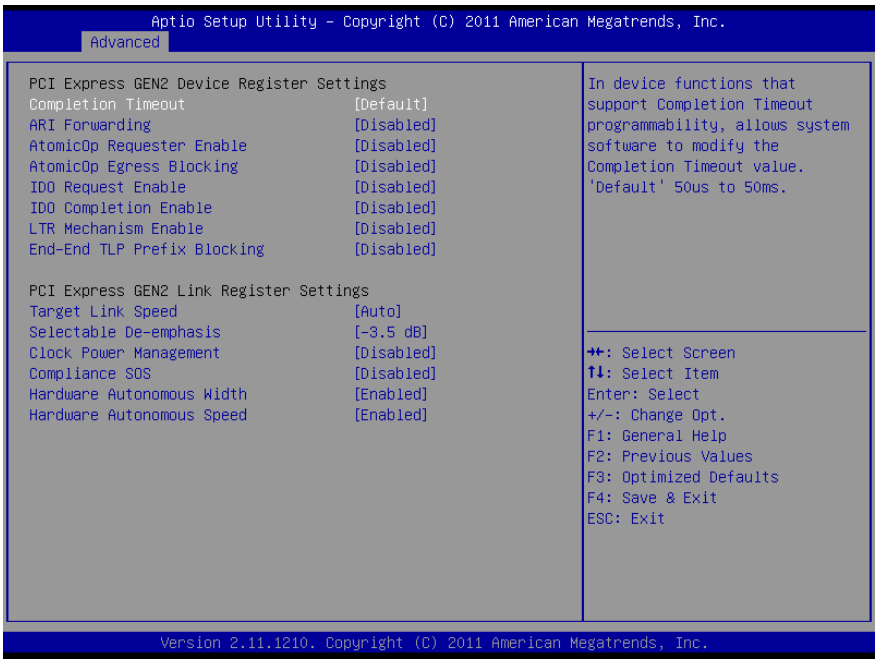
Item	Options	Description
PCI ROM Priority	EFI Compatible ROM Legacy ROM	In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.
PCI Latency Timer	32 PCI Bus Clocks 64 PCI Bus Clocks 96 PCI Bus Clocks 128 PCI Bus Clocks 160 PCI Bus Clocks 192 PCI Bus Clocks 224 PCI Bus Clocks 248 PCI Bus Clocks	Value to be programmed into PCI Latency Timer Register
VGA Palette Snoop	Disabled Enabled	Enables or Disables VGA palette Registers Snooping.
PERR# Generation	Disabled Enabled	Enables or Disables PCI device to generate PERR#
SERR# Generation	Disabled Enabled	Enables or Disables PCI device to generate SERR#

3.6.2.1.1 PCI Express Settings



Item	Options	Description
Relaxed Ordering	Disabled Enabled	Enables or Disables PCI Express Device Relaxed ordering.
Extended Tag	Disabled Enabled	If ENABLED, allows Device to use 8-bit Tag field as a requester.
No Snoop	Disabled Enabled	Enables or Disables PCI Express Device No Snoop option.
Maximum Payload	Auto 128 Bytes 256 Bytes 512 Bytes 1024 Bytes 2048 Bytes 4096 Bytes	Set Maximum Payload of PCI Express Device or allow System BIOS to select the value
Maximum Read Request	Auto 128 Bytes 256 Bytes 512 Bytes 1024 Bytes 2048 Bytes 4096 Bytes	Set Maximum Read Request size of PCI Express Device or allow System BIOS to select the value
ASPM Support	Disabled Auto Force L0s	Automatically enable ASPM based on reported capabilities and known issues.
Extended Synch	Disabled Enabled	If ENABLED allows generation of Extended Synchronization patterns.
Link Training Retry	Disabled 2 3 5	Defines number of Retry Attempts software will take to retrain the link if previous training attempt was unsuccessful
Link Training Timeout (uS)	1 ~ 100	Defines number of Microseconds software will wait before polling "Link Training" bit in Link Status register. Value ranges from 1 to 100 uS.
Unpopulated Links	Keep Link ON Disable Link	In order to save power, software will disable unpopulated PCI Express links, if this option is set to "Disable Link"

3.6.2.1.2 PCI Express GEN 2 Settings

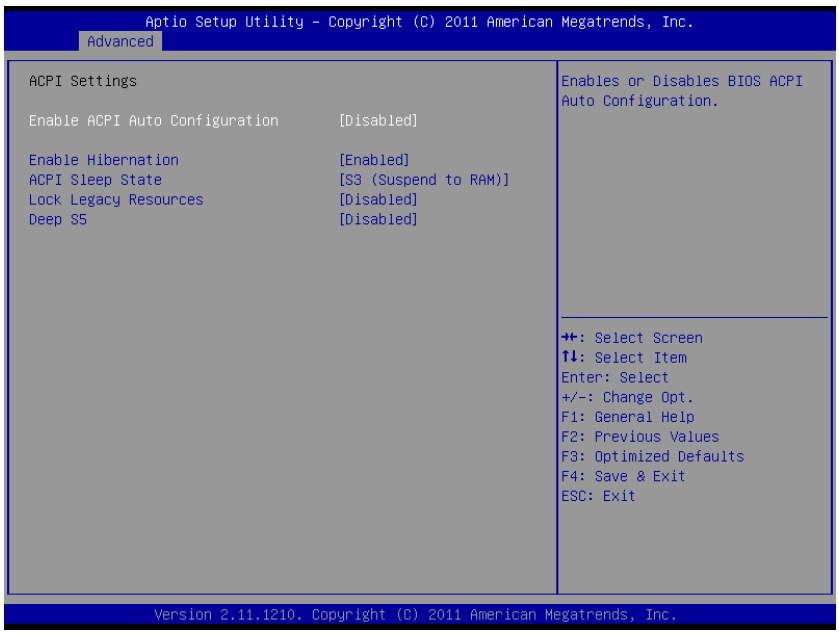


Item	Options	Description
Completion Timeout	Default Shorter Longer Disabled	In Device functions that support Completion Timeout programmability, allows system software to modify the Completion Timeout value. "Default" 50us to 50ms
ARI Forwarding	Disabled **[Default]** Enabled	If supported by hardware and set to "Enabled", the Downstream Port disables its traditional Device Number field being 0 enforcement when turning a Type1 configuration Request into a Type0 Configuration Request, permitting access to Extended Functions in an ARI Device immediately below the Port.
AtomicOp Requester Enable	Disabled Enabled	If supported by hardware and set to "Enabled", this function initiates AtomicOp Requests only if Bus Master Enable bit is in the Command Register Set
AtomicOp Egress Blocking	Disabled Enabled	If supported by hardware and set to "Enabled", outbound AtomicOp Requests via Egress Ports will be blocked.
IDO Request Enable	Disabled Enabled	If supported by hardware and set to "Enabled", this permits setting the number of ID-Based Ordering (IDO) bit (Attribute [2]) requests to be initiated.
IDO Completion Enable	Disabled Enabled	If supported by hardware and set to "Enabled", this permits setting the number of ID-Based Ordering (IDO) bit (Attribute [2]) requests to be initiated.

LTR Mechanism Enable	Disabled Enabled	If supported by hardware and set to "Enabled", this enables the Latency Tolerance Reporting (LTR) Mechanism.
End-End TLP Prefix Blocking	Disabled Enabled	If supported by hardware and set to "Enabled", this function will block forwarding of TLPs containing End-End TLP Prefixes.
Target Link Speed	Auto Force to 2.5 GT/s	If supported by hardware and set to "Force to 2.5 GT/s' for Downstream Ports, this sets an upper limit on Link operational speed by restricting the values advertised by the Upstream component in its training sequences. When 'Auto" is selected HW initialized data will be used.
Selectable De-emphasis	-3.5dB -6.0dB	If supported by hardware, this will control transmission de-emphasis of target link when operating at 5.0 GT/s
Clock Power Management	Disabled Enabled	If supported by hardware and set to "Enabled", the device is permitted to use CLKREQ# signal for power management of Link clock in accordance to protocol defined in appropriate form factor specification.
Compliance SOS	Disabled Enabled	IF supported by hardware and set to "Enabled", this will force LTSSM to send SKP ordered Sets between sequences when sending Compliance Pattern or Modified Compliance Pattern.
Hardware Autonomous Width	Disabled Enabled	If supported by hardware and set to 'Enabled", this will disable the hardware's ability to change link width except width size reduction for the purpose of correcting unstable link operation.
Hardware Autonomous Speed	Disabled Enabled	f supported by hardware and set to 'Enabled", this will disable the hardware's ability to change link speed except speed rate reduction for the purpose of correcting unstable link operation.

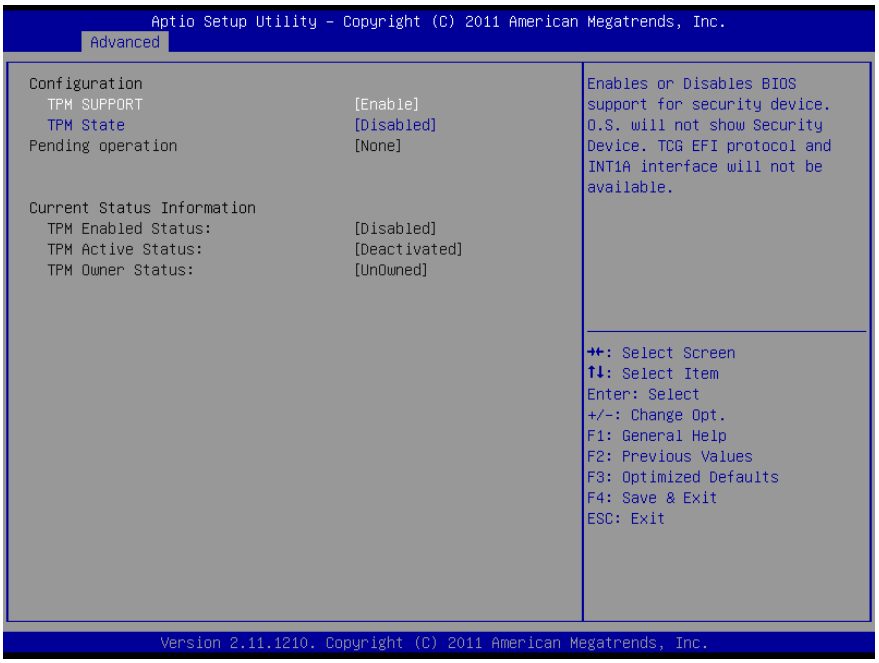
3.6.2.2 ACPI Settings

The **ACPI Configuration** menu configures Advanced Configuration and Power Interface (ACPI) options.



