

ECM-QB

3.5" Intel Queensbay Micro Module

User's Manual

3rd Ed – 22 April 2013

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

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

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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.

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

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1. Getting Started

1.1 Safety Precautions

Warning!



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



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.

Always note that improper disassembling action could cause damage to the motherboard. We suggest not removing the heatsink without correct instructions in any circumstance. If you really have to do this, please contact us for further support.

1.2 Packing List

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

- 1 x 3.5" ECM-QB Micro Module
- 1 x Quick Installation Guide for ECM-QB
- 1 x AUX-032 daughter board
- 1 x DVD-ROM contains the followings:
 - User's Manual (this manual in PDF file)
 - Ethernet driver and utilities
 - VGA drivers and utilities
 - Audio drivers and utilities
- 1 x Cable set contains the followings:
 - 1 x Audio cable (12pin, 2.0mm pitch)
 - 1 x USB cable
 - 1 x Serial ATA cable (7-pin, standard).
 - 1 x Wire SATA power (15-pin, 2P/2.0mm)
 - 1 x Flat Cable 9P(M)-Dupont 10P/2.0mm)
- Screw-Bind (IMS M3*4mm)
- Heat sink (88*60*21.7mm)
- 3M Foam (VHB-4622 10mm*20mm*1.1mm)

1.3 Document Amendment History

Revision	Date	Comment
1 st	October 2011	Initial Release
2 nd	April 2013	Update BIOS Setup
3 rd	April 2013	Update Block Diagram

1.4 Manual Objectives

This manual describes in detail the Avalue Technology ECM-QB 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 ECM-QB 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

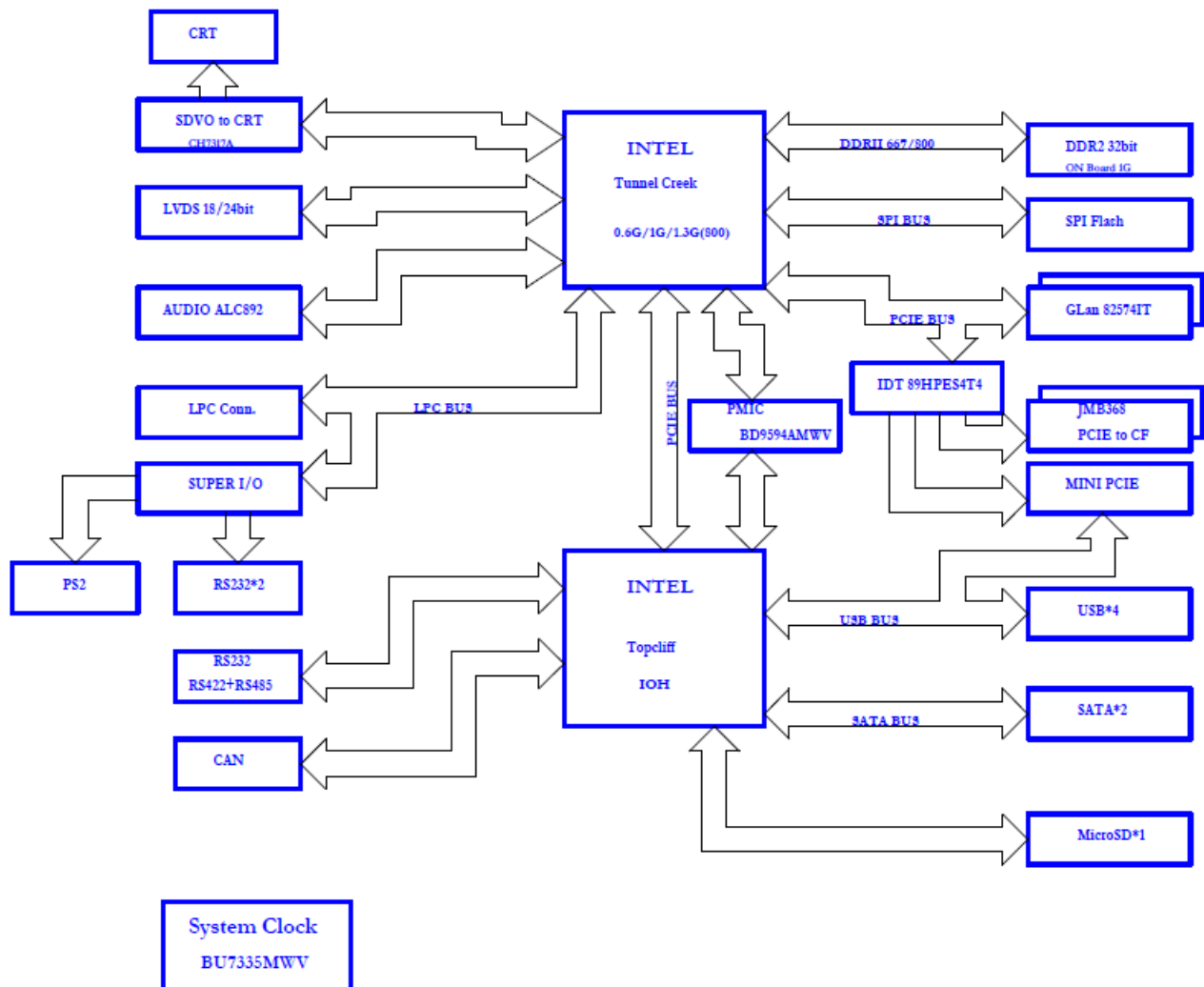
System	
CPU	Intel Tunnel Creek LPIA Core 0.6GHz, 1.0GHz, 1.3GHz, 1.6GHz
BIOS	AMI 16Mbit Flash BIOS
System Chipset	Intel Tunnel Creek + Intel Topcliff
I/O Chip	Nuvoton W83627DHG-P
System Memory	Onboard DDR2 1GB Memory
SSD	1 x CF Socket, 1 x MicroSD
Watchdog Timer	Reset: 1sec.~ 65535sec./min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto trotting control when CPU overheats
Expansion	1 PCIe Mini Card slot, 1 LPC
I/O	
MIO	2 x SATA, 3 x RS-232, 1 x RS-422, 1 x RS-485 , 1x CAN
USB	4 x USB 2.0
IrDA	N/A
DIO	8-bit GPI and 8-bit GPO
Display	
Chipset	Intel Tunnel Creek Integrated
Resolution	CRT mode: 1280 x 1024 @ 85 Hz (by Chrontel CH7317B)
	LCD/Simultaneous mode: 1280 x 768 @ 60 Hz
Multiple Display	CRT+ LVDS
LCD Interface	Single-Channel 18/24-bit LVDS
TV-out	N/A
Audio	
AC97 Codec	Realtek ALC892 support 7.1CH audio
Audio Interface	Mic in, Line in, Line out
Ethernet	
LAN Chip	2 x Intel 82574L PCI-E Gigabit LAN
Ethernet Interface	1000Base-Tx Gigabit Ethernet compatible

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Mechanical & Environmental	
Power Requirement	+12V
ACPI	Single power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
Power Type	Single Power AT/ATX
Operating Temp.	0~60°C
Storage Temp.	-40~75°C
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	5.7" x 4" (146 mm x 102 mm)
Weight	TBD

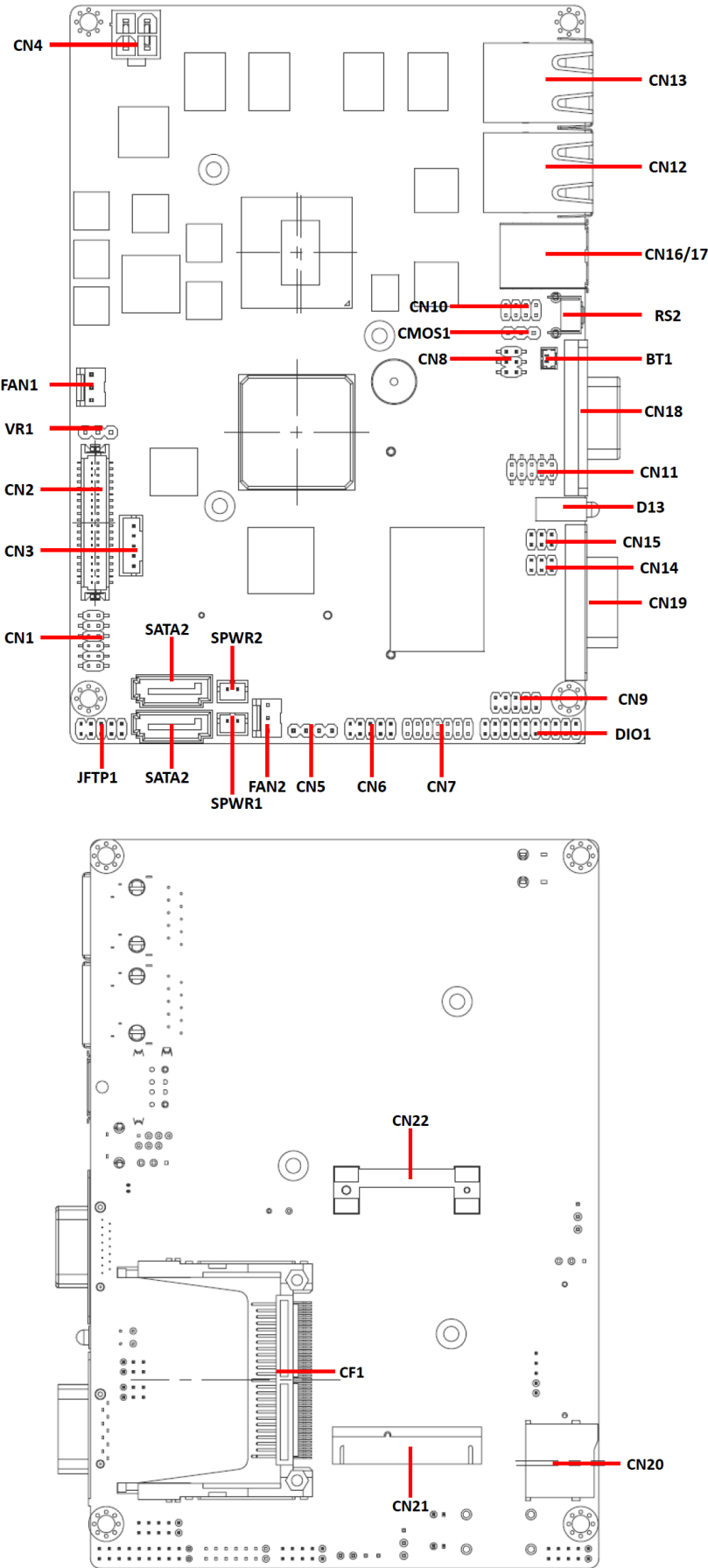
1.6 Architecture Overview – Block Diagram

The following block diagram shows the architecture and main components of ECM-QB.



2. Hardware Configuration

2.1 Product Overview



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.

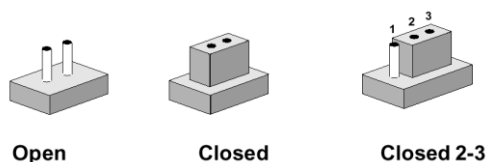


Note: Make sure the heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause the system to hang or unstable

2.3 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.



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



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

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

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

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

Jumpers

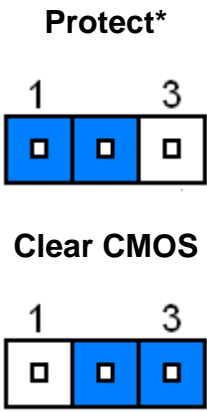
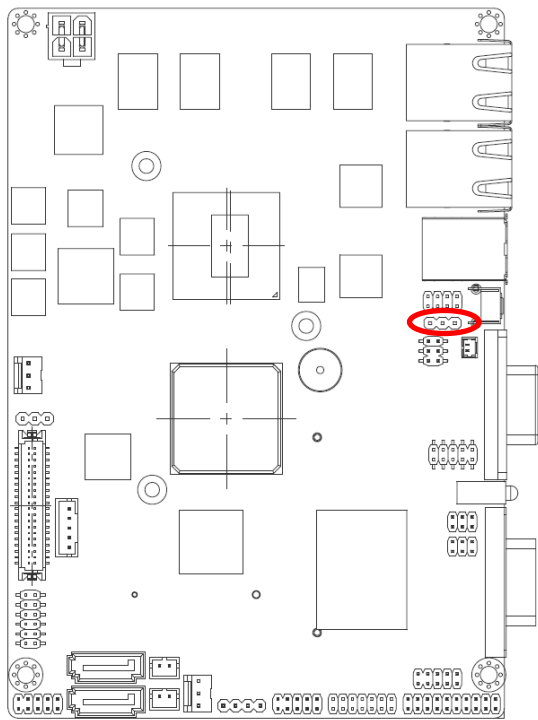
Label	Function	Note
JFTP1	Miscellaneous settings connector	5 x 2 header, pitch 2.0 mm
CMOS1	Clear CMOS	3 x 1 header, pitch 2.54 mm

Connectors

Label	Function	Note
BT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
CN1	Audio connector	6 x 2 header, pitch 2.0 mm
CN2	LVDS connector	2 x 20 header, pitch 1.25mm
CN3	LCD inverter connector	5 x 1 wafer, pitch 2.0mm
CN4	Power connector	2 x 2 wafer, pitch 4.2 mm
CN5	CAN connector	4 x 1 wafer, pitch 2.54 mm
CN6	USB 2 & 3 connector	5 x 2 header, pitch 2.0 mm
CN7	LPC connector	7 x 2 header, pitch 2.0 mm
CN8	SPI connector	3 x 2 header, pitch 2.0 mm
CN9	Serial port 2 connector	5 x 2 header, pitch 2.0 mm
CN10	Ps2 connector	4 x 2 header, pitch 2.0 mm
CN11	Serial port 3 connector	5 x 2 header, pitch 2.0 mm
CN12/ CN13	RJ-45 Ethernet connector 1/2	
CN14	Serial port 5 in RS-485 mode	3 x 2 header, pitch 2.0 mm
CN15	Serial port 4 in RS-422 mode	3 x 2 header, pitch 2.0 mm
CN16/ CN17	USB 0 & 1 connector/ Ps2 connector	Double Deck/ mini-DIN-6
CN18	VGA connector	D-sub 15-pin, female
CN19	Serial port 1 connector	D-sub 9-pin, male
CN20	Micro SD connector	Micro SD card
CN21	Mini PCI Express Connector	
CN22	Mini PCI Express latch	
DIO1	General purpose I/O connector	10 x 2 header, pitch 2.0 mm
D13	Power & HDD LED indicator	
FAN1	CPU fan connector	3 x 1 wafer, pitch 2.54 mm
FAN2	System fan connector	3 x 1 wafer, pitch 2.54 mm
RS2	Reset Button	
SPWR 1/2	SATA power connector 1/2	2 x 1 wafer, pitch 2.0 mm
SATA 1/2	Serial ATA connector 1/2	
VR1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.54mm