Item	Options	Description
Enable ACPI Auto Configuration	Disabled Enabled	Enables or Disables BIOS ACPI auto Configuration.
Enable Hibernation	Disabled Enabled	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)	Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.
Lock Legacy Resources	Disabled Enabled	Enables or Disables Lock of Legacy Resources.
Deep S5	Disabled Enabled	Enable or Disable Deep S5

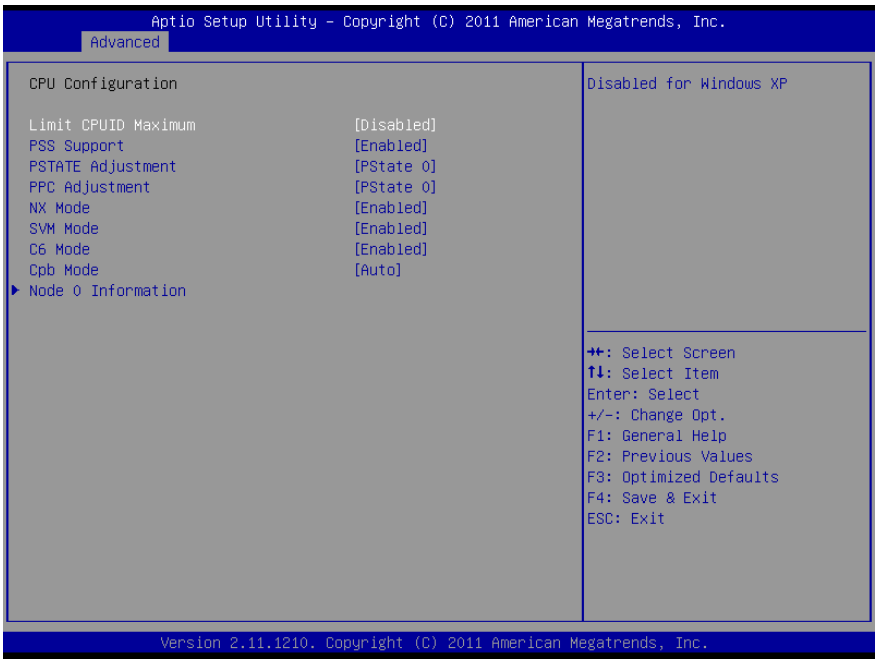
3.6.2.3 Trusted Computing



Item	Options	Description
TPM SUPPORT	Enabled Disabled	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.
TPM State	Enabled Disabled	Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.
Pending operation	None Enable take ownership Disable take ownership TPM clear	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.
TPM Enabled Status:	Enabled Disabled	Provides the current Capability state of the security device.
TPM Active Status:	Activated Deactivated	
TPM Owner Status:	Owned UnOwned	Provides current Ownership state. ie: Owned or UnOwned

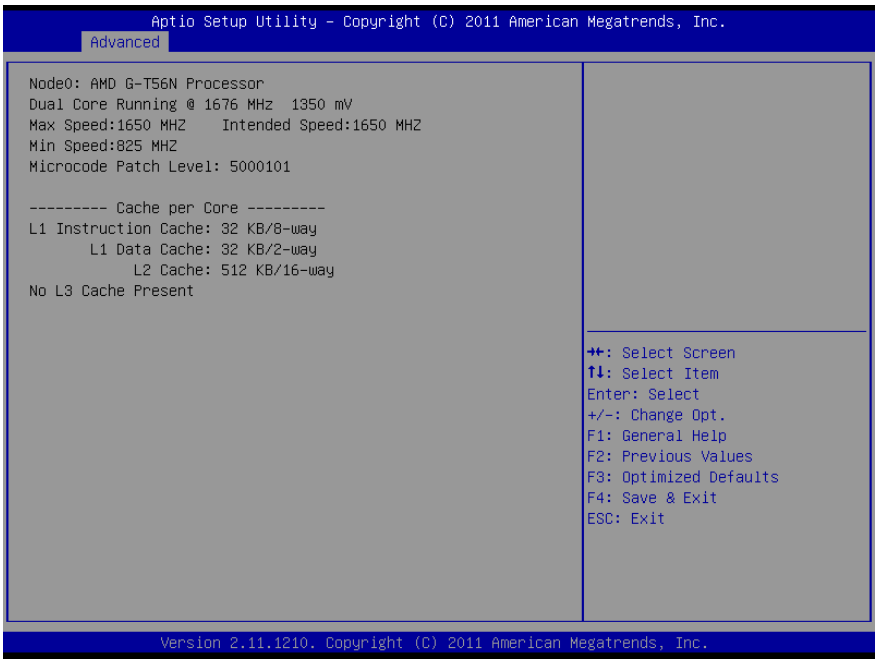
3.6.2.4 CPU Configuration

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

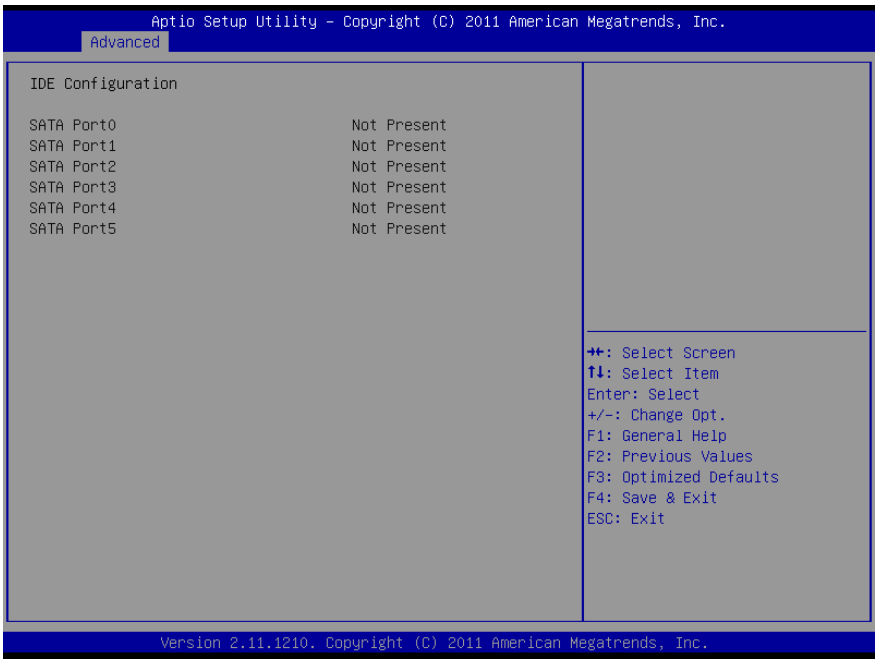


Item	Options	Description
PSS Support	Enabled Disable Link	Enable/Disable the generation of ACPI_PPC, and _PCT objects.
PSTATE Adjustment	PState 0 PState 1 PState 2 PState 3 PState 4 PState 5 PState 6 PState 7	Provided to adjust startup P-state level
PCC Adjustment	PState 0 PState 1 PState 2 PState 3 PState 4 PState 5 PState 6 PState 7	Provided to adjust _PPC object
NX Mode	Enabled Disable Link	Enable/disable No-execute page protection function.
SVM Mode	Enabled Disable Link	Enable/disable CPU Virtualisation
C6 Mode	Enabled Disable Link Auto	Enable/disable C6
Cpb Mode	Auto Disable Link	Auto/Disable CPB

3.6.2.4.1 Node 0 Information

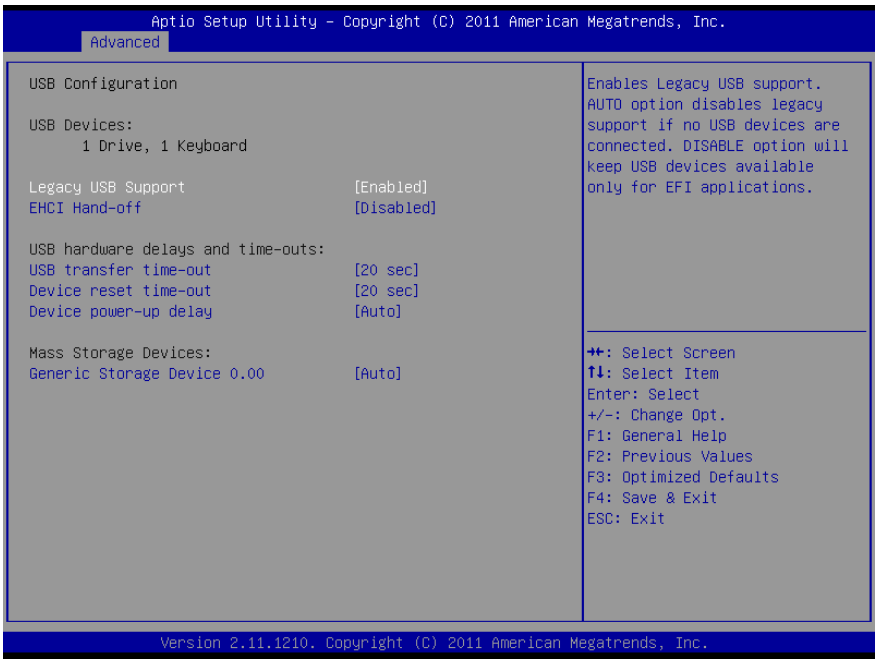


3.6.2.5 IDE Configuration



3.6.2.6 USB Configuration

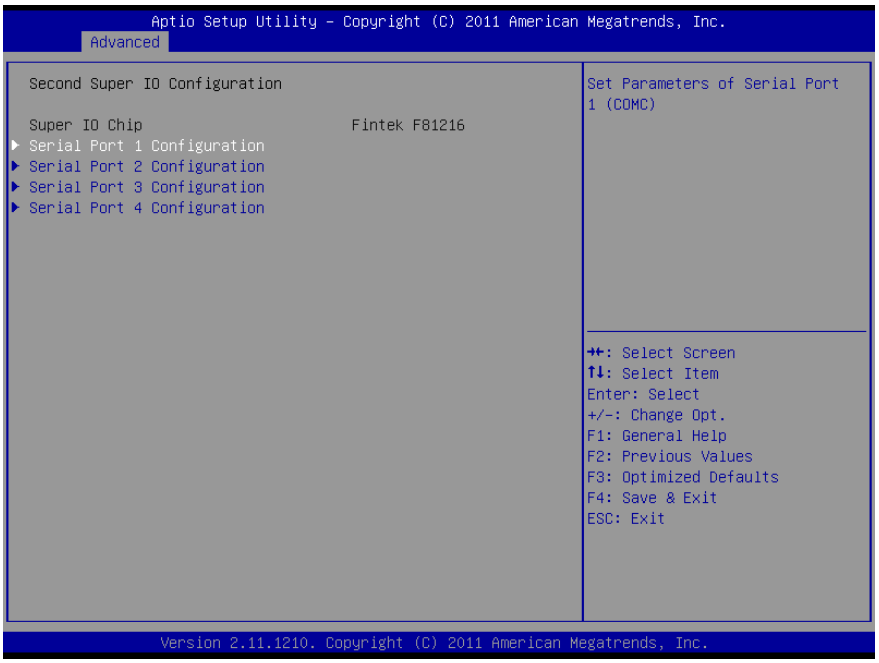
The USB configuration menu is used to read USB configuration information and configure USB.



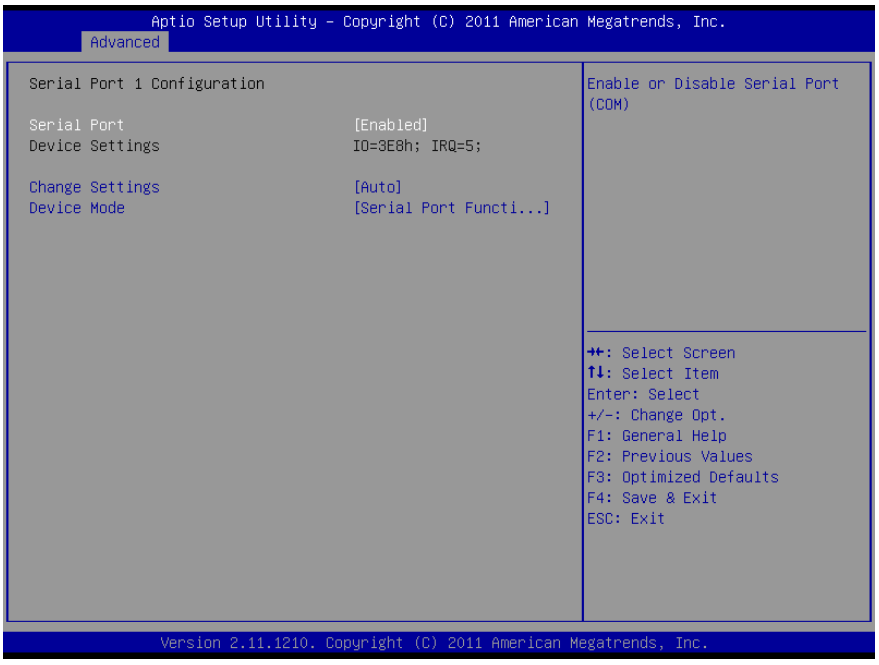
Item	Options	Description
Legacy USB support	Enabled Disabled Auto	Enables Legacy USB support. AUTO disables legacy support if no USB devices are connected. DISABLE will keep USB devices available only for EFI applications.
ECHI hand-off	Enabled Disabled	This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
USB transfer time-out	1sec / 5sec 10sec / 20sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10sec / 20sec 30sec / 40sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto 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.
Device power-up delay in seconds	1~40	Delay range is 1~40 seconds, in one second increments.
Generic Storage Device 0.00	Auto 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.

3.6.2.7 Second Super IO Configuration

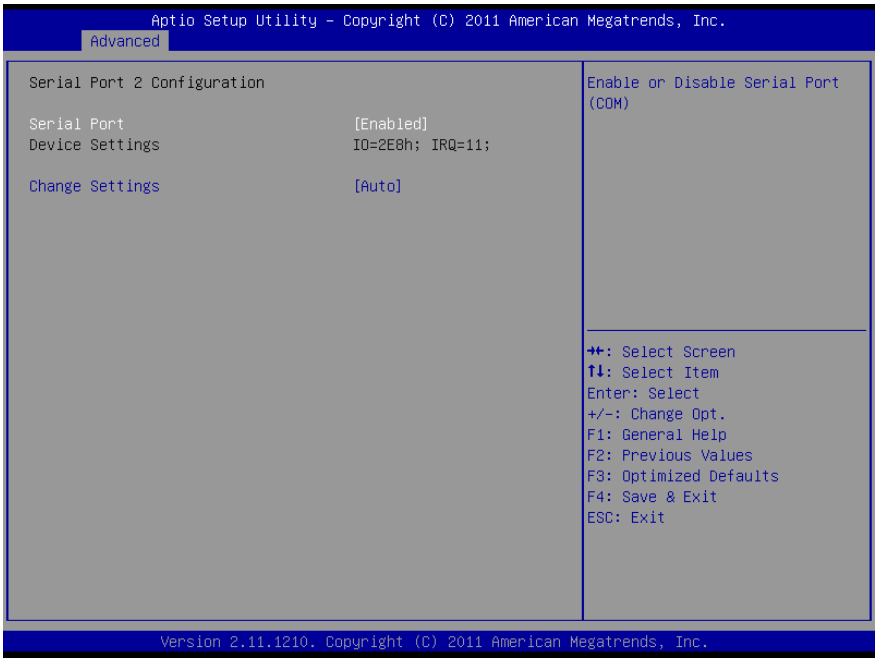
You can use this item to set up or change the Second Super IO configuration for FDD controllers, parallel ports and serial ports.



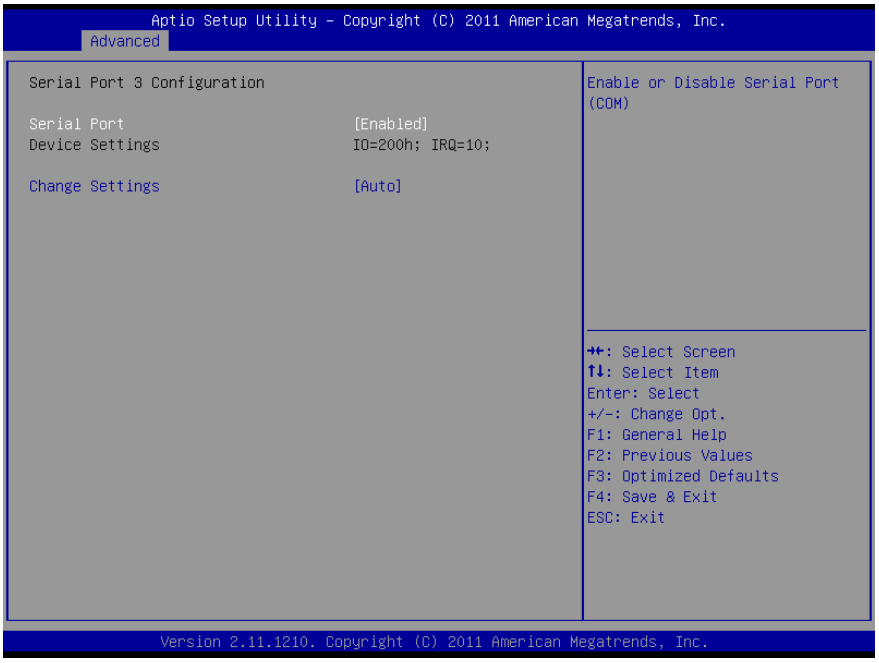
3.6.2.7.1 Serial Port 1 Configuration



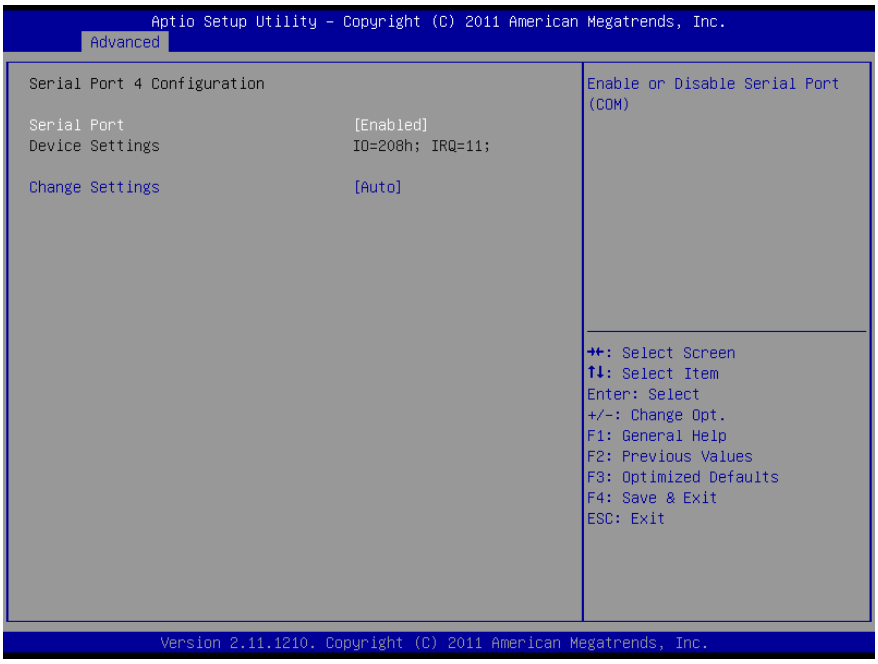
3.6.2.7.2 Serial Port 2 Configuration



3.6.2.7.3 Serial Port 3 Configuration



3.6.2.7.4 Serial Port 4 Configuration

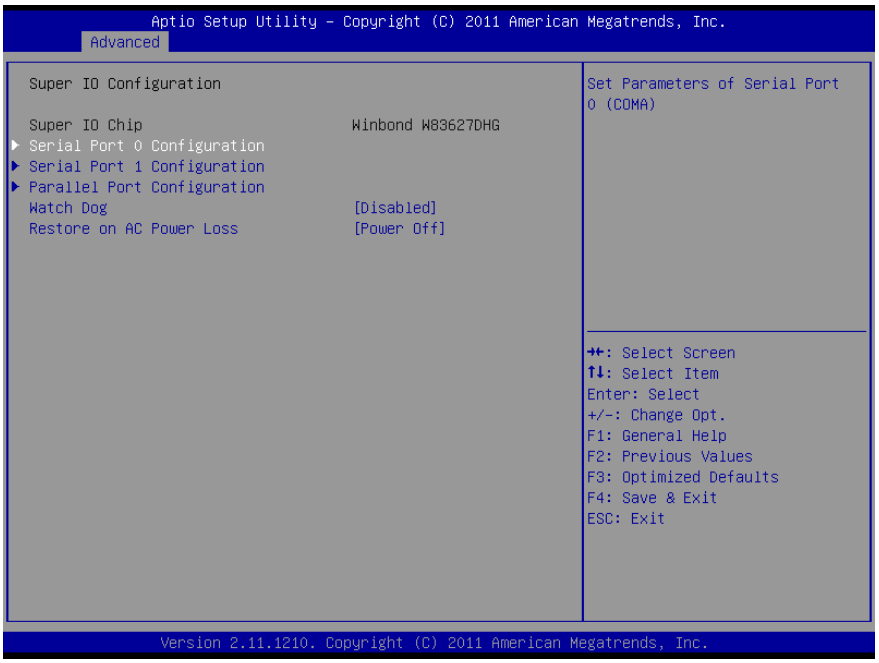


3.6.2.7.4.1 Serial Port 1/2/3/4 Configuration

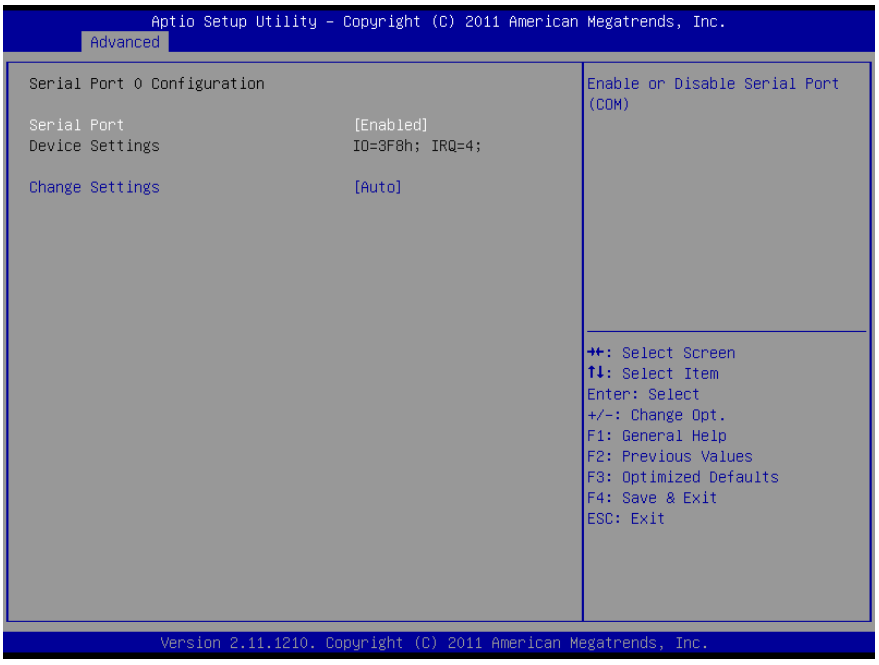
Item	Option	Description
Serial Port	Enabled, Disabled	Use the Serial port option to enable or disable the serial port.
Change Settings	Auto IO=3F8h; IRQ=3, IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Use the change Settings option to change the serial port IO port address and interrupt address.

3.6.2.8 Super IO Configuration

You can use this item to set up or change the Super IO configuration for FDD controllers, parallel ports and serial ports.