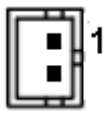
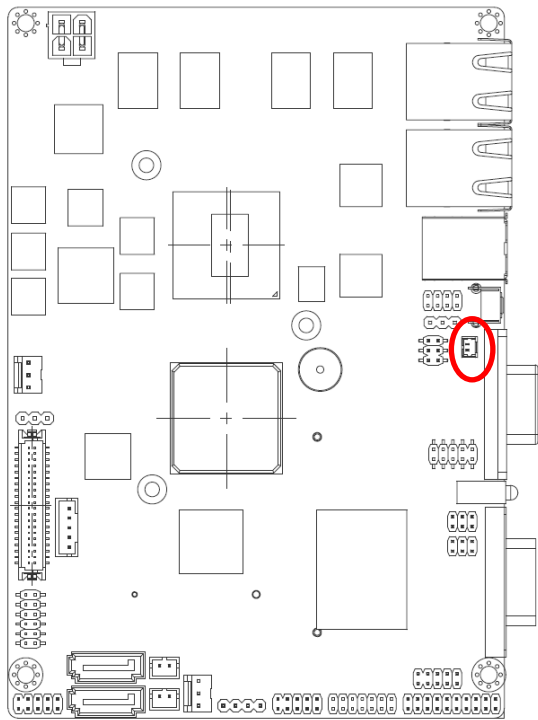
2.4 Setting Jumpers & Connectors

2.4.1 Clear CMOS (CMOS1)



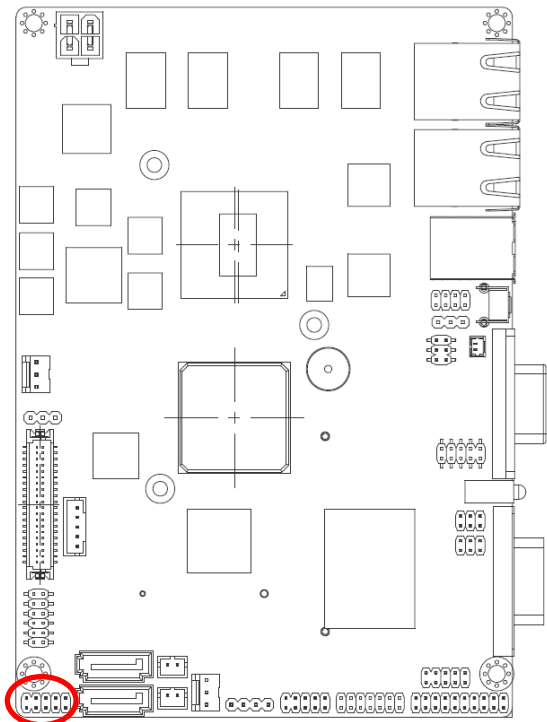
* Default

2.4.2 Battery connector (BAT)



Signal	PIN
BAT	1
GND	2

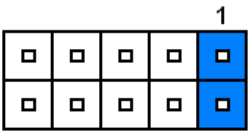
2.4.3 Miscellaneous settings connector (JFTP1)



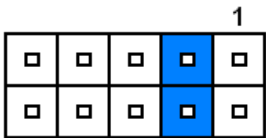
* Default

(Power Button)

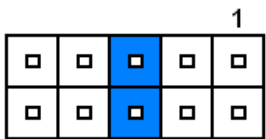
AT Mode*



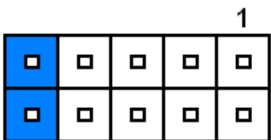
ATX Mode



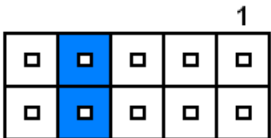
Power LED Mode



Reset Button Mode

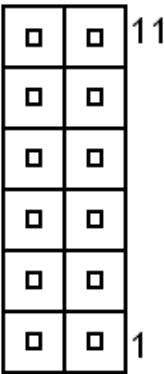
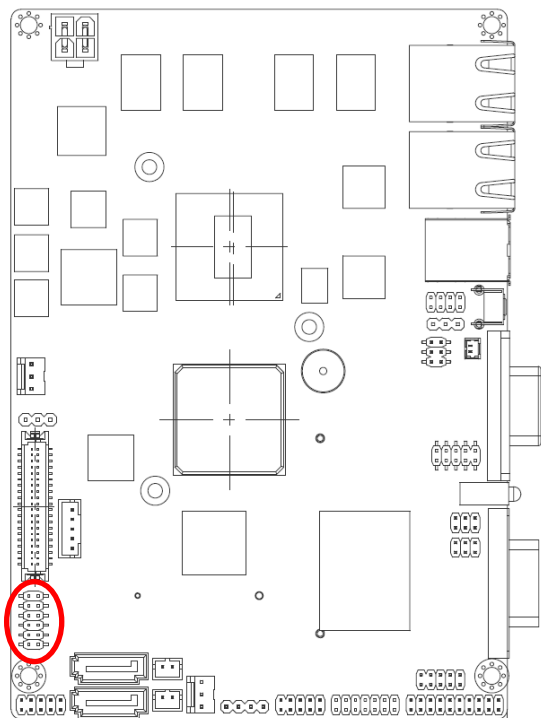


HDD LED Mode



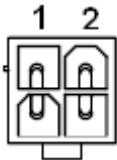
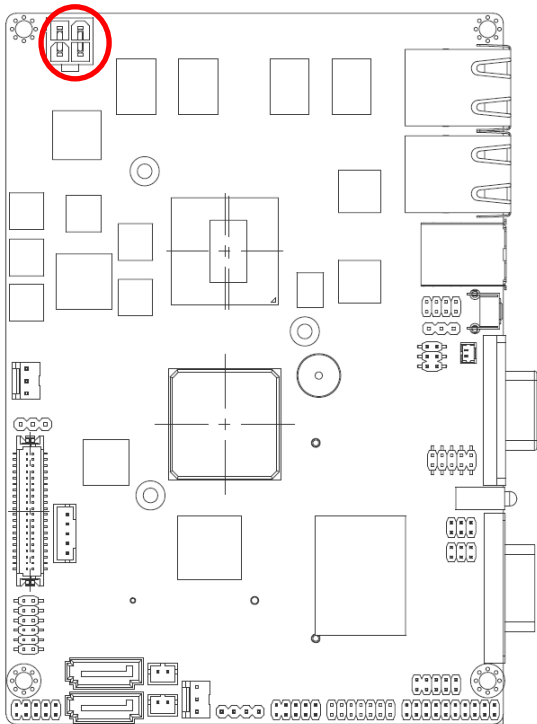
Signal	PIN	PIN	Signal
AT_EN	1	2	PWR_BTN#_SW
GND	3	4	AT_EN
GND	5	6	PWR_LED+
HDD_LED	7	8	HD_LED+
GND	9	10	SYS_RST#_BTN

2.4.4 Audio connector (CN1)



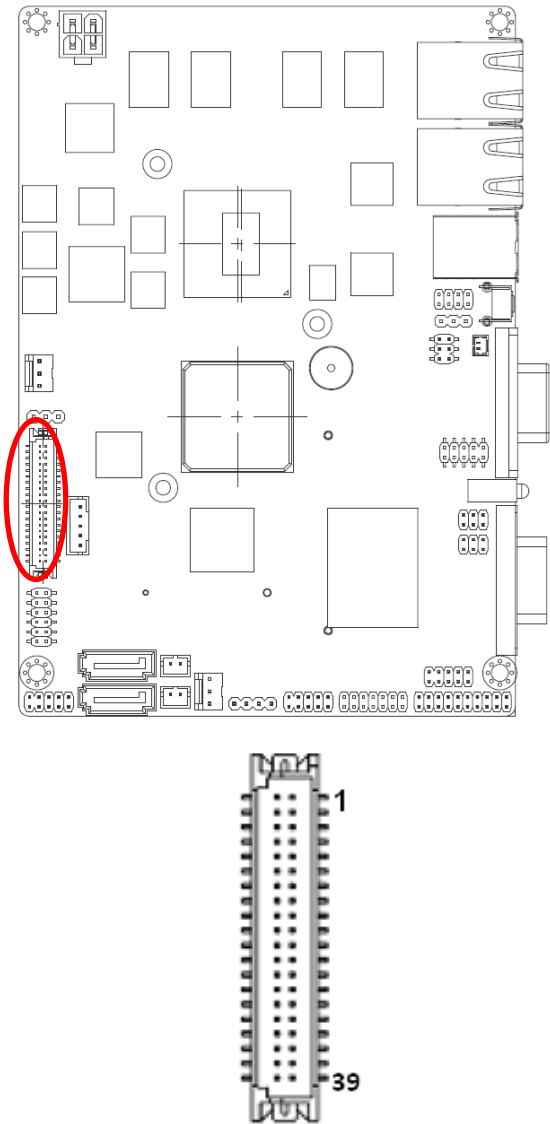
Signal	PIN	PIN	Signal
GND	12	11	MIC1-JD
LINE1-JD	10	9	FRONT-JD
MIC-LIN	8	7	MIC-RIN
LINE1_LIN	6	5	LINE1_RIN
GND	4	3	GND
LINEOUT_L	2	1	LINEOUT_R

2.4.5 Power connector (CN4)



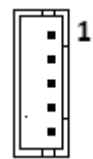
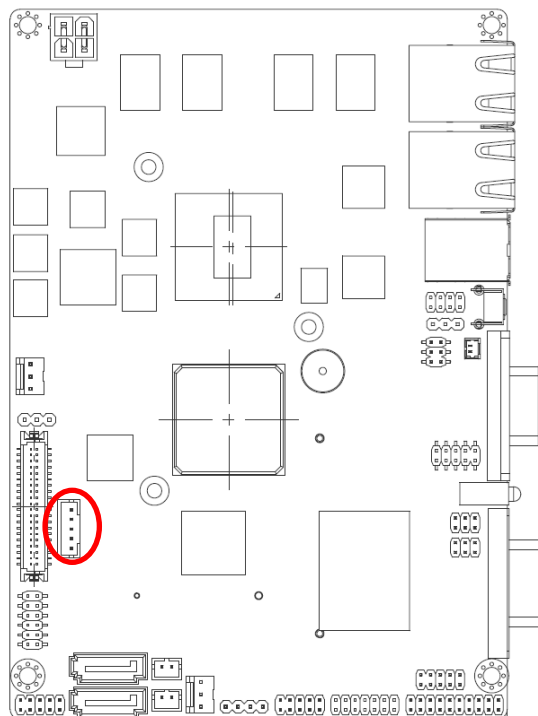
Signal	PIN	PIN	Signal
GND	1	2	GND
12V	3	4	12V

2.4.6 LVDS connector (CN2)

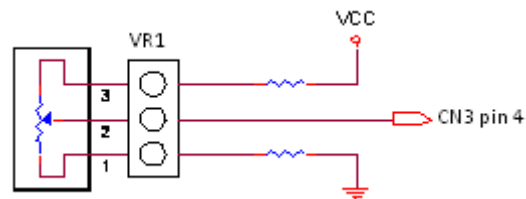


Signal	PIN	PIN	Signal
VDD5_LVDS	2	1	VDD3_LVDS
VDD5_LVDS	4	3	VDD3_LVDS
DDC_DAT_OVL	6	5	DDC_CLK_OVL
GND	8	7	GND
DATA_P0	10	9	DATA_P1
DATA_N0	12	11	DATA_N1
GND	14	13	GND
DATA_P2	16	15	DATA_P3
DATA_N2	18	17	DATA_N3
GND	20	19	GND
NC	22	21	NC
NC	24	23	NC
GND	26	25	GND
NC	28	27	NC
NC	30	29	NC
GND	32	31	GND
LVDS_CLKP	34	33	NC
LVDS_CLKN	36	35	NC
GND	38	37	GND
NC	40	39	NC

2.4.7 LCD Inverter Connector (CN3)



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



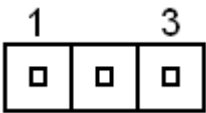
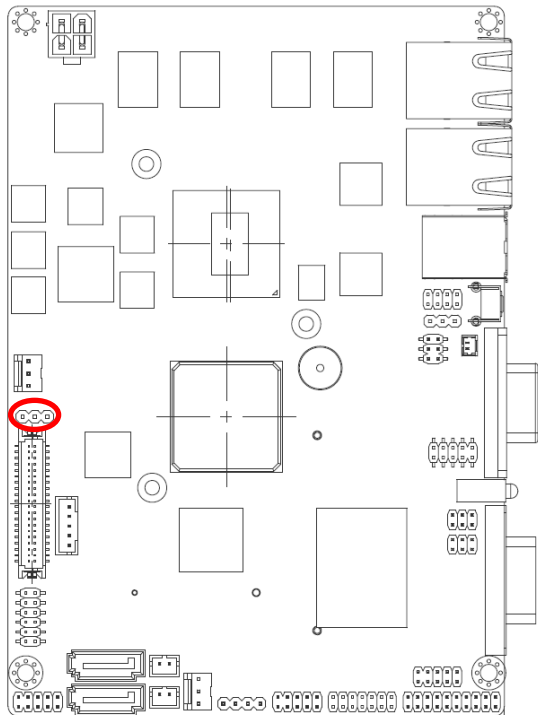
Variation Resistor
(Recommended: 4.7KΩ, >1/16W)

Note: For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by **VR1**.