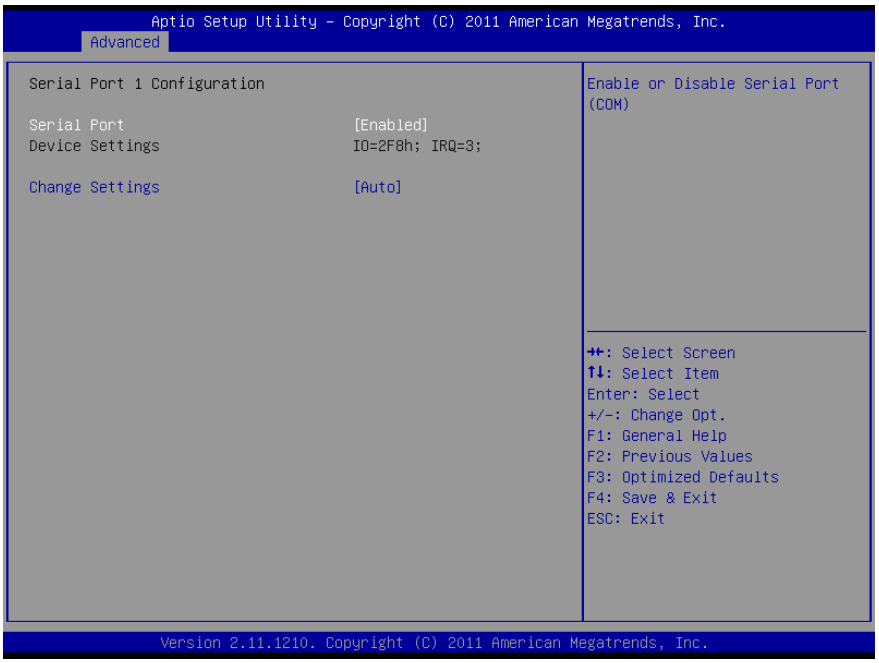


3.6.2.8.1 Serial Port 0 Configuration



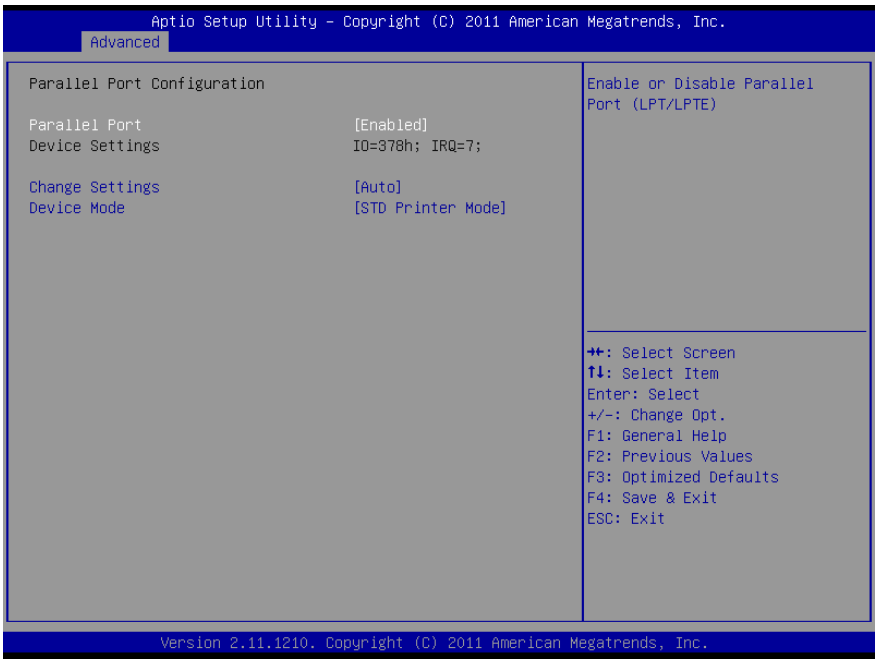
Item	Option	Description
Serial Port	Enabled, Disabled	Use the Serial port option to enable or disable the serial port.
Change Settings	Auto IO=3F8h; IRQ=4, IO=3F8h; IRQ=3,4,5,6,7,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Use the change Settings option to change the serial port IO port address and interrupt address.

3.6.2.8.2 Serial Port 1 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled	Use the Serial port option to enable or disable the serial port.
Change Settings	Auto IO=2F8h; IRQ=3, IO=3F8h; IRQ=3,4,5,6,7,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Use the change Settings option to change the serial port IO port address and interrupt address.

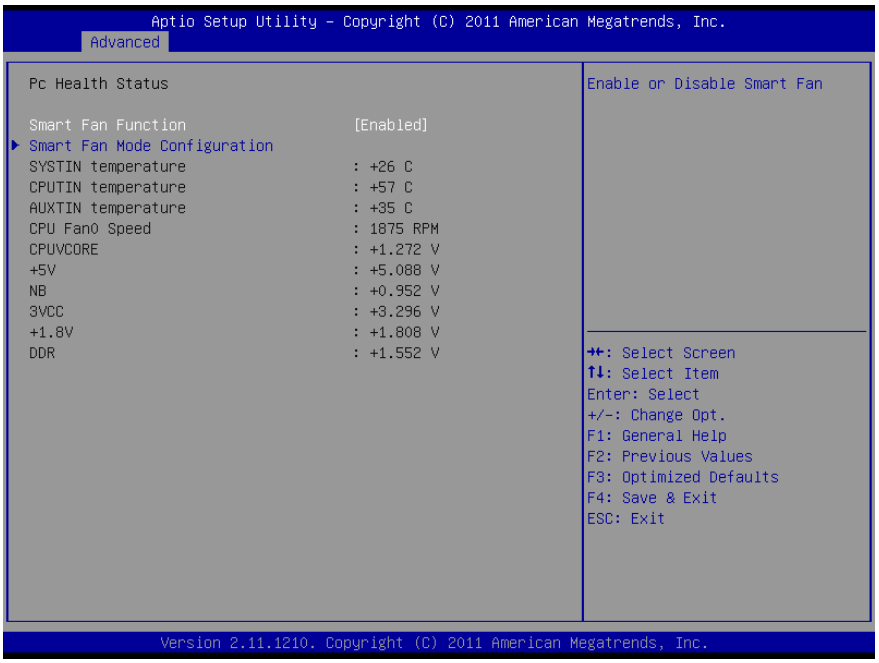
3.6.2.8.3 Parallel port Configuration



Item	Option	Description
Parallel Port	Enabled, Disabled	Enable or Disable parallel Port (LPT/LPTE)
Change Settings	Auto IO=378h; IRQ=5; DMA=3 IO=378h; IRQ=5,6,7,10,11,12: DMA=1,3; IO=278h; IRQ=5,6,7,10,11,12: DMA=1,3; IO=3BCh; IRQ=5,6,7,10,11,12: DMA=1,3; IO=378h; DMA=1,3 IO=278h; DMA=1,3 IO=3BCh; DMA=1,3	Select an optional setting for Super IO device.
Device Mode	STD Printer Mode SPP Mode EPP-1.9 and SPP Mode EPP-1.7 and SPP Mode ECP Mode ECP and EPP 1.9 Mode ECP and EPP 1.7 Mode	Change the Printer Port mode

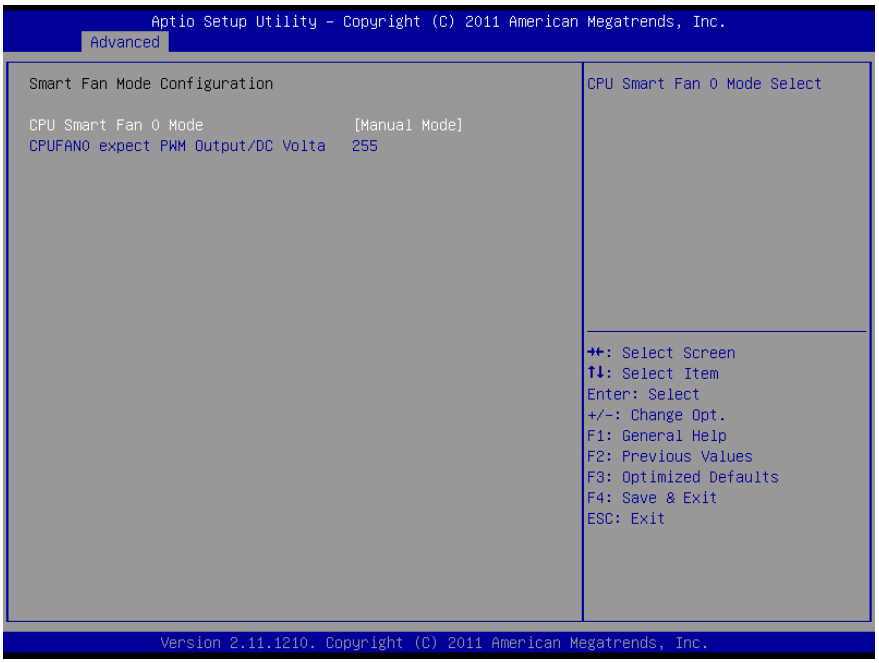
3.6.2.9 H/W Monitor

The H/W Monitor shows the operating temperature, fan speeds and system voltages.



Item	Option	Description
Smart Fan Function	Disabled Enabled	Enable or Disable Smart Fan

3.6.2.9.1 Smart Fan Mode configuration



Item	Option	Description
CPU Smart Fan 0 Mode	Manual Mode Thermal Cruise Mode Fan Speed Cruise Mode SMART FAN III Mode	CPU Smart Fan 0 Mode Select

Temperature

- SYSTIN temperature
- CPUTIN temperature
- AUXTIN temperature

Fan speed

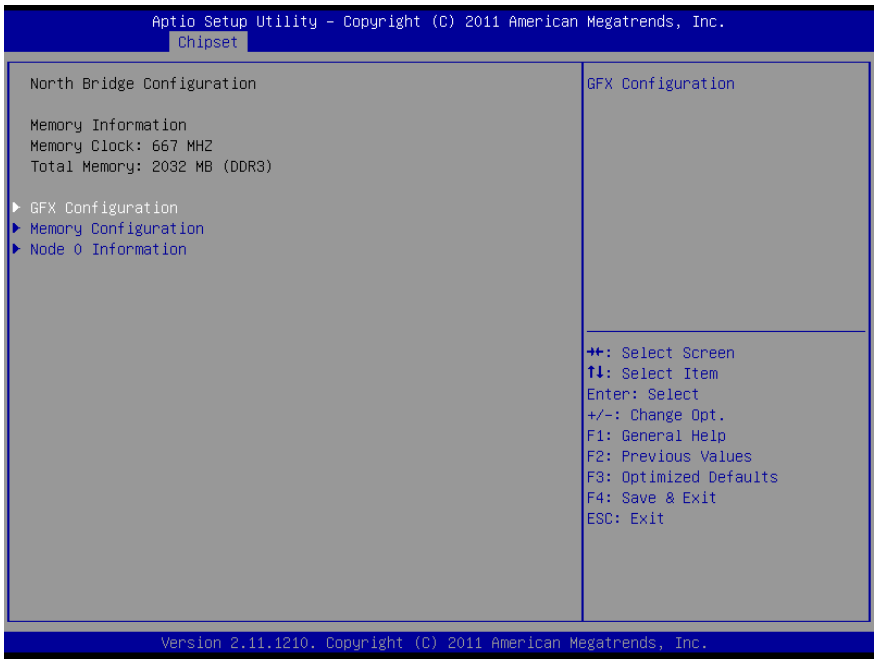
- CPU Fan0 Speed

Voltage

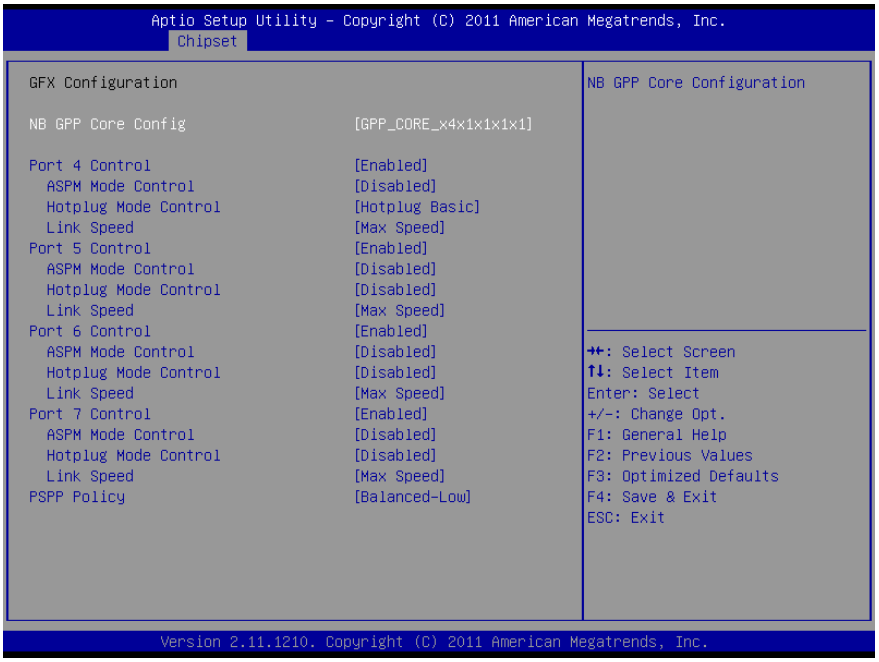
- CPUVCORE
- +5V
- NB
- 3VCC
- +1.8V
- DDR

3.6.3 Advanced Chipset Features

3.6.3.1 North Bridge

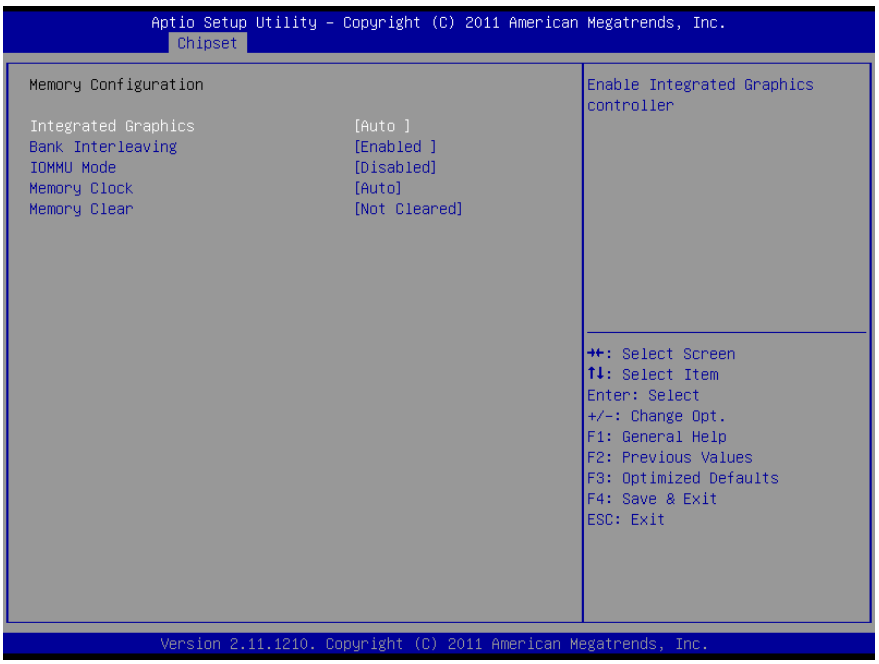


3.6.3.1.1 GFX Configuration



Item	Option	Description
NB GPP Core Config	Disabled GPP_CORE_x4x4 GPP_CORE_x4x2x2 GPP_CORE_x4x2x1x1 GPP_CORE_x4x1x1x1x1	NB GPP Core Configuration
Port 4/5/6/7 Control	Enabled Disabled	Enables or disables Port 4/5/6/7 Control
ASPM Mode Control	Disabled L0s Entry L1 Entry L0s and L1 Entry	NB root port ASPM mode control
Hotplug Mode Control	Disabled Hotplug Basic Hotplug Server Hotplug Enhanced Hotplug Inboard	NB root port Hotplug mode control
Link Speed	MaxSpeed Pcie Gen1 Pcie Gen2	NB root port Pcie link speed, the link speed may be overwritten by Pspp settings.
PSPP Policy	Disabled Performance Balanced-high Balanced-Low Power saving	PCIe speed power policy

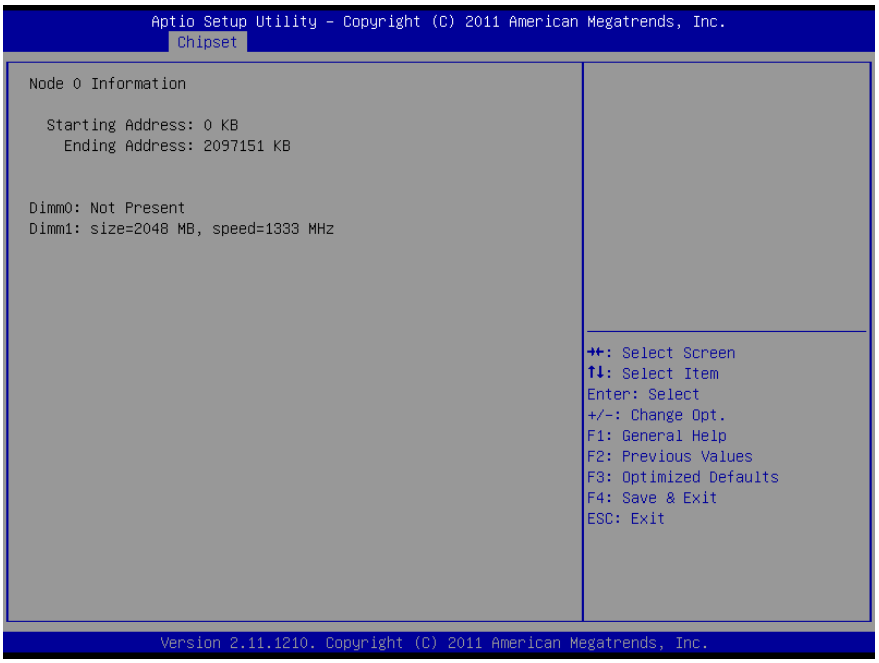
3.6.3.1.2 Memory Configuration



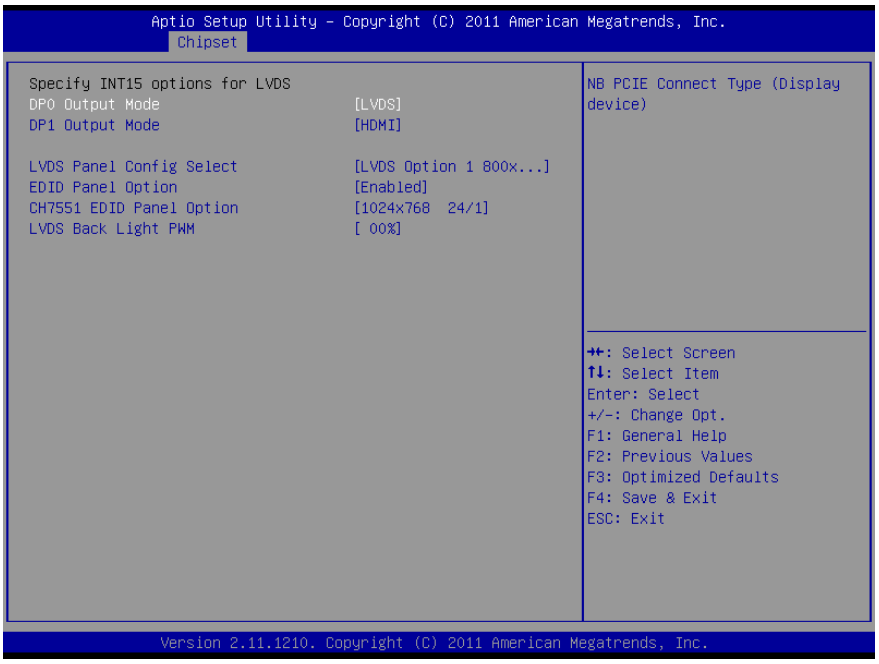
Item	Option	Description
Integrated graphics	Auto Disabled Forced	Enables Integrated Graphics controller
Bank Interleaving	Enabled Disabled	Enables or disables Bank interleaving
IOMMU Mode	Disabled 32MB 64MB 128MB 256MB 512MB 1GB 2GB	IOMMU is supported on LINUX based systems to convert 32bit I/O to 64bit MMIO.
Memory Clock	Auto 400MHz 533MHz 667 MHz	This option allows User to select different Memory Clock. Default value is 400MHz.
Memory Clear	Not cleared Cleared	Memory clear functionality control

3.6.3.1.3 Node 0 Information

View Memory Information related to Node 0



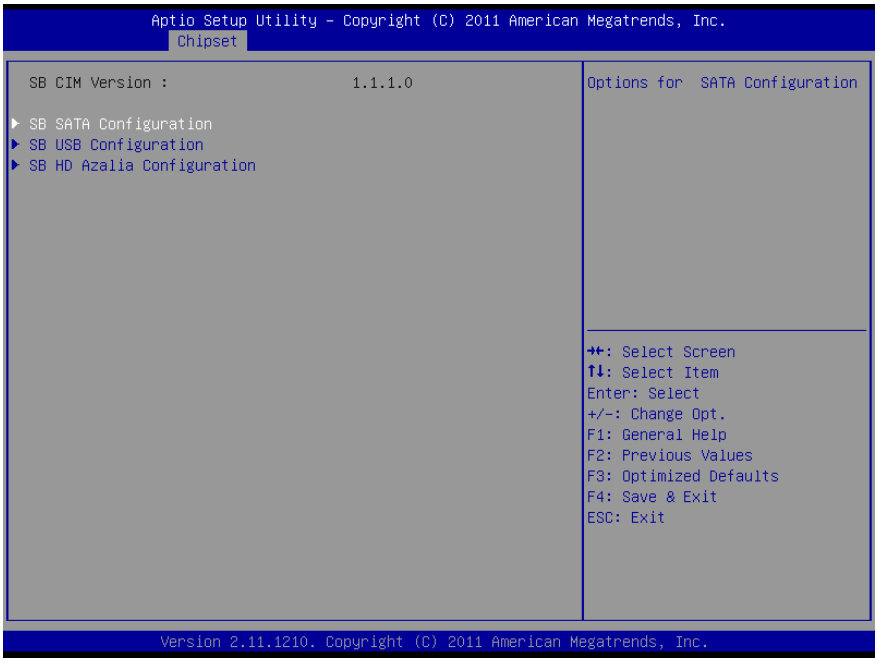
3.6.3.2 North Bridge LVDS configuration



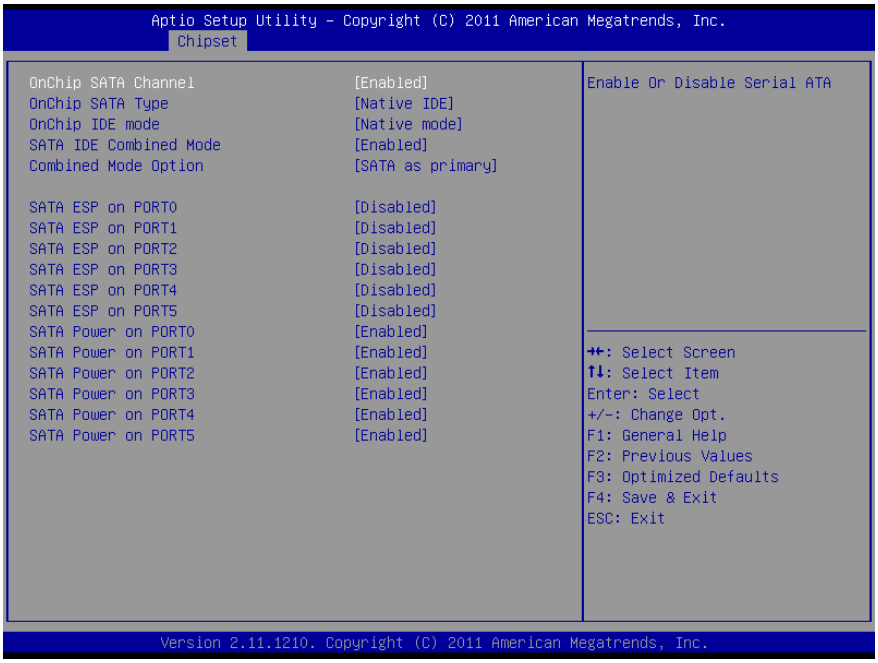
Item	Option	Description
DP0 Output Mode	eDP LVDS Disabled	NB PCIE Connect Type (Display device)
DP1 Output Mode	DP HDMI Disabled	
LVDS Panel Config Select	LVDS Option 1 800x600 LVDS Option 2 1024x768 LVDS Option 3 1280x720 LVDS Option 4 1280x800 LVDS Option 5 1280x1024 LVDS Option 6 1366x768 LVDS Option 7 1440x900 LVDS Option 8 1600x900 LVDS Option 9 1920x1024	LVDS Panel Configuration
EDID Panel Option	Enabled Disabled	EDID Panel Option configuration **Note:** Settings would depend on whether Hardware is set to LVDS1 or LVDS 2 output.
CH7551 EDID Panel Option	1024x768 24/1 800x600 24/1 1024x768 18/1 1024x576 18/1 1024x600 18/1 1280x800 18/1 1920x1200 18/2 640x480 24/1 800x480 24/1 1280x768 18/1 1280x1024 24/2 1440x900 24/2 1600x1200 24/2 1366x768 24/1 1920x1080 24/2 1680x1050 24/2	DP0-EDP to LVDS (Chrotel 7551) Panel EDID Option