2.4.7.1 Signal Description – LCD Inverter Connector (CN3)

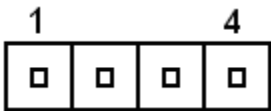
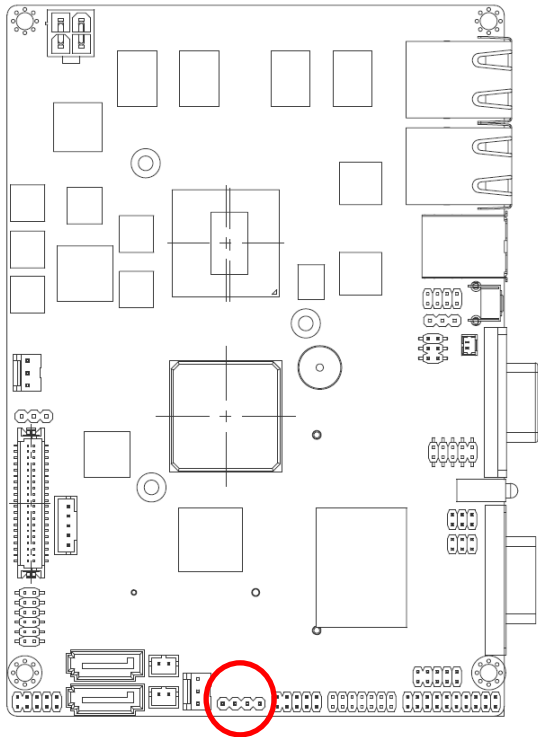
Signal	Signal Description
BRIGHT	Vadj = 0.75V ~ 4.25V (Recommended: 4.7KΩ, >1/16W)
BLKTEN_OVL	LCD backlight ON/OFF control signal

2.4.8 LCD backlight brightness adjustment (VR1)



Signal	PIN
+5V	1
BRIGHT	2
GND	3

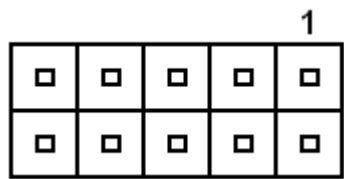
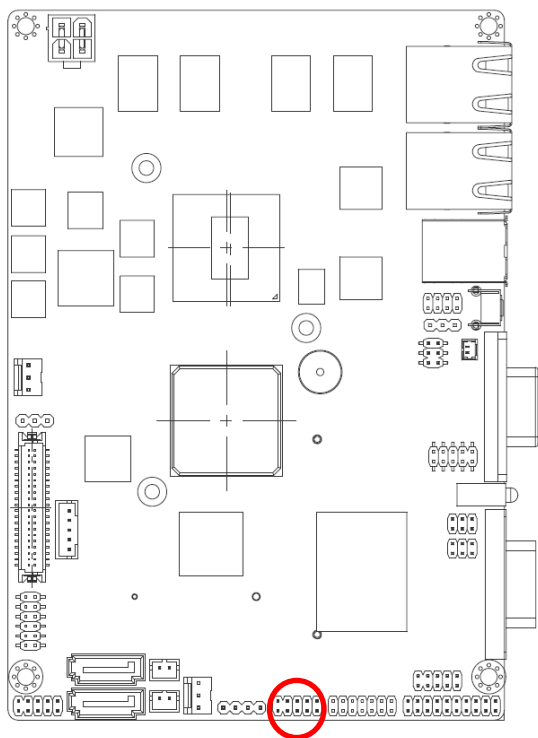
2.4.9 CAN connector (CN5)



Signal	PIN
CAN_H	1
GND	2
CAN_L	3
NC	4

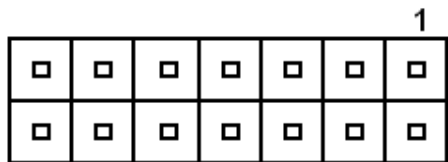
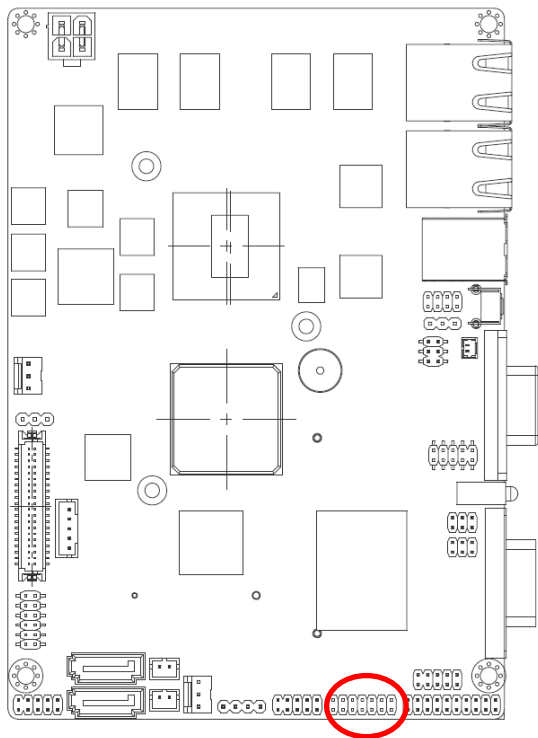
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2.4.10 USB 2 & 3 connector (CN6)



Signal	PIN	PIN	Signa
VCC_USB23	1	2	GND
USB2_N	3	4	GND
USB2_P	5	6	USB3_P
GND	7	8	USB3_N
GND	9	10	VCC_USB23

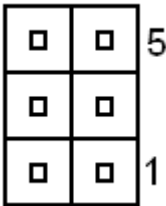
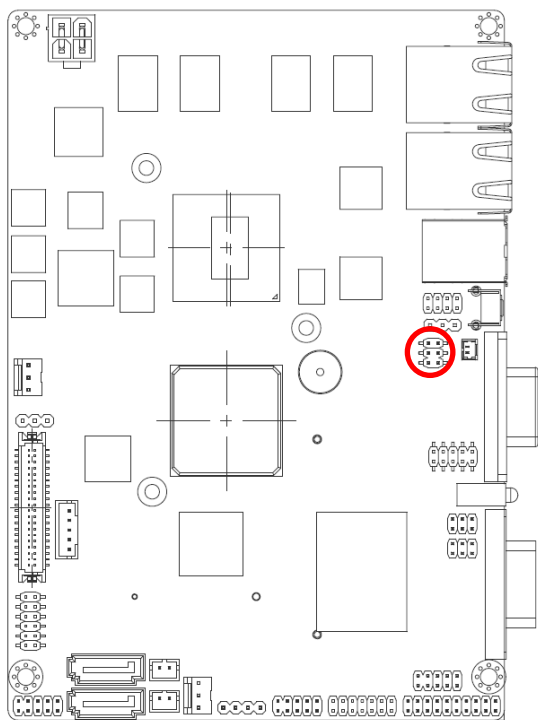
2.4.11 LPC connector (CN7)



Signal	PIN	PIN	Signal
AD0	1	2	V3P3_S
AD1	3	4	BUF_RESET#
AD2	5	6	LPC_FRAME#
AD3	7	8	LPC1_PCI_CLK
SERIRQ	9	10	GND
VCC_5S	11	12	GND
VCC5V_A	13	14	V3P3_S

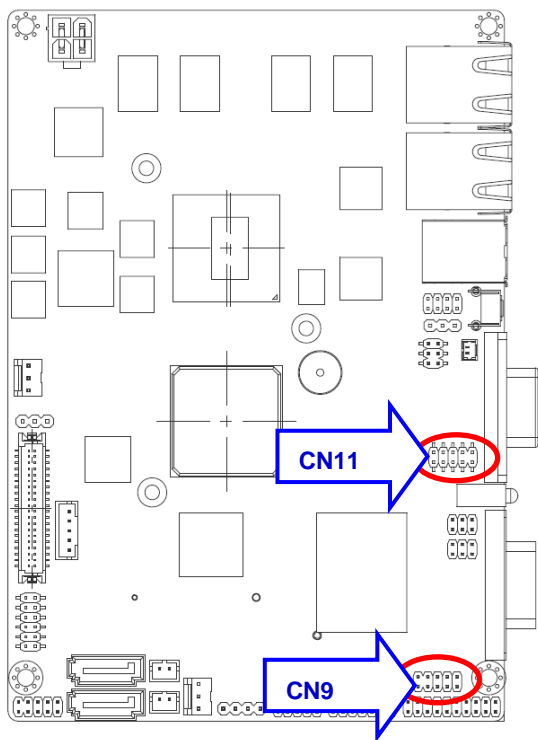
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2.4.12 SPI connector (CN8)

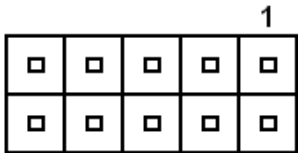


Signal	PIN	PIN	Signal
SI	6	5	SO
CLK_R	4	3	CS#_R
GND	2	1	V3P3_S

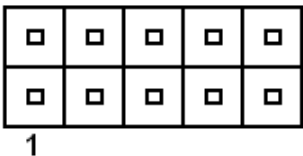
2.4.13 Serial port 2/3 connector (CN9 / CN11)



CN9

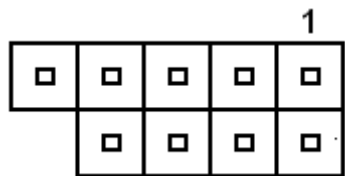
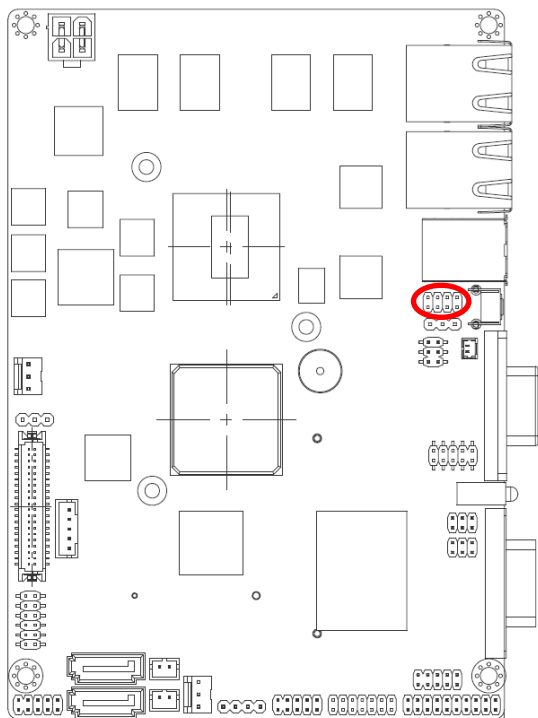


CN11



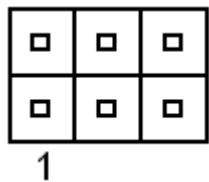
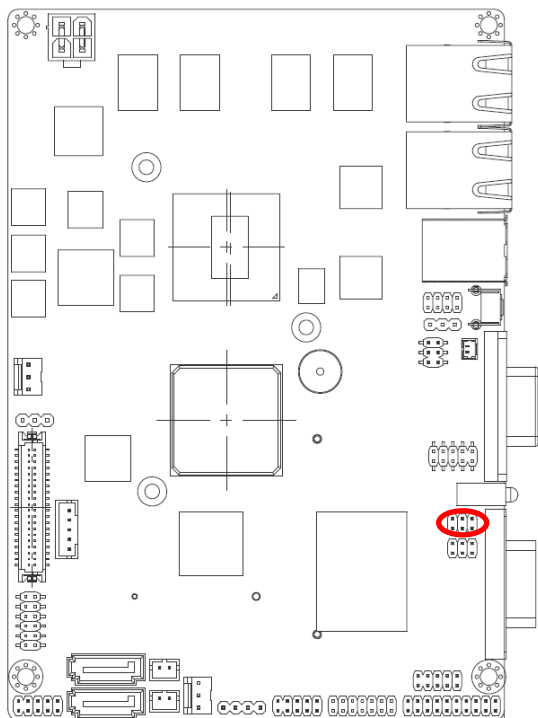
Signal	PIN	PIN	Signal
DCD2_3	1	2	RxDD2_3
TxDD2_3	3	4	DTR2_3
GND	5	6	DSR2_3
RTS2_3	7	8	CTS2_3
RI2_3	9	10	NC

2.4.14 Ps2 connector (CN10)



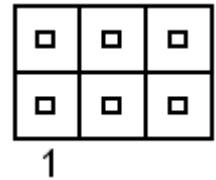
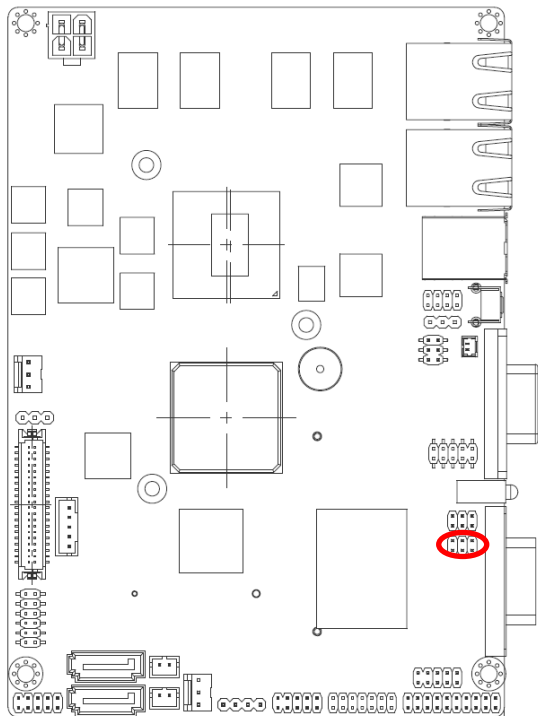
Signal	PIN	PIN	Signal
KBDA	1	2	KBCK
GND_PS2	3	4	VCC_PS2
MSDA	5	6	MSCK
NC	7		

2.4.15 Serial port 4 in RS-422 mode (CN15)



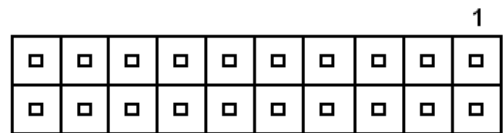
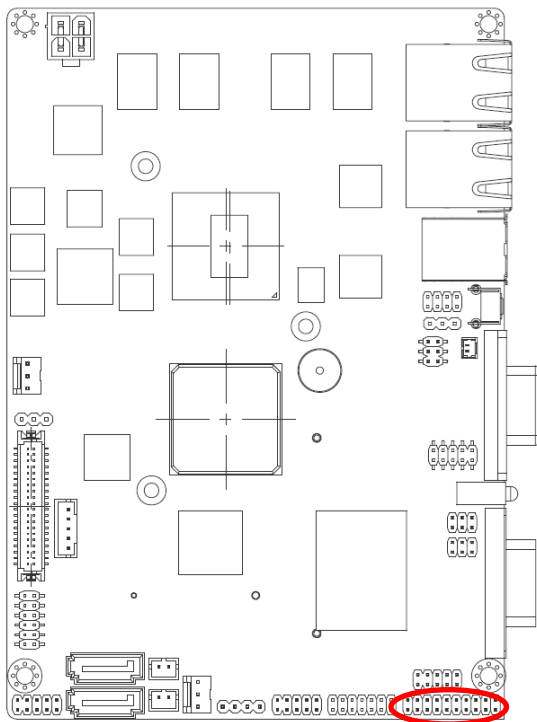
Signal	PIN	PIN	Signal
TX-	1	2	RX-
TX+	3	4	RX+
+5V	5	6	GND

2.4.16 Serial port 5 in RS-485 mode (CN14)



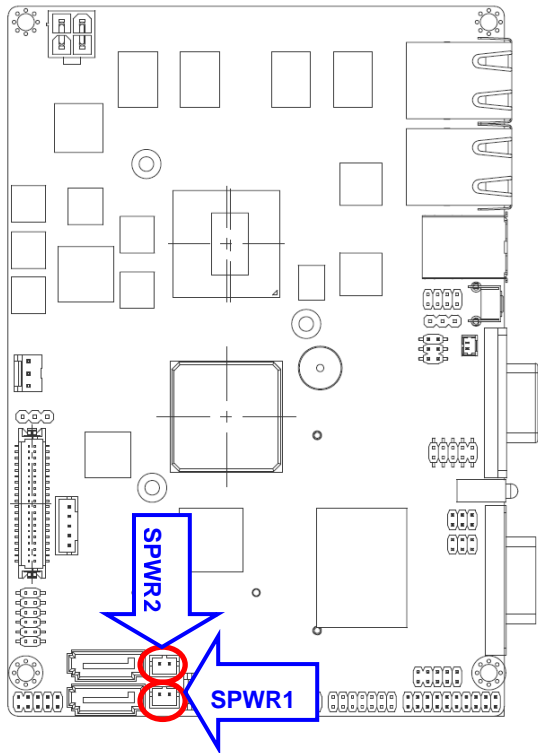
Signal	PIN	PIN	Signal
TX-	1	2	NC
TX+	3	4	NC
+5V	5	6	GND