LVDS Back Light PWM	00% 25% 50% 75% 100%	Select LVDS back light PWM duty

3.6.3.3 South Bridge

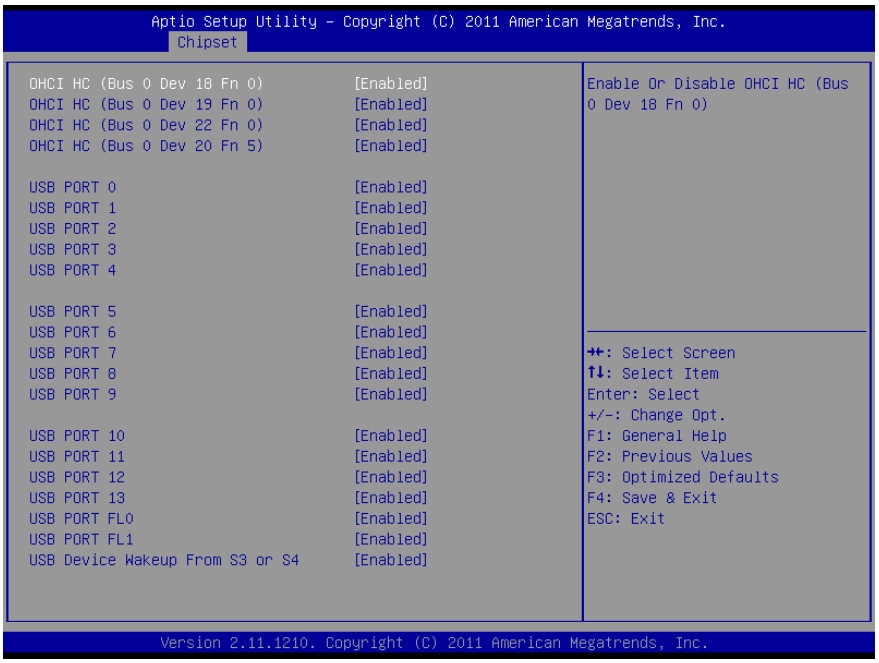


3.6.3.3.1 SB SATA Configuration



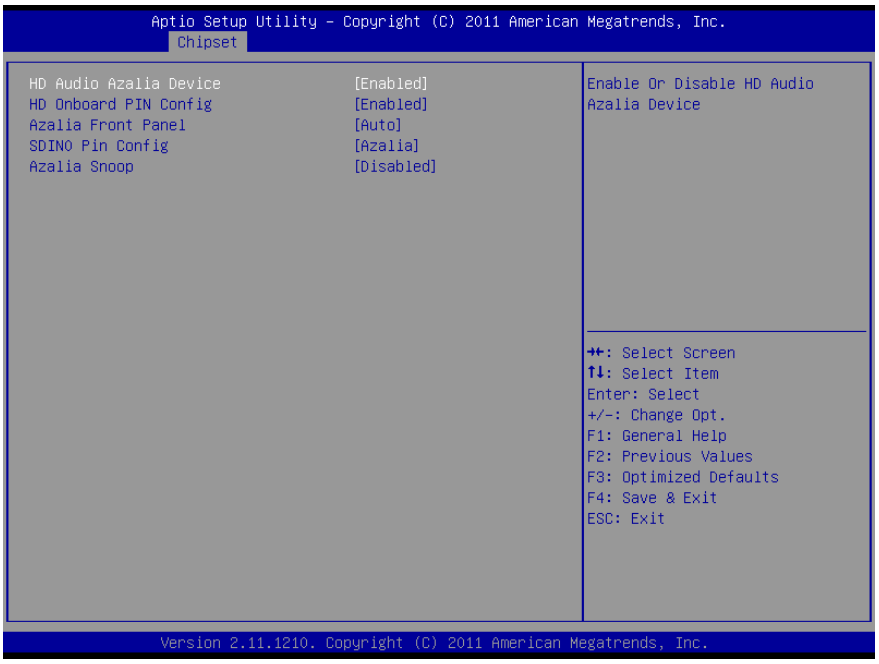
Item	Option	Description
OnChip SATA Type	Native IDE AHCI Legacy IDE	Native IDE /n RAID /n AHCI /n AHCI / n Legacy IDE /n IDE→AHCI /n HyperFlash.
SATA Force Raid	No Function Force Raid	No function: Raid 5 Force Raid: Raid 0/1
OnChip IDE mode	Legacy Mode Native Mode	Options for OnChip IDE mode
SATA IDE Combined Mode	Enabled Disabled	Enables or disables SATA IDE Combined Mode
Combined Mode Option	SATA as primary SATA as secondary	Settings for combined Mode Option
SATA ESP on PORT0/1/2/3/4/5	Enabled Disabled	Enables or disables SATA ESP on PORT0/1/2/3/4/5
SATA Power on PORT0/1/2/3/4/5	Enabled Power down	Settings for SATA Power on PORT0/1/2/3/4/5

3.6.3.3.2 SB USB Configuration



Item	Option	Description
USB PORT 0/1/2/3/4/5/6/7/8/9/10/11/12/13	Enabled Disabled	Enables or disables USB PORT 0/1/2/3/4/5/6/7/8/9/10/11/12/13
USB PORT FL0/FL1	Enabled Disabled	Enables Or Disable USB PORT FL0/FL1
USB Device Wakeup From S3 or S4	Enabled Disabled	Enables or disables USB Device Wakeup From S3 or S4

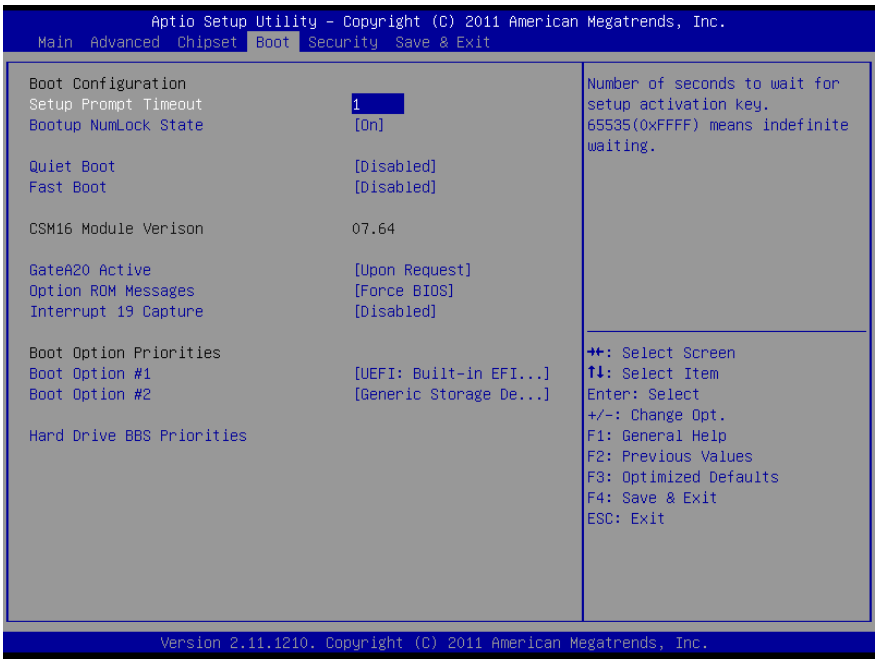
3.6.3.3.3 SB HD Azalia Configuration



Item	Option	Description
HD Audio Azalia Device	Auto Enabled Disabled	HD Audio Azalia Device Configuration
HD Onboard PIN Config	Enabled Disabled	HD Onboard PIN Configuration
Azalia Front Panel	Auto Disabled	Azalia Front Panel Configuration
SDIN0 Pin Config	GPIO Azalia	SDIN0 Pin Configuration
Azalia Snoop	Enabled Disabled	Azalia Snoop Configuration

3.6.4 Boot

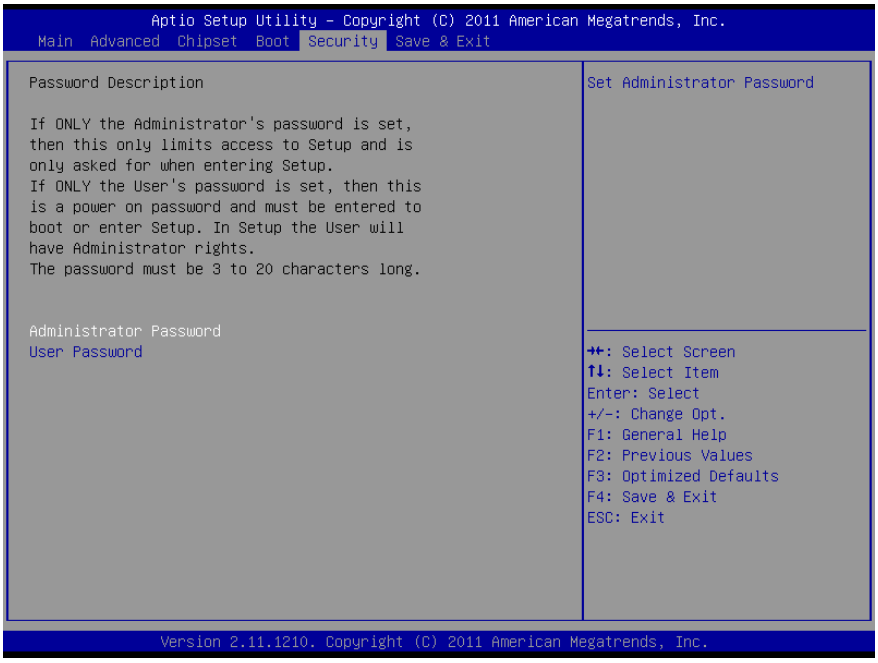
Use Boot menu to set system boot options.



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 Off	Select the keyboard NumLock state
Quiet Boot	Enabled Disabled	Enables or Disables Quiet Boot Option
Fast Boot	Enabled Disabled	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
GateA20 Active	Upon request Always	UPON REQUEST –GA20 can be disabled using BIOS services. ALWAYS- do not allow disabling GA20; this option is useful when any RT code is executed above 1MB
Option ROM Messages	Force BIOS Keep current	Set display mode for Option ROM
Interrupt 19 Capture	Enabled Disabled	Enabled: allows Option ROMs to trap Int 19
Boot Option #1/2	Sets the system boot order	

3.6.5 Security

Use the Security menu to set system and user password.



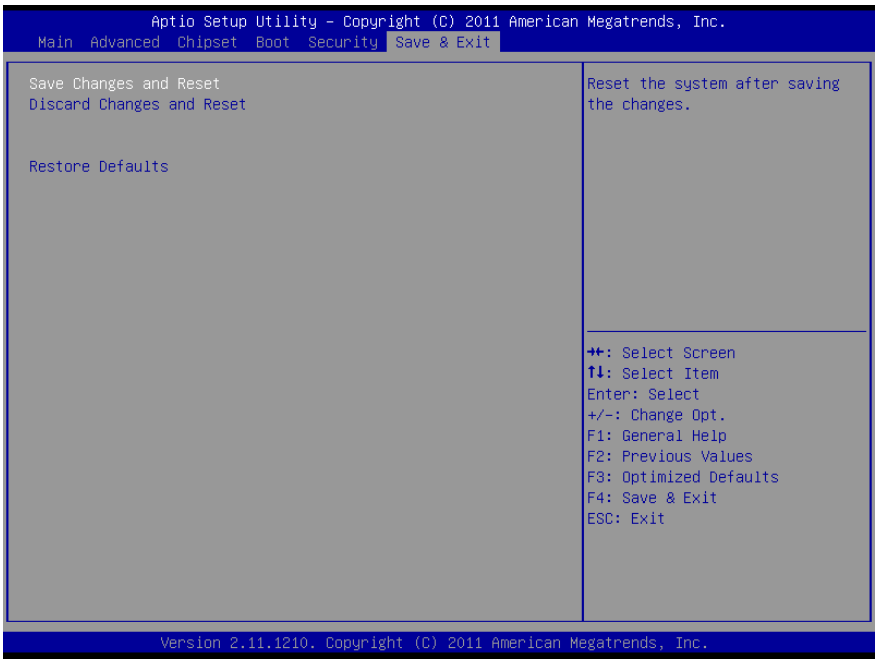
3.6.5.1 Administrator Password

This setting specifies a password that must be entered to access the BIOS Setup Utility. If only the Administrator's password is set, then this only limits access to the BIOS setup program and is only asked for when entering the BIOS setup program. By default, no password is specified.

3.6.5.2 User Password

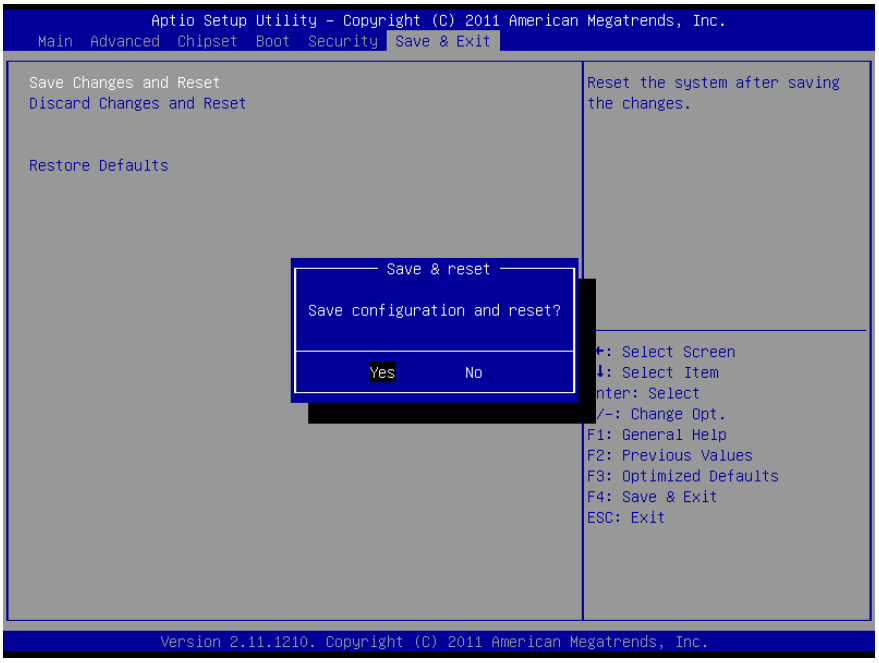
This setting specifies a password that must be entered to access the BIOS Setup Utility or to boot the system. If only the User's password is set, then this is a power on password and must be entered to boot or enter the BIOS setup program. In the BIOS setup program, the User will have Administrator rights. By default, no password is specified.

3.6.6 Save & Exit



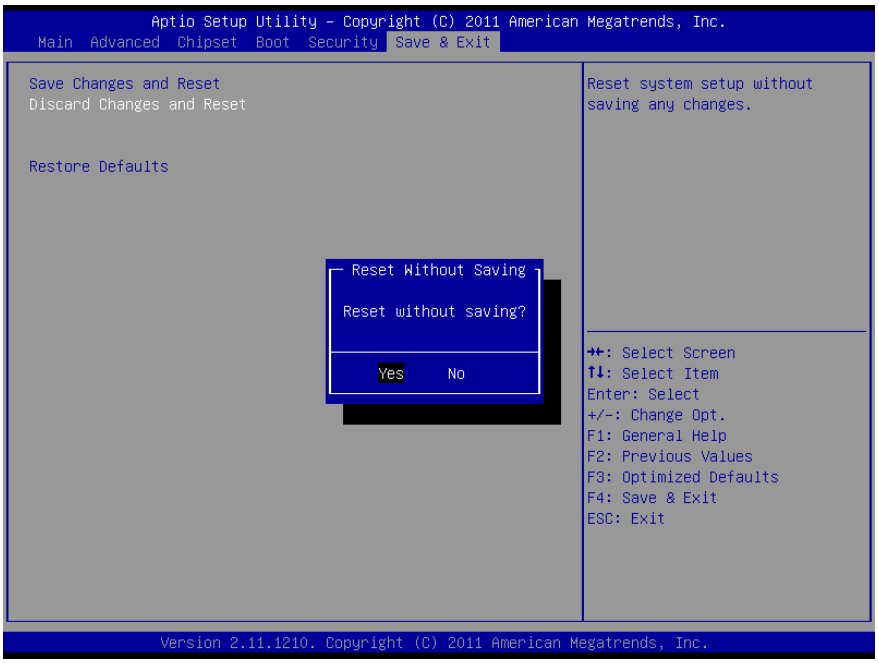
3.6.6.1 Save Changes and Reset

Any changes made to BIOS settings are stored in NVRAM. The setup program then exits and reboots the controller.



3.6.6.2 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.



3.6.6.3 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.

4. Drivers Installation

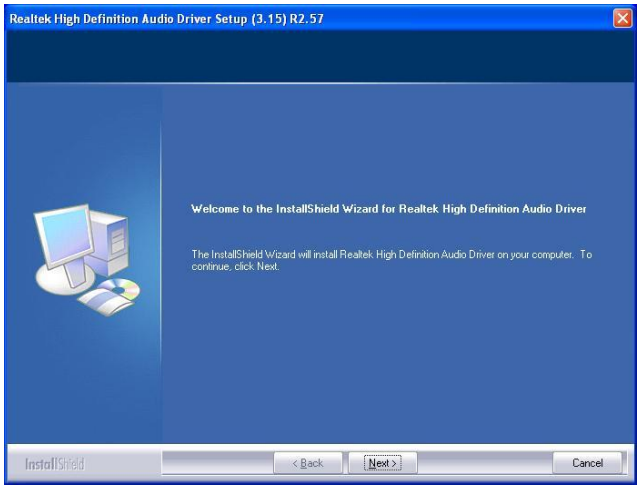
Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Audio Driver (For Realtek ALC892)

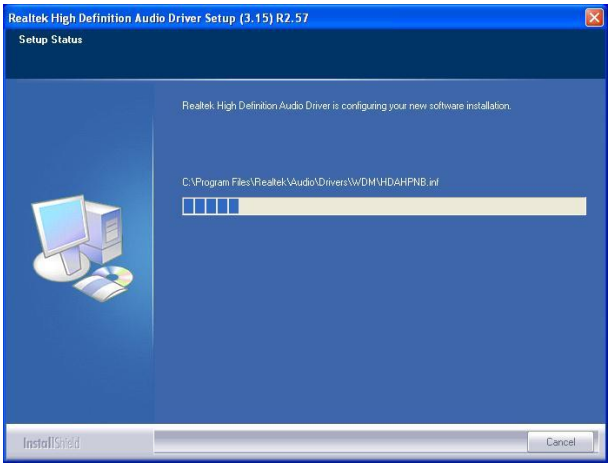
Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from Menu on the left.

Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.

Step 1. Locate 「\Audio\Realtek \ALC892\setup.exe」.



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

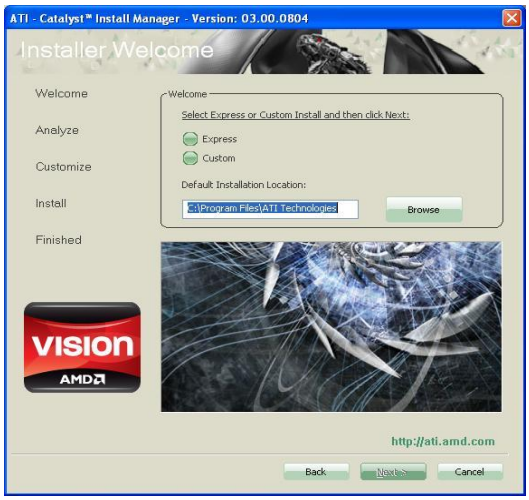


Step 3. Select **Next** to the next step.

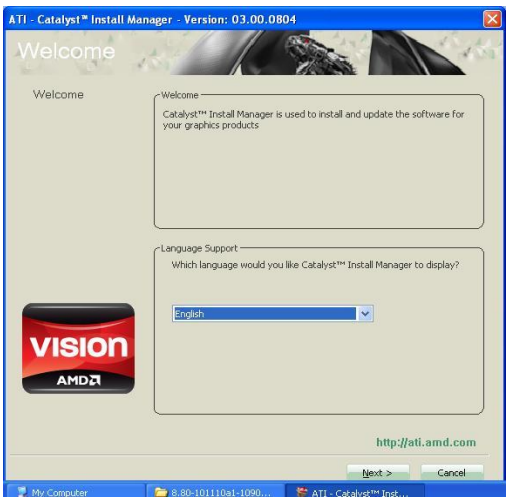
4.2 Install Display Driver (For AMD Fusion Accelerated Processors)

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 Menu on the left.

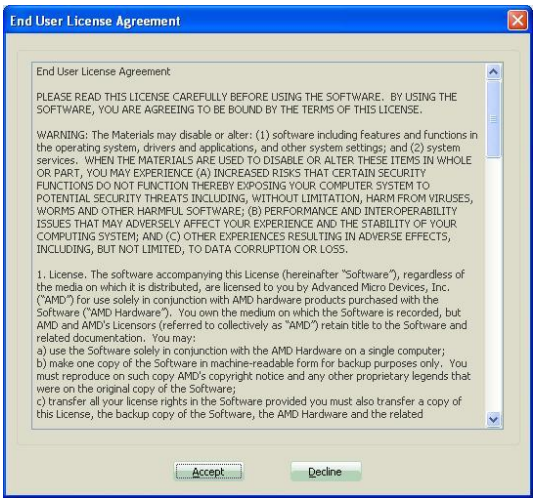
Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



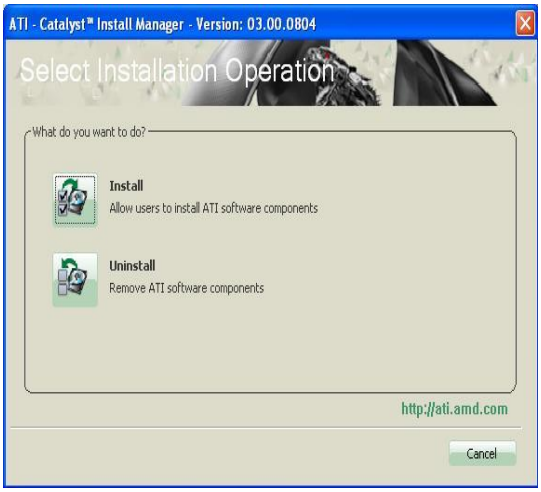
Step 4. Click **Next**.