2.4.17 General purpose I/O connector (DIO1)



Signal	PIN	PIN	Signal
DI0	1	2	DO10
DI1	3	4	DO11
DI2	5	6	DO12
DI3	7	8	DO13
DI4	9	10	DO14
DI5	11	12	DO15
DI6	13	14	DO16
DI7	15	16	DO17
SMB_CLK	17	18	SMB_DATA
GND	19	20	+5V

2.4.18 SATA power connector (S_PWR1)



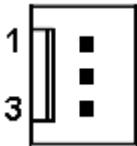
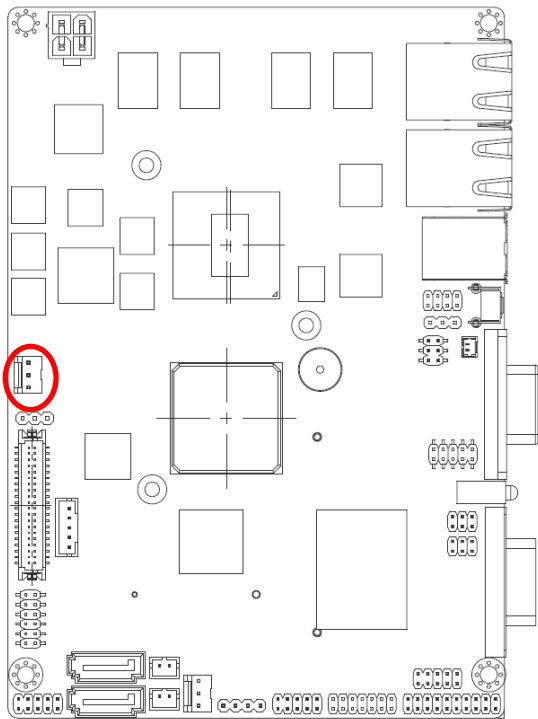
Signal	PIN
GND	1
SATA_PWR	2



Note:

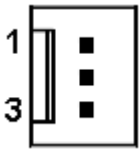
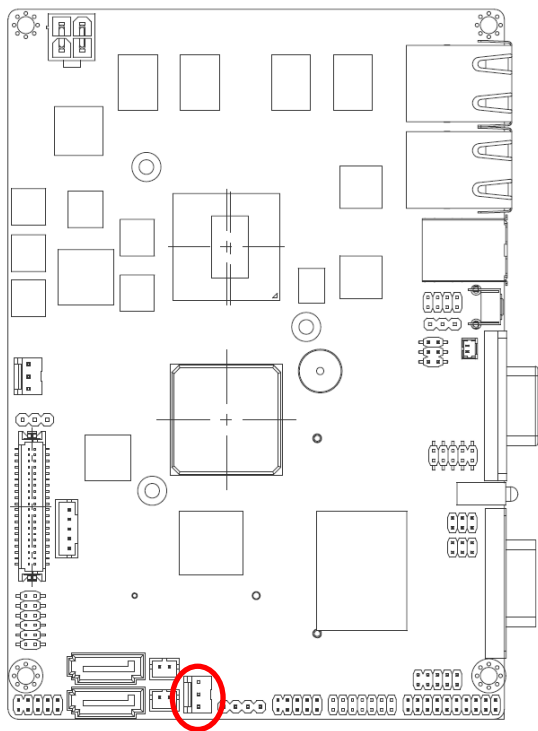
SATA_PWR is _+5V for SATA DOM use

2.4.19 CPU fan connector (FAN1)



Signal	PIN
GND	1
CPUFAN_PWM	2
CPUFANIN	3

2.4.20 System fan connector (FAN2)



Signal	PIN
GND	1
SYSFAN_PWM	2
SYSFANIN	3

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 immediately after switching the system on, or

By pressing the 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**

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

3.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

3.5 In Case of Problems

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

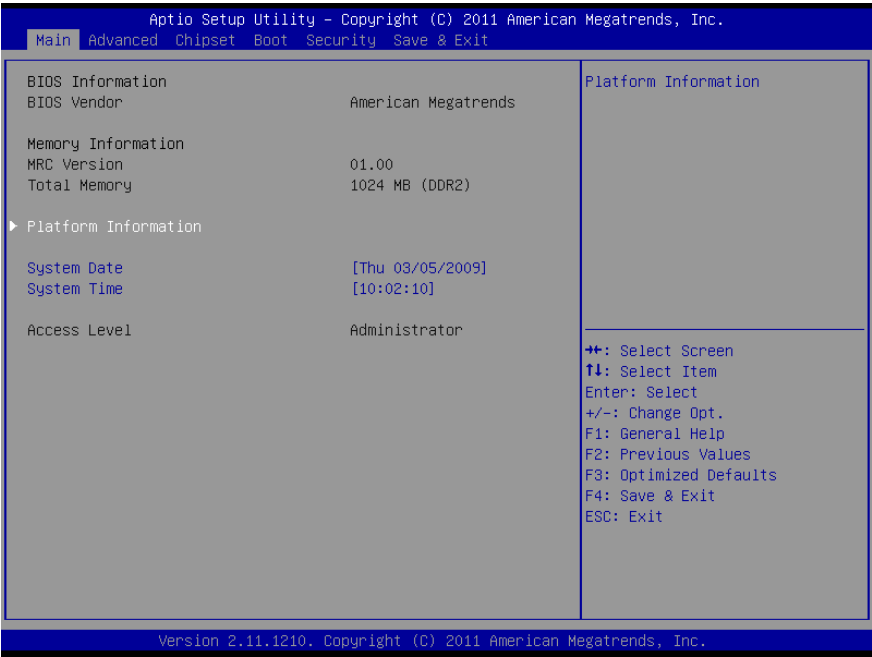
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and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

3.6 BIOS setup

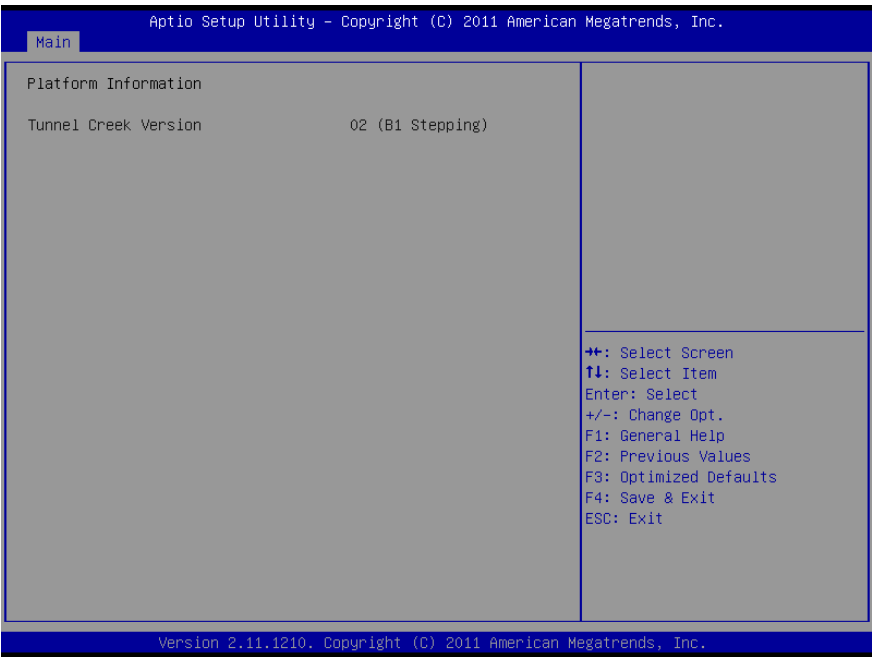
Once you enter the AMI BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

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 Platform Information



3.6.1.2 System Date

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

3.6.1.3 System Time

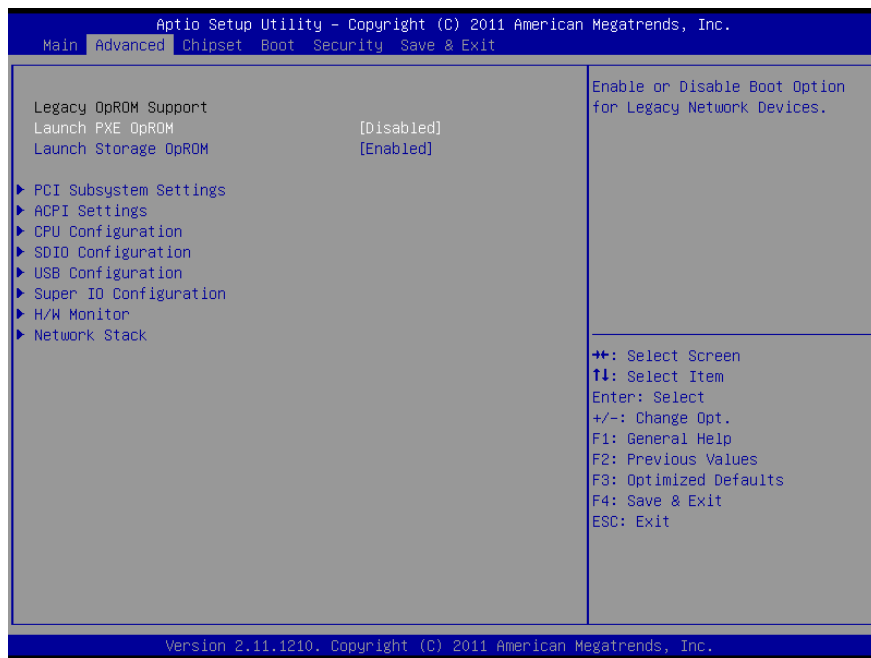
Use the system Date option to set the system date. Manually enter the day, month and year.



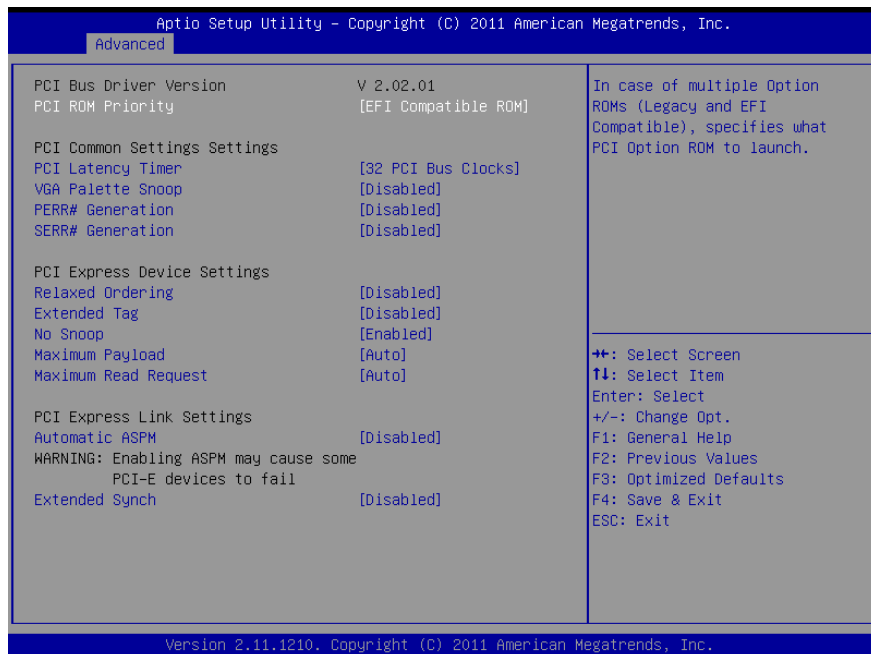
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.2 Advanced BIOS settings

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



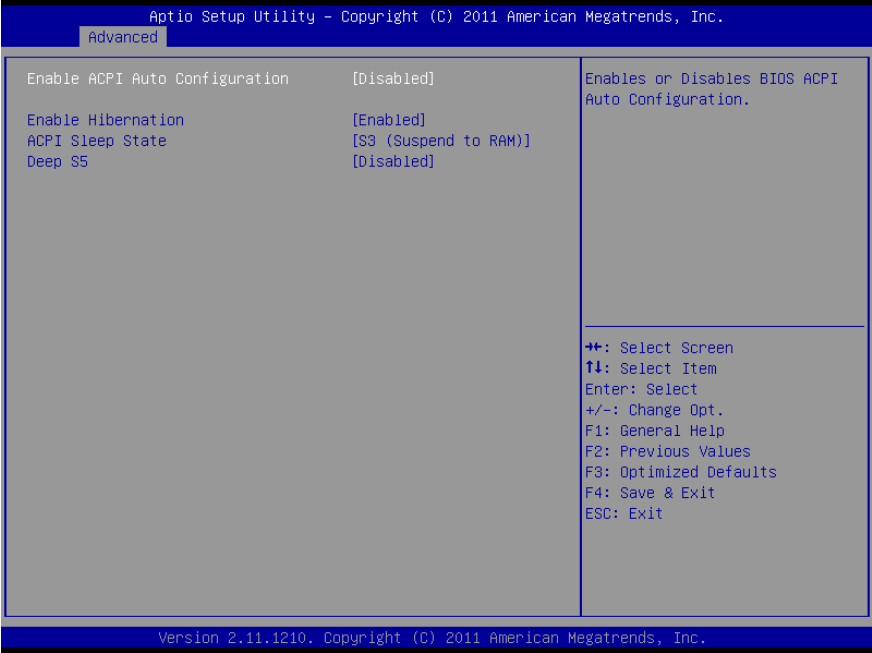
3.6.2.1 PCI subsystem Settings



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#
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
Automatic ASPM	Disabled Auto Force L0	Automatically enable ASPM based on reported capabilities and known issues.
Extended Synch	Disabled Enabled	If ENABLED allows generation of Extended Synchronization patterns.

3.6.2.2 ACPI Settings

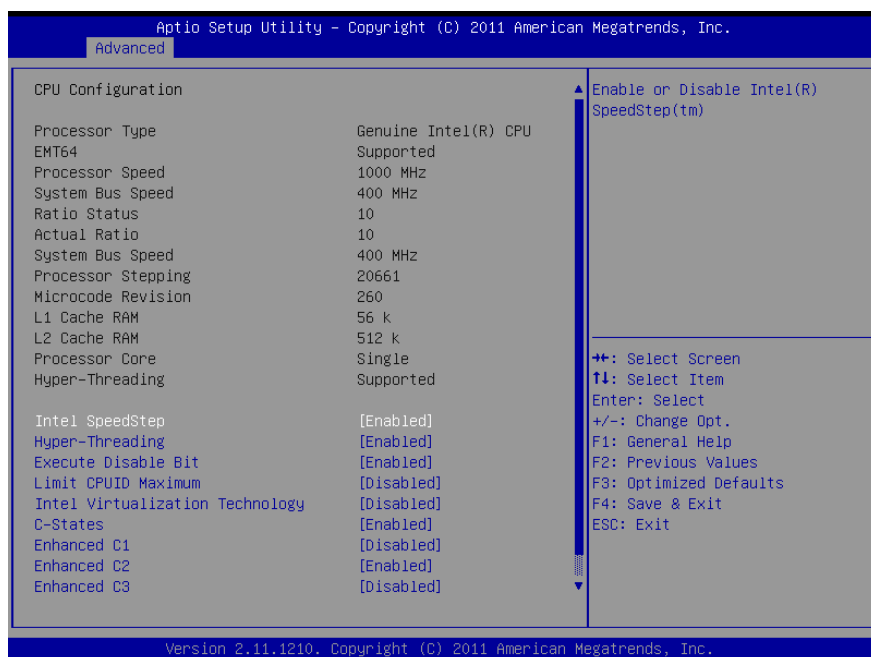
The **ACPI Configuration** menu configures Advanced Configuration and Power Interface (ACPI) options.