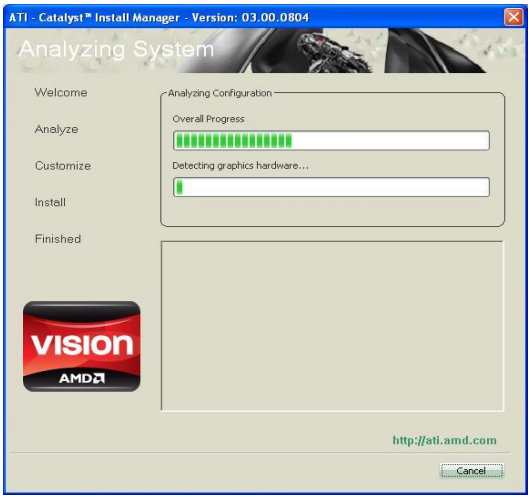
Step 2. Choose language, Click **Next**.



Step 5. Click **Accept** to continue setup.



Step 3. Click **Install** to begin installation.



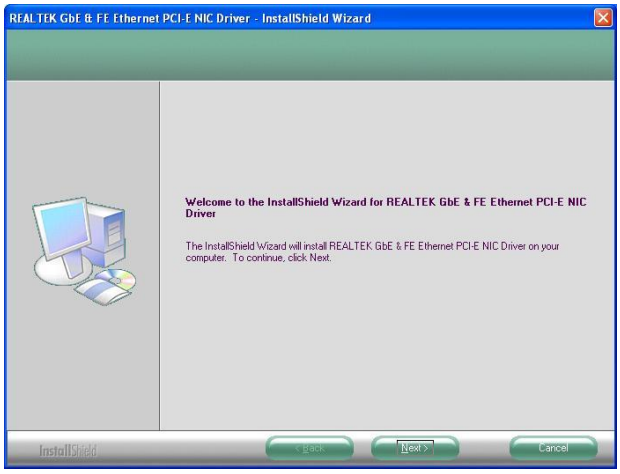
Step 6. Installing.

4.3 Install Ethernet Driver (For Realtek 8111E)

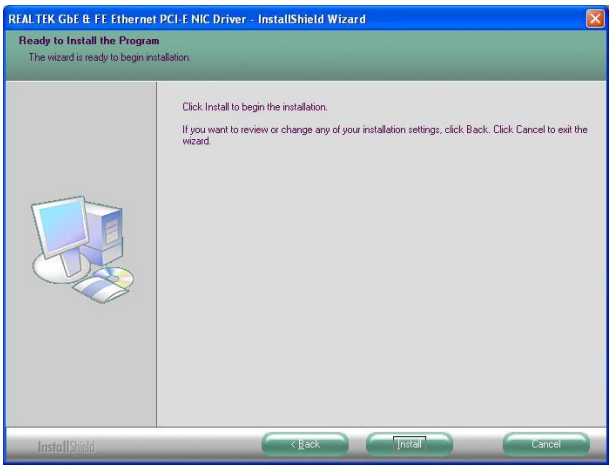
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from Menu on the left.

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

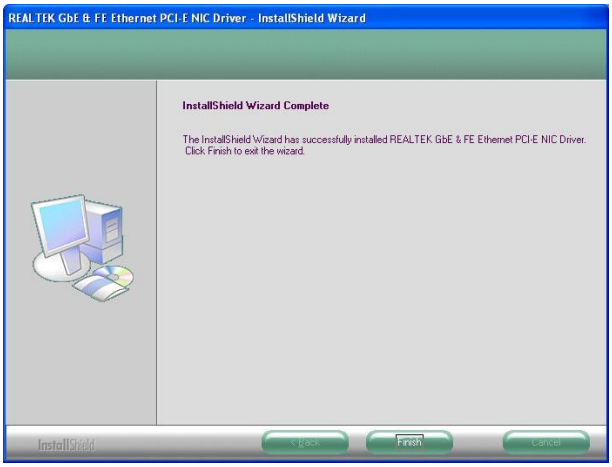
Step 1. Locate 「Realtek\8111E」and choose your system OS.



Step 2. Click **Next**.

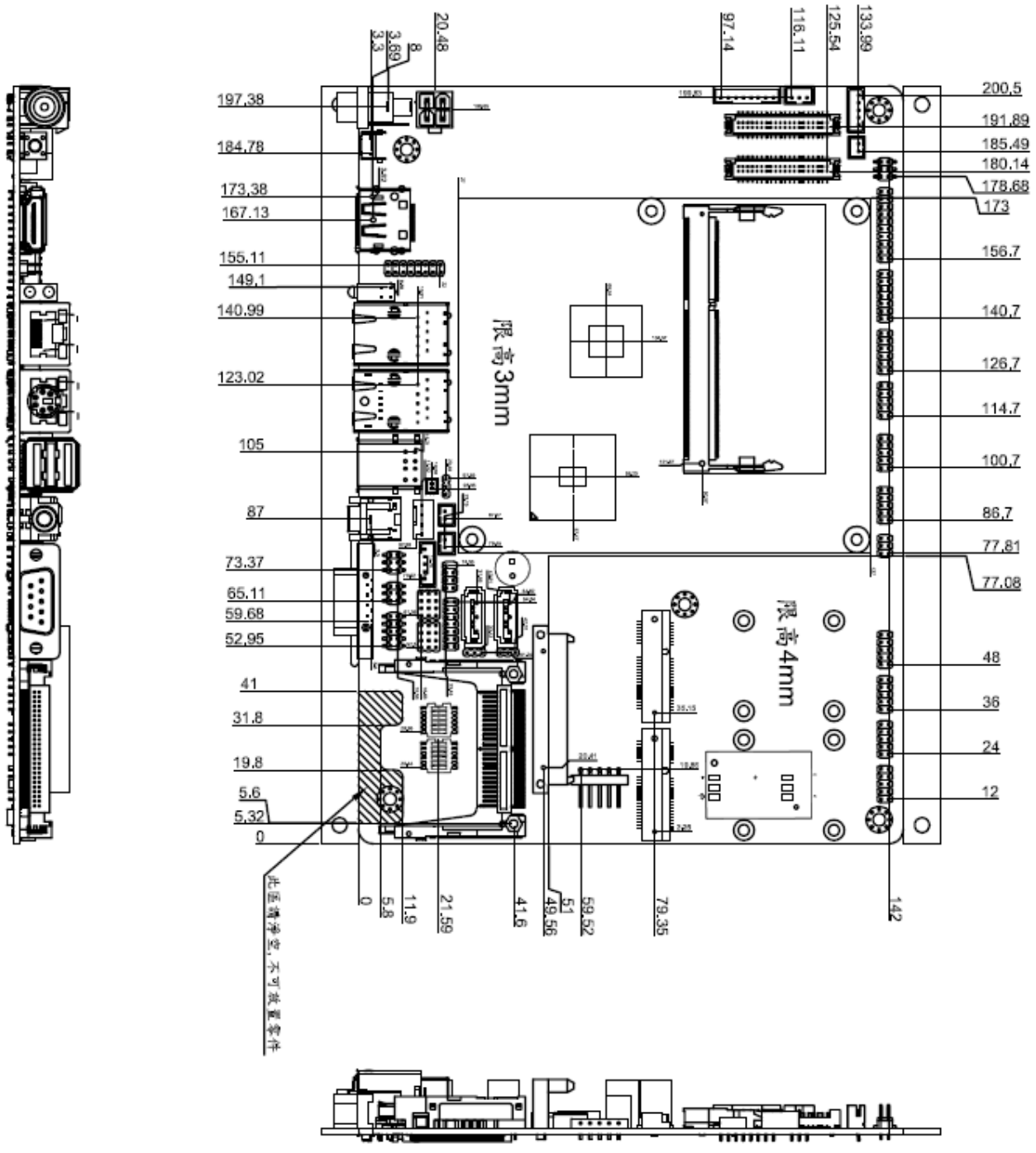


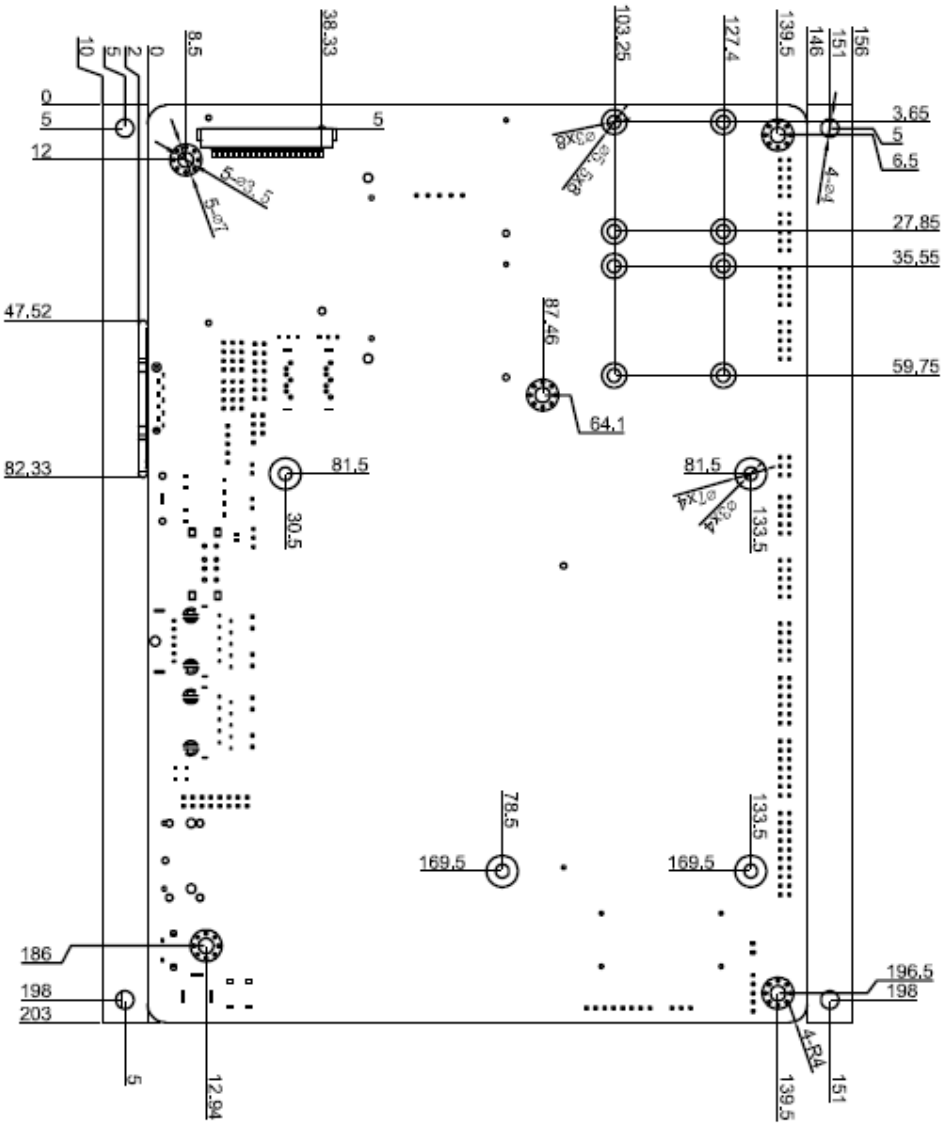
Step 3. Click **Install** to run the installation.



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

5. Mechanical Drawing


限高3mm
限高4mm
此区域净空，不可放置零件


0
5
12
10
5
2
0
8.5
38.33
5
103.25
127.4
139.5
146
151
156
3.65
5
6.5
4-ø4
27.85
35.55
59.75
47.52
87.46
64.1
82.33
81.5
30.5
81.5
133.5
78.5
169.5
133.5
169.5
186
198
203
5
12.94
196.5
198
4-R4
139.5
151