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.
Deep S5	Disabled Enabled	Enable or Disable Deep S5

3.6.2.3 CPU Configuration

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

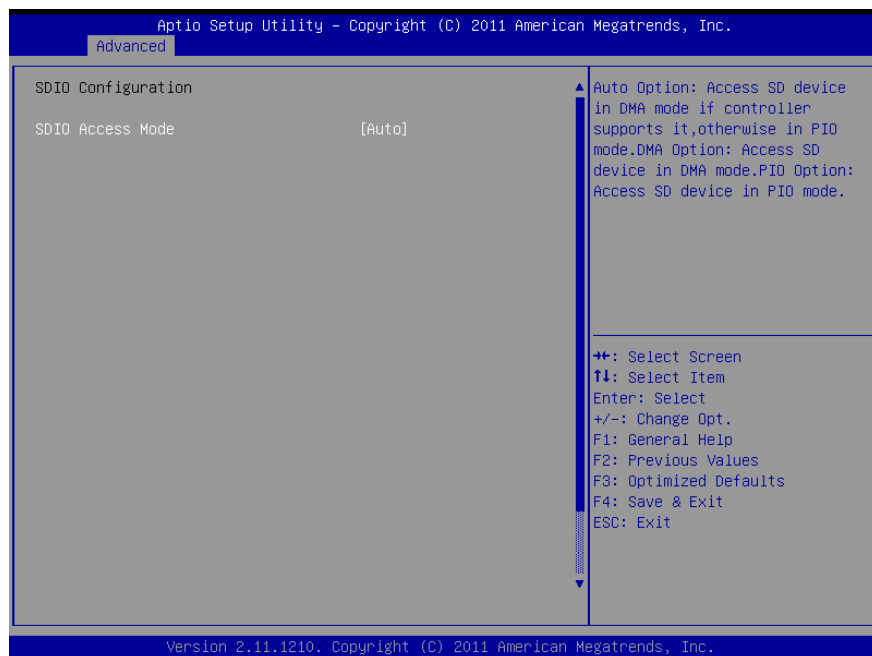


Item	Options	Description
Intel SpeedStep	Disabled Enabled	Enable or Disable Intel ® SpeedStep ™
Hyper-Threading	Disabled Enabled	Enable for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology)
Core-Multi Processing	Disabled Enabled	Enable or Disable Core-Multi processing mode
Execute Disable Bit	Disabled Enabled	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.)
Limit CPUID Maximum	Disabled Enabled	Disabled for windows XP
Intel Virtualization Technology	Disabled Enabled	When enabled, a VMM can utilize the additional hardware capabilities provided Vanderpool Technology.
C-States	Disabled Enabled	Enable or Disable C2 and above
Enhanced C1	Disabled Enabled	Enable or Disable Enhanced C1 State

Enhanced C2	Disabled Enabled	Enable or Disable Enhanced C2 State
Enhanced C3	Disabled Enabled	Enable or Disable Enhanced C3 State
Enhanced C4	Disabled Enabled	Enable or Disable Enhanced C4 State
Deep C4	Disabled Enabled	Enable or Disable Deep C4 State

3.6.2.4 SDIO Configuration

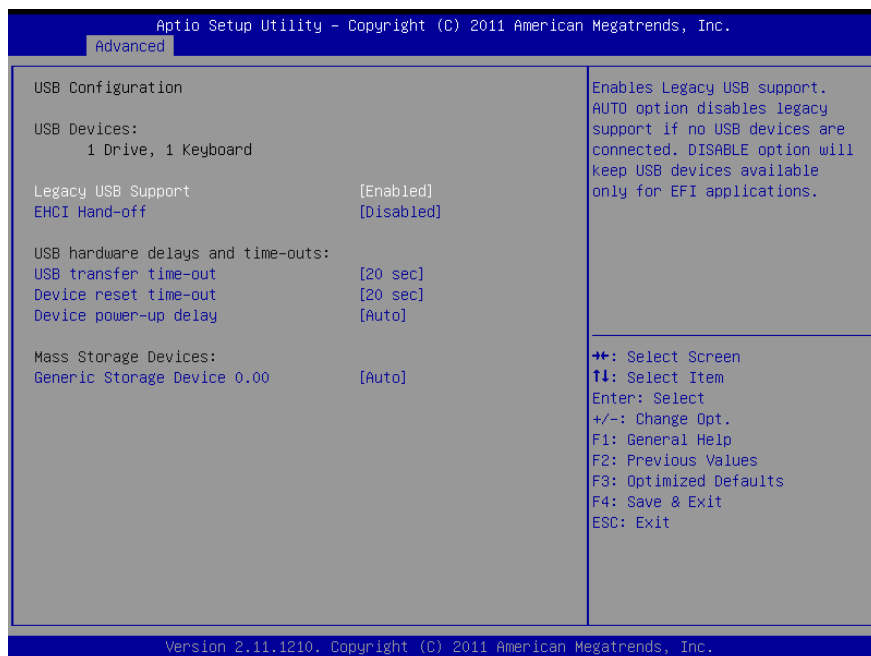
Configure Secure Digital Input Output.



Item	Options	Description
SDIO Access Mode	Auto DMA PIO	<ul style="list-style-type: none"> — Auto Option: Access SD device in DMA mode if controller supports it, otherwise in PIO mode. — DMA Option: Access SD device in DMA mode. — PIO Option: Access SD device in PIO mode.

3.6.2.5 USB Configuration

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

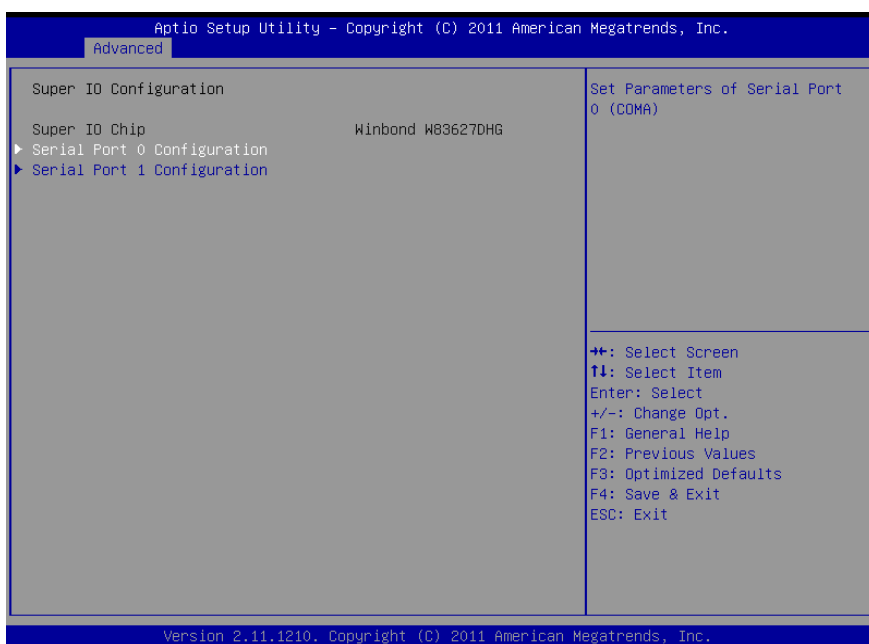


Item	Options	Description
Legacy USB Support	Enabled Disabled Auto	<ul style="list-style-type: none"> - Enables Legacy USB support. - AUTO option disables legacy support if no USB devices are connected. - DISABLE option will keep USB devices available only for EFI applications
EHCI Hand-off	Disabled Enabled	This is a workaround for OSes without hand-off support. The EHCI ownership change should be claimed by EHCI driver.
USB transfer time-out	1 sec / 5 sec 10 sec / 20 sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec / 20 sec 30 sec / 40 sec	USB mass storage Start Unit Command time-out
Device power-up delay	Auto Manual	<p>Maximum time the device will take before it properly reports itself to the Host Controller.</p> <ul style="list-style-type: none"> - 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	1~40seconds	Delay range is 1..40 seconds, in one second increments

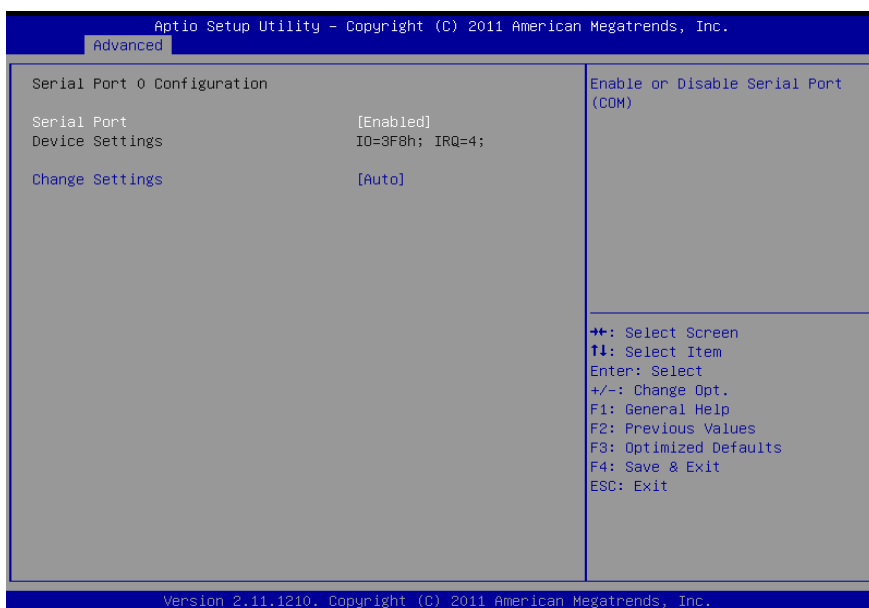
<p>Generic storage device 0.00</p>	<p>Auto Floppy Forced FDD Hard Disk CD-ROM</p>	<p>Mass storage device emulation type.</p> <ul style="list-style-type: none"> - "AUTO": enumerates devices according to their media format. - Optical drives are emulated as 'CD-ROM'. - Drives with no media will be emulated according to a drive type.
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3.6.2.6 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. Please refer to 3.6.2.5.1 and 3.6.2.5.2 for more information.

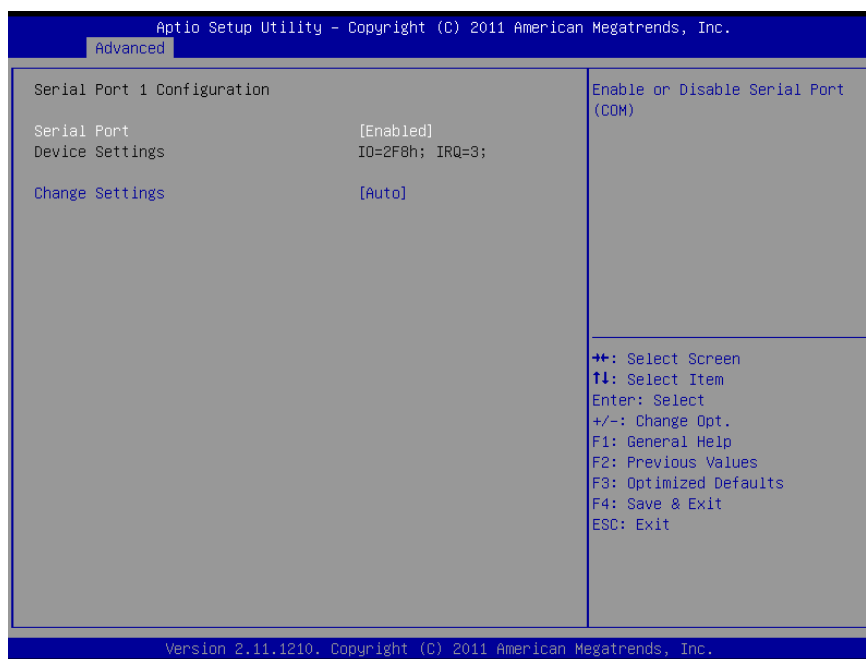


3.6.2.6.1 Serial Port 0 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled	Use the Serial port option to enable or disable the serial port.
Change Settings	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.

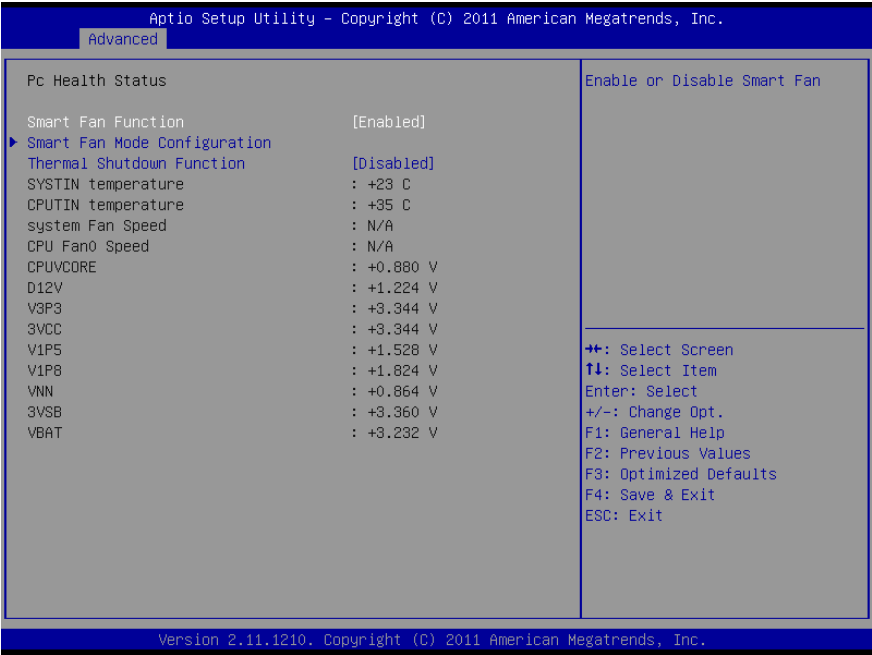
3.6.2.6.2 Serial Port 1 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled	Use the Serial port option to enable or disable the serial port.
Change Settings	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.

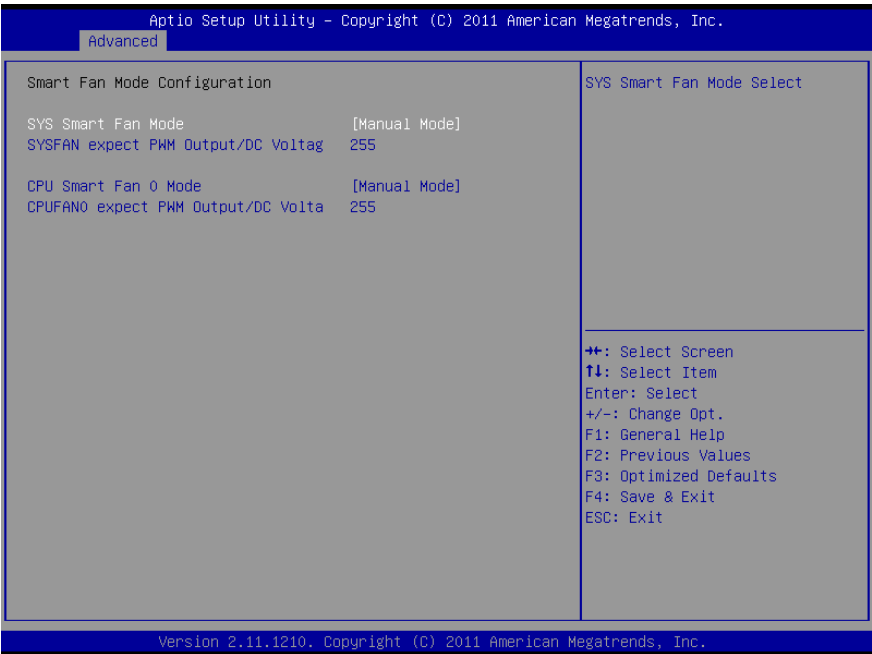
3.6.2.7 H/W Monitor

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



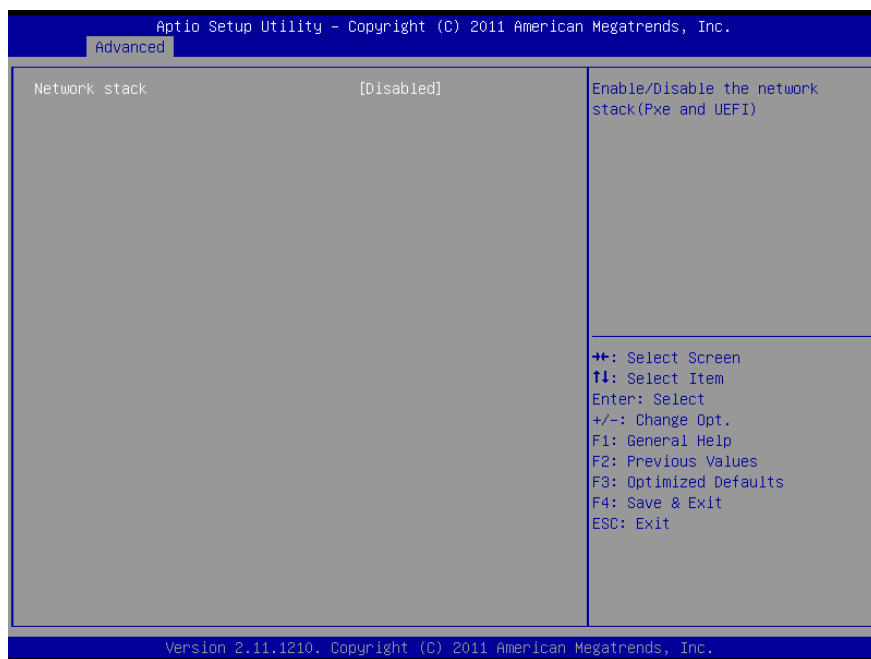
Item	Option	Description
Smart Fan Function	Disabled Enabled	Enable or Disable Smart Fan
Thermal Shutdown Function	Disabled 60 70 80	Thermal Shutdown Select

3.6.2.7.1 Smart Fan Mode Configuration



Item	Option	Description
SYS Smart Fan Mode	Manual Mode Thermal Cruise Mode	SYS Smart Fan Mode Select
SYSFAN expect PWM Output/DC Voltage Output	30 ~255	Input expect PWM Output Value (Range: 30 – 255)
CPU Smart Fan 0 Mode	Manual Mode Thermal Cruise Mode	CPU Smart Fan 0 Mode Select
CPUFAN0 expect PWM Output/DC Voltage Output	30 ~255	Input expect PWM Output Value (Range: 30 – 255)

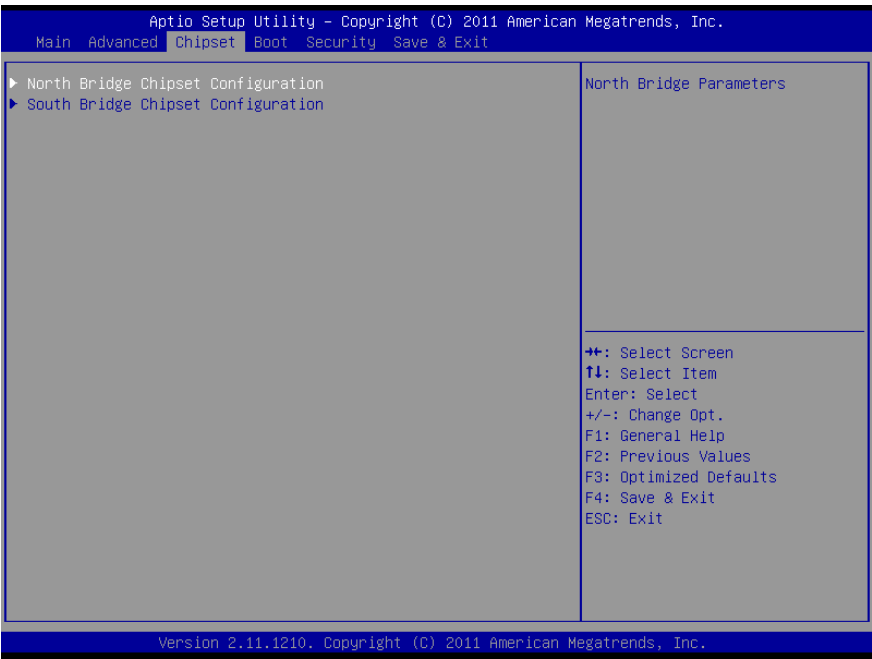
3.6.2.8 Network Stack



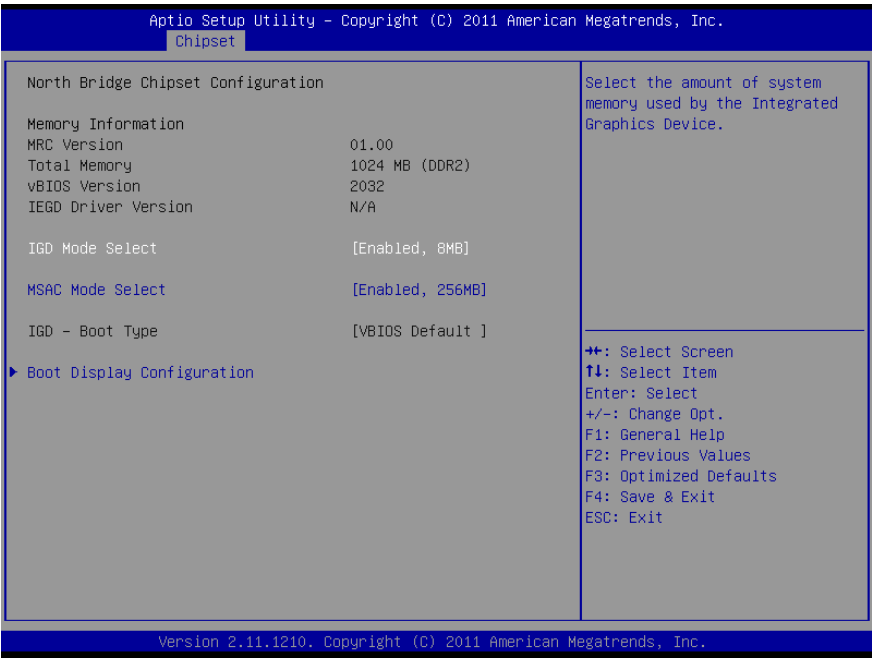
Item	Option	Description
Network stack	Disabled Enabled	Enable/Disable the network stack (Pxe and UEFI)

3.6.3 Chipset

This setting configures the North Bridge and South bridge.

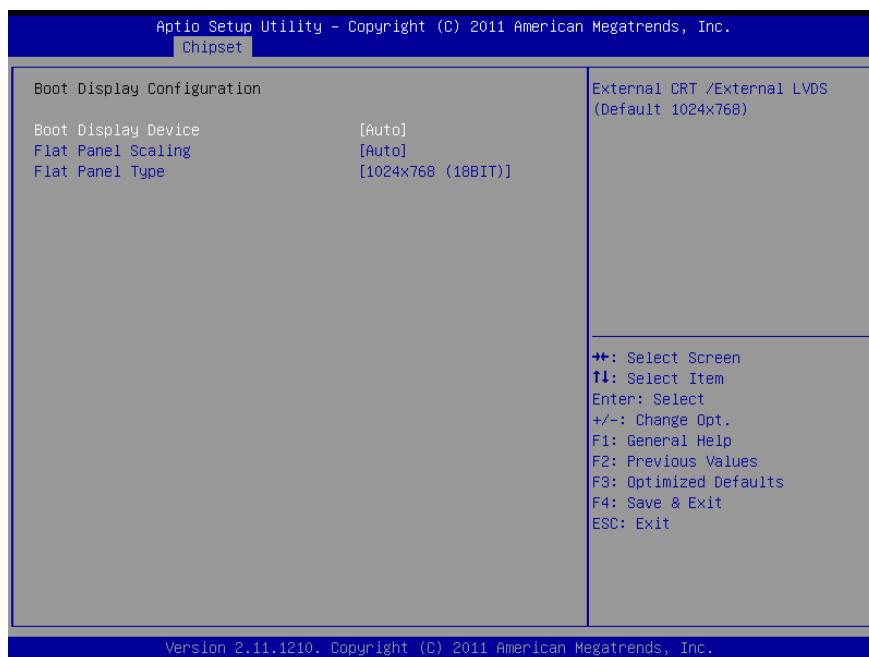


3.6.3.1 North Bridge configuration



Item	Option	Description
IGD Mode Select	Disabled Enabled, 1MB Enabled, 4MB Enabled, 8MB Enabled, 16MB Enabled, 32MB Enabled, 48MB Enabled, 64MB	Select the amount of system memory used by the Integrated graphics Device.
MSAC Mode Select	Enabled 512MB Enabled 256MB Enabled 128MB	Select the size of the graphics memory aperture and untrusted space. Used by the Integrated Graphics Device.
IGD - Boot Type	[VBIOS Default] CRT LFP CRT+LFP TV LFP - SDVO EFP TV- SDVO CRT+TV+LFP	Select the video device which will be activated during POST. This has no effect if external graphics present.

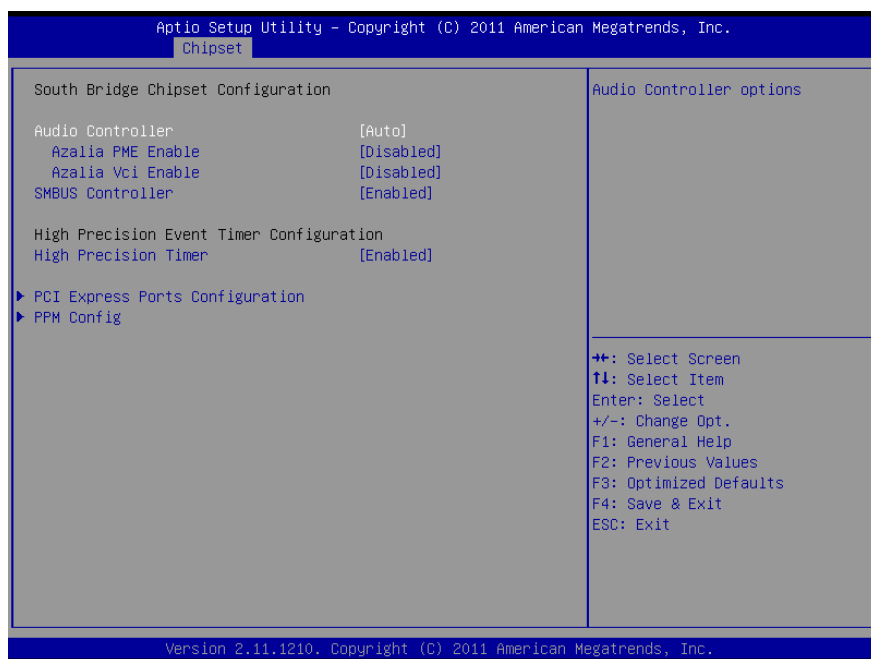
3.6.3.1.1 Boot Display configuration



Item	Option	Description
Boot Display Device	Auto Integrated LVDS External CRT	External CRT/ External LVDS (Default 1024 x768)

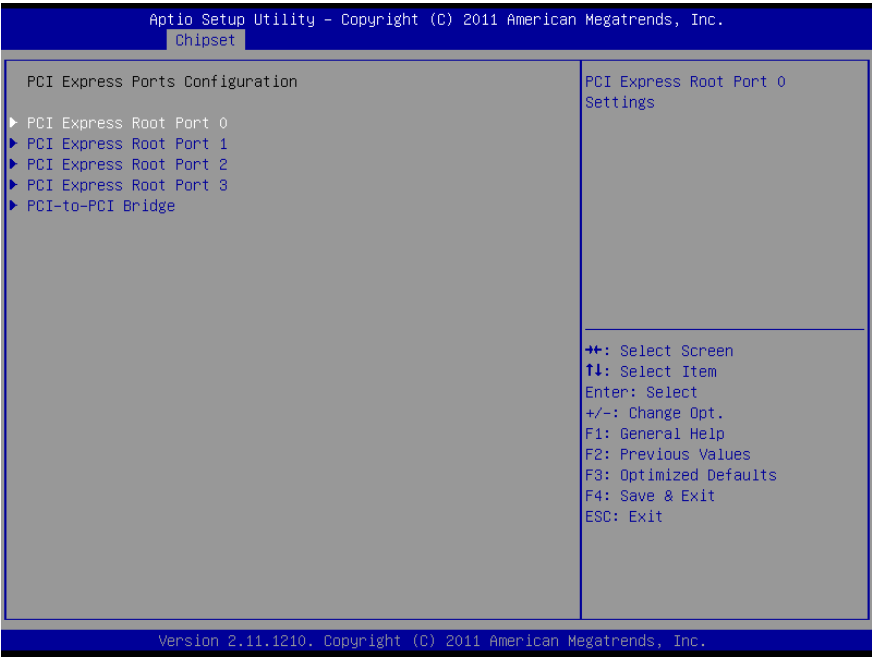
Flat Panel Scaling	Auto Forced Disabled	Flat panel Scaling
Flat Panel Type	640x480 (18BIT) 800x480 (18BIT) 800x600 (18BIT) 1024x600 (18BIT) 1024x768 (18BIT) 1280x800 (18BIT) 800x600 (24BIT) 1024x768 (24BIT) 1280x1024 (24BIT)	Flat panel type

3.6.3.2 South Bridge configuration

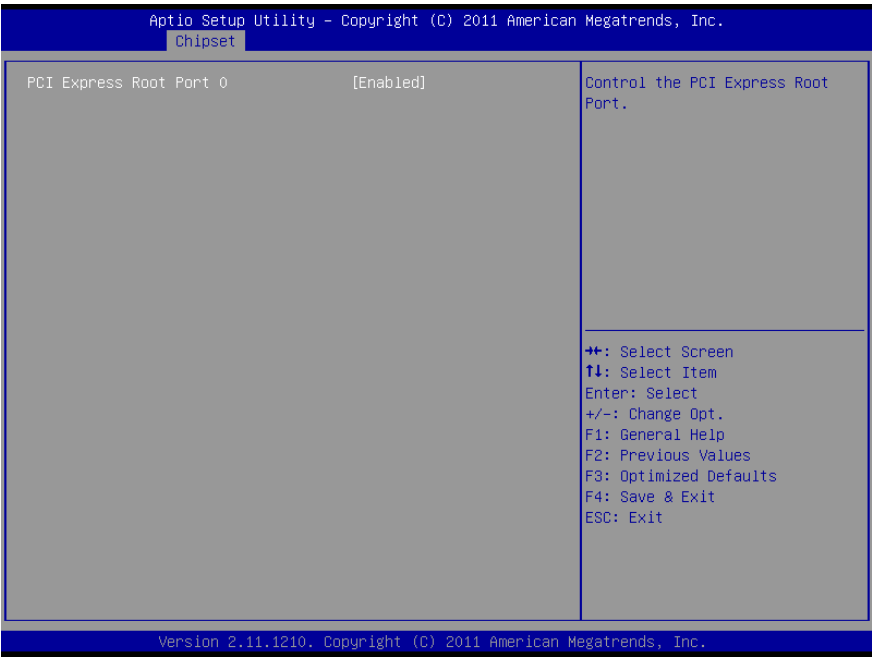


Item	Option	Description
Audio Controller	Disabled Enabled Auto	Audio Controller Options
Azalia PME Enable	Enabled Disabled	Enable/Disable Azalia
Azalia Vci Enable	Enabled Disabled	Enable/Disable Azalia Vci
SMBUS Controller	Enabled Disabled	SMBUS Controller options
High Precision Timer	Disabled Enabled	Enable/ Disable the High Precision Event Timer

3.6.3.2.1 PCI Express Ports Configuration

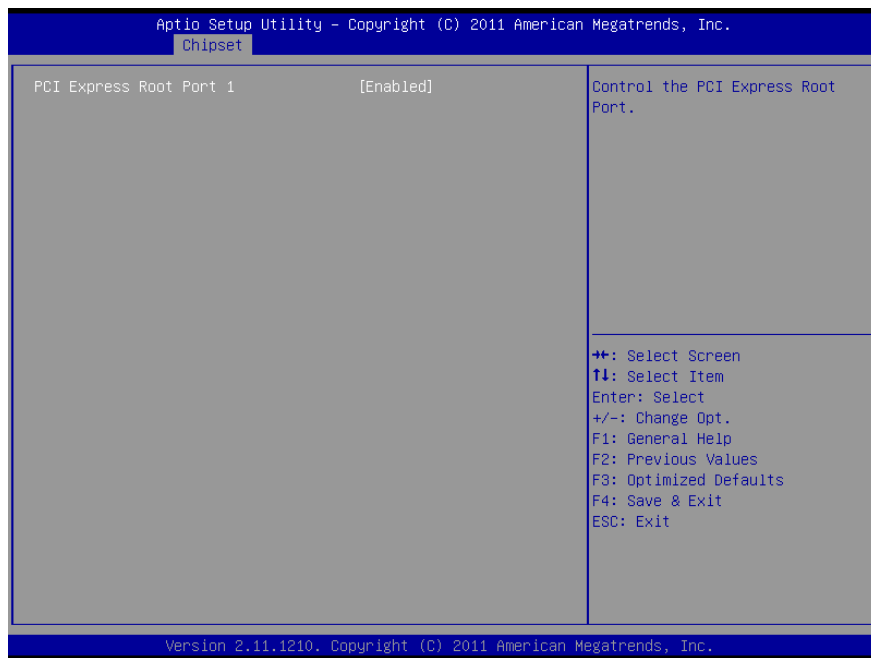


3.6.3.2.1.1 PCI Express Root Port 0 Configuration



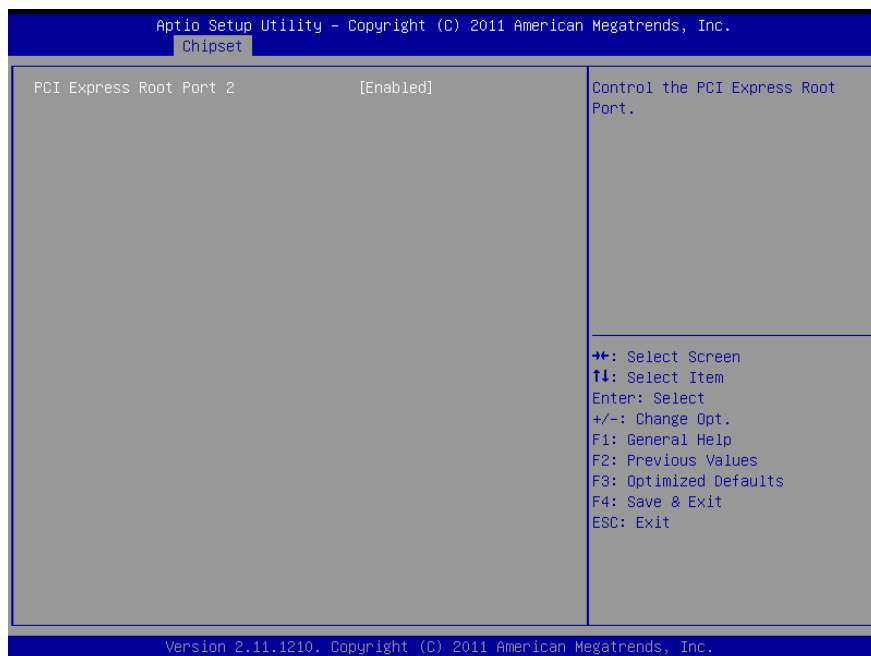
Item	Option	Description
PCI Express Root Port 0	Disabled Enabled	Control the PCI Express Root Port

3.6.3.2.1.2 PCI Express Root Port 1 Configuration



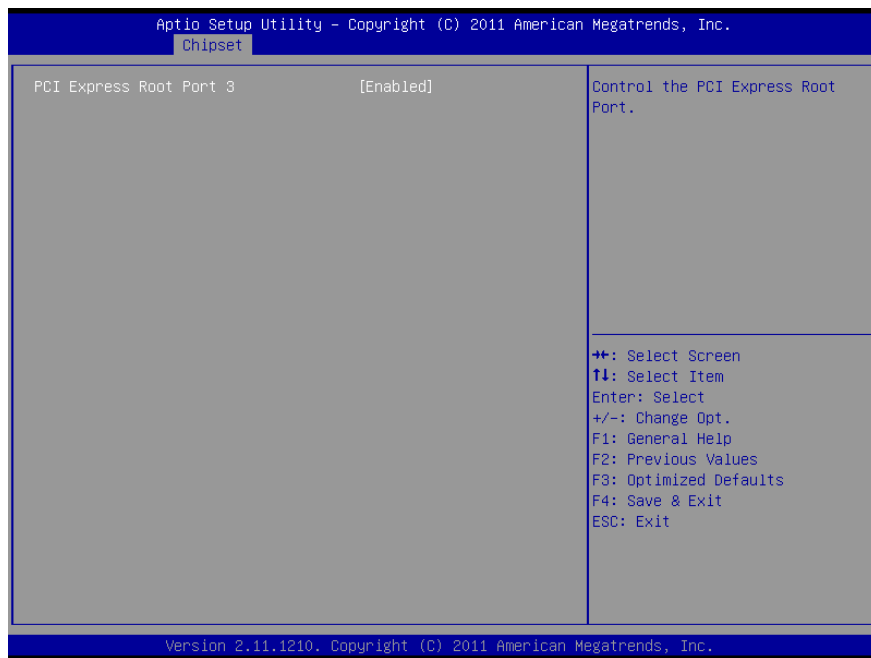
Item	Option	Description
PCI Express Root Port 1	Disabled	Control the PCI Express Root Port
	Enabled	

3.6.3.2.1.3 PCI Express Root Port 2 Configuration



Item	Option	Description
PCI Express Root Port 2	Disabled	Control the PCI Express Root Port
	Enabled	

3.6.3.2.1.4 PCI Express Root Port 3 Configuration



Item	Option	Description
PCI Express Root Port 3	Disabled Enabled	Control the PCI Express Root Port

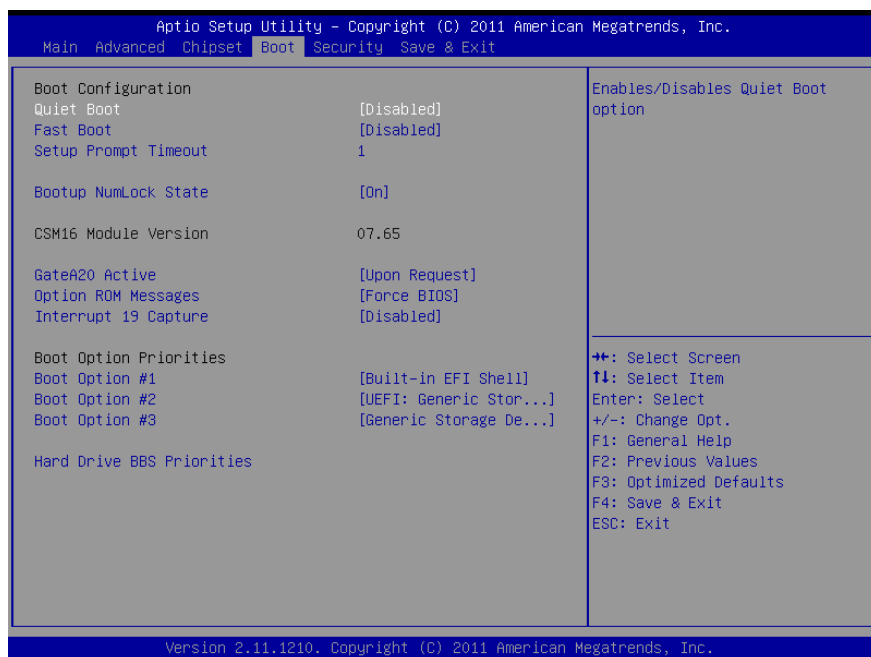
3.6.3.2.1.5 PCI-to-PCI Bridge



Item	Option	Description
Extra Bus Reserved	0~7	Extra Bus Reserved (0-7) for bridges behind this Root Bridge

3.6.4 Boot

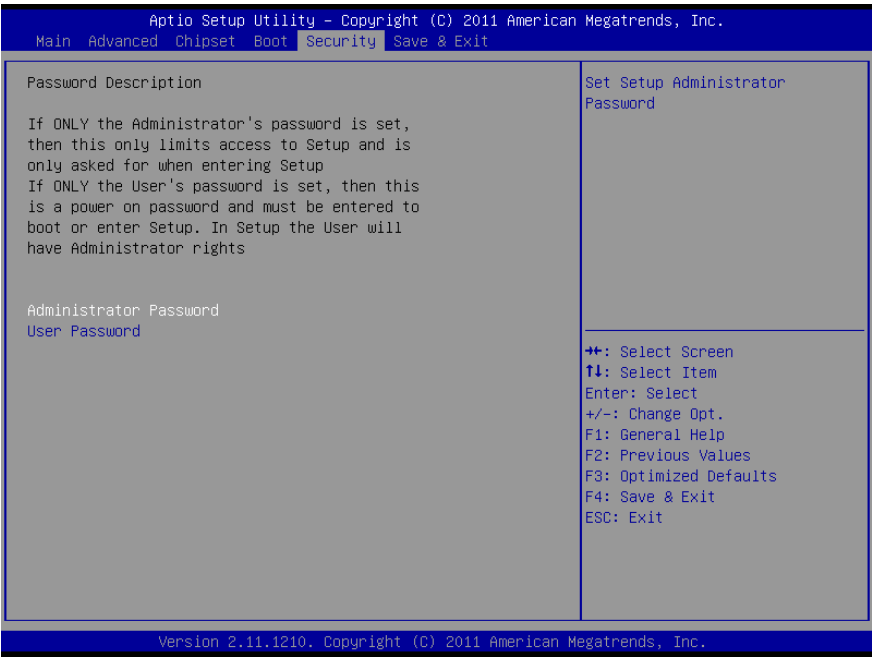
Use Boot menu to set system boot options.



Item	Option	Description
Quiet Boot	Enable, Disable	This item can help to select the screen display when the system boots.
Fast Boot	Enable, Disable	Enable/ Disable boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Setup Prompt Timeout	1	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
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	Enable, Disable	Enable: Allows Option ROMs to trap int 19.
Boot Option #1/2/3	Sets the system boot order	

3.6.5 Security

Use the Security menu to set system and user password.



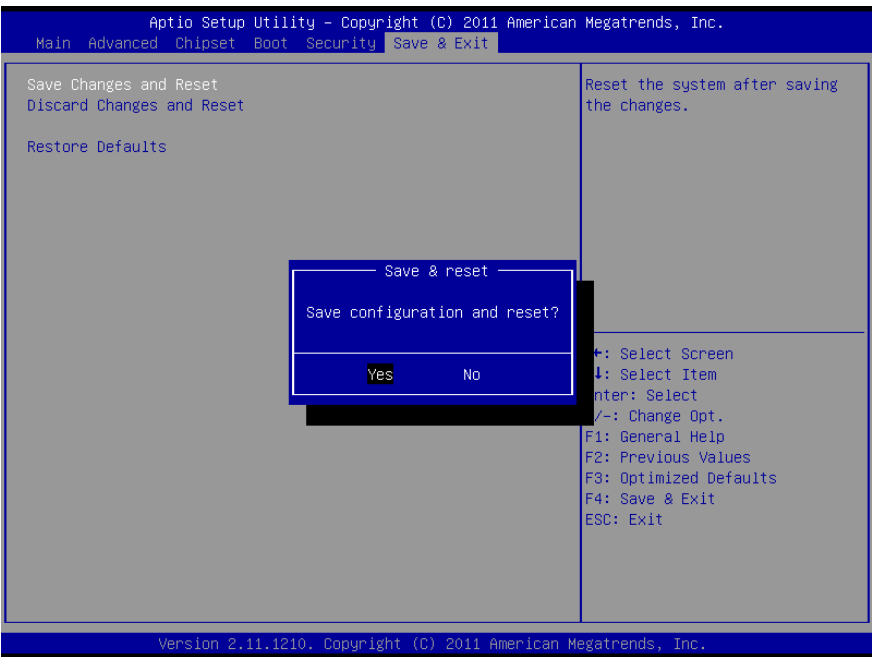
3.6.5.1 Administrator Password

Use the Administrator Password to set or change a administrator password.

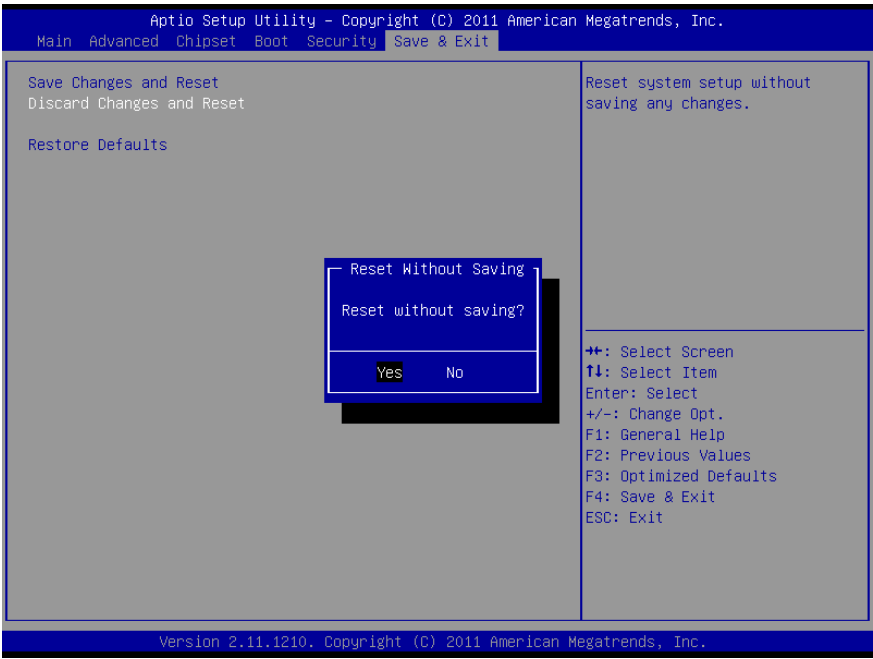
3.6.5.2 User Password

Use the User Password to set or change a user password.

3.6.6 Save changes & Reset



3.6.7 Discard changes & Reset



4. JMB installation & OS prompts

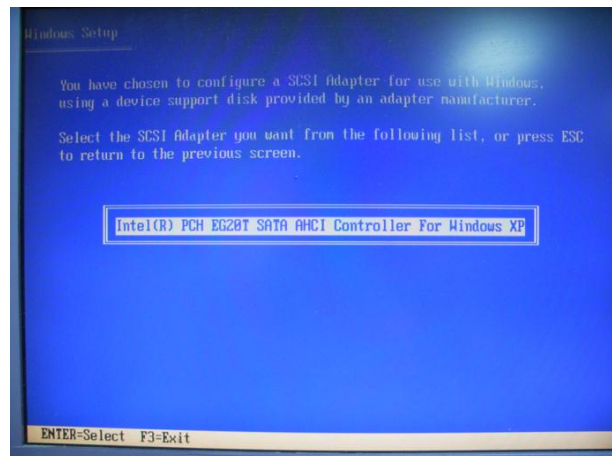


Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install JMB at Windows setup

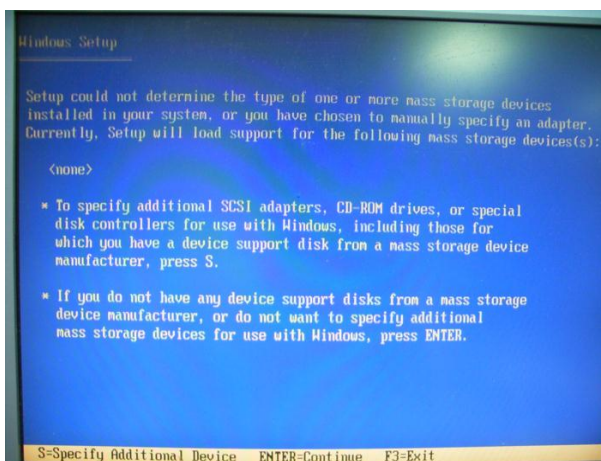
Step 1

In Windows Xp setup PRESS [F6] for JMB installation



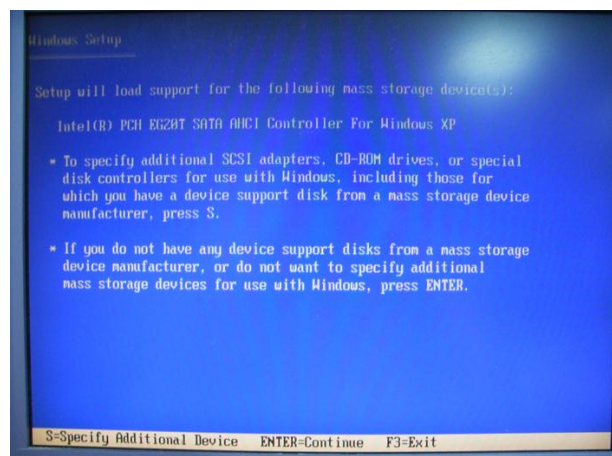
Step 3

Press [Enter] to configure the mass storage you wish to use.



Step 2

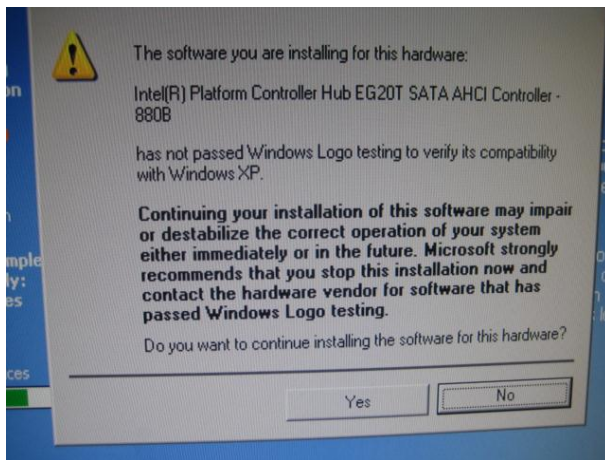
PRESS "S" to configure mass storage and install JMB from your storage device.



Step 4

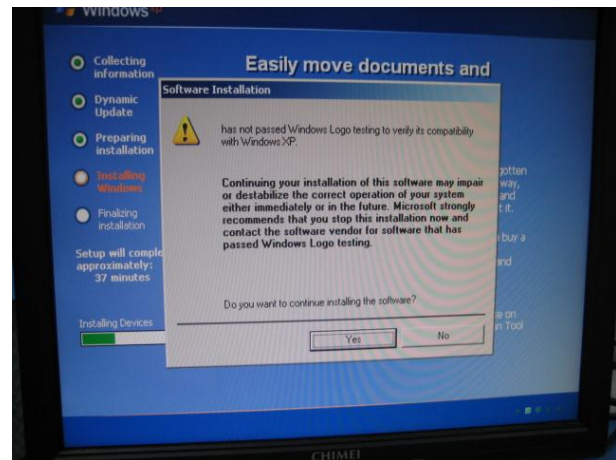
Press [Enter] to continue setup..

4.2 OS Prompts



Step 1

During OS installation, the following window will prompt, PRESS [yes] to continue



Step 2

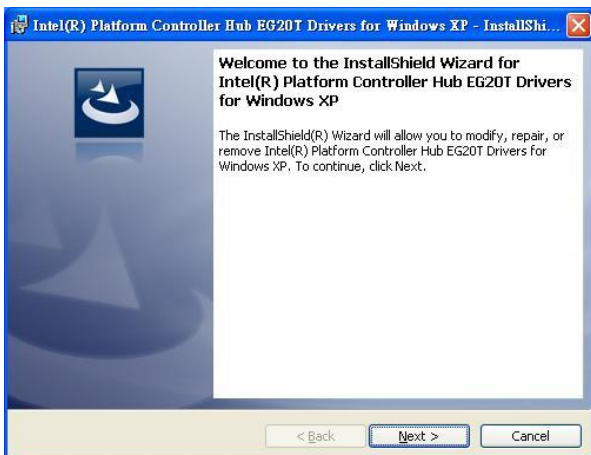
PRESS [yes] to continue

5. Drivers Installation



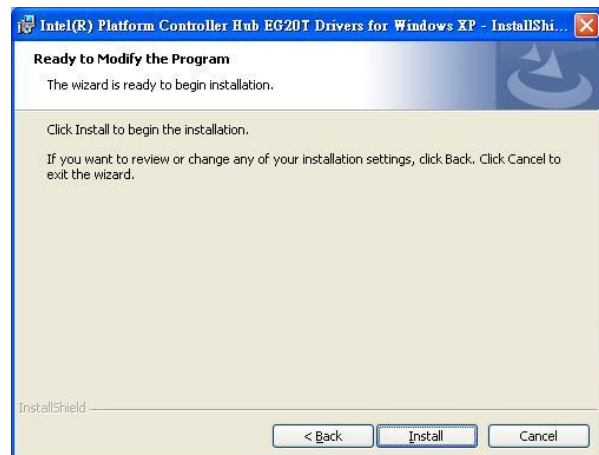
Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

5.1 Southbridge Chipset installation



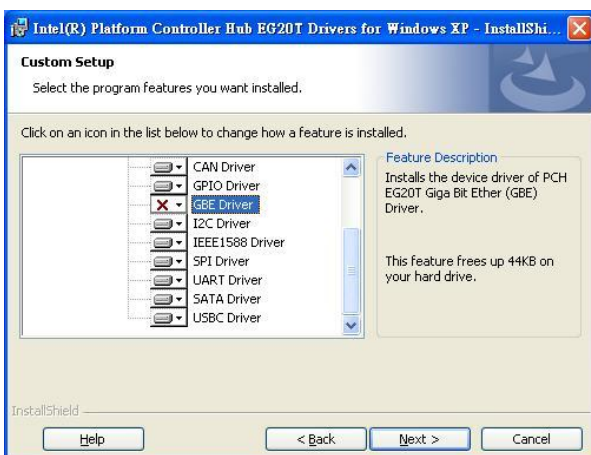
Step 1

In Driver install shield click [NEXT] to begin Setup



Step 3

Click [Install] to begin Installation.



Step 2

Uncheck GBE Driver to avoid Network driver error in Device manager



Step 4

Click [Finish] to complete installation

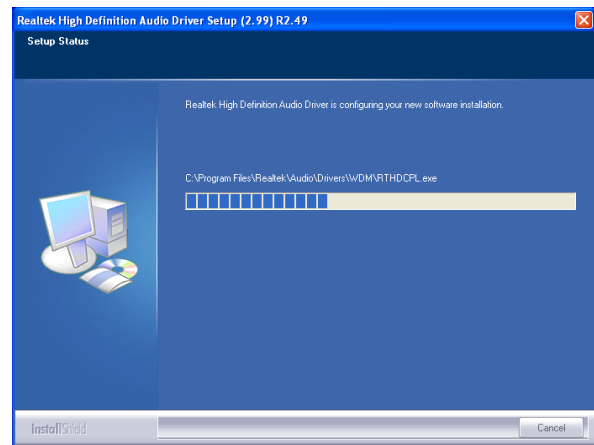
5.2 Install Audio Driver (For Realtek ALC888)

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, or link to **\Driver_Audio\Realtek \ALC888**.

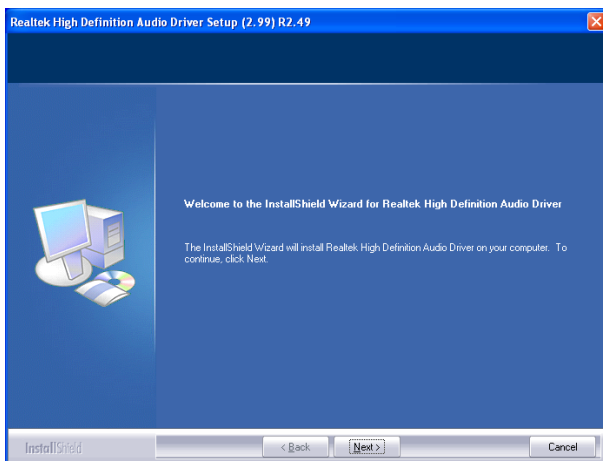


Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.

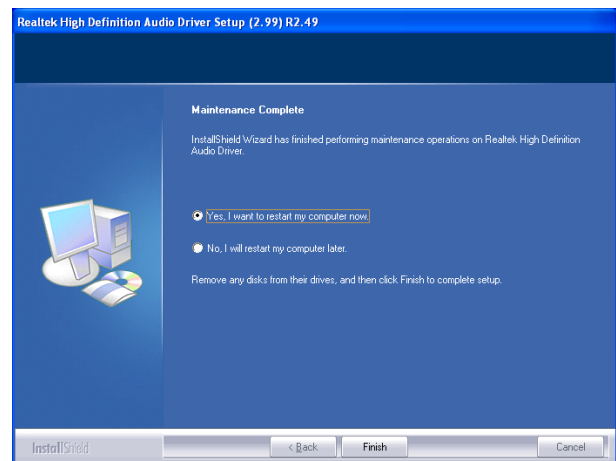
Step 1. Locate 「\Driver_Audio\Intel\ALC888\setup.exe」.



Step 3. Installing....



Step 2. Click **Next**.



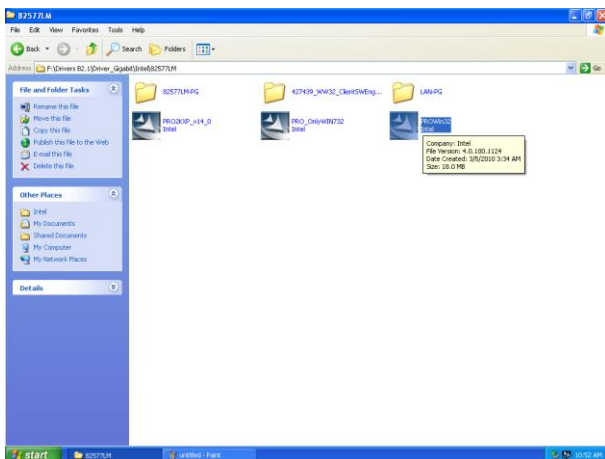
Step 4. Click **Finish** to complete the setup.

5.3 Install Ethernet Driver (For Intel 82574L)

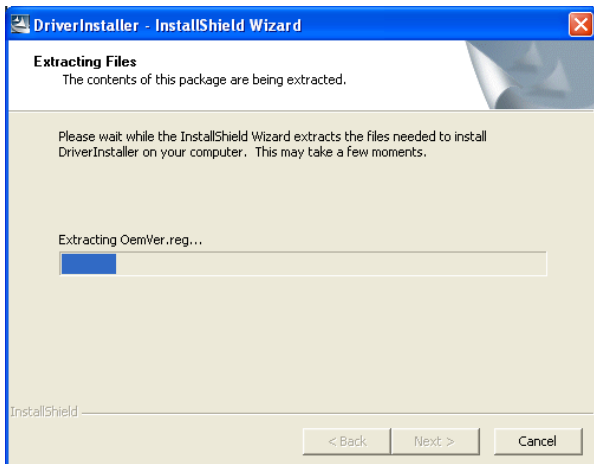
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **D:\Driver_Gigabit\Intel\82574L**



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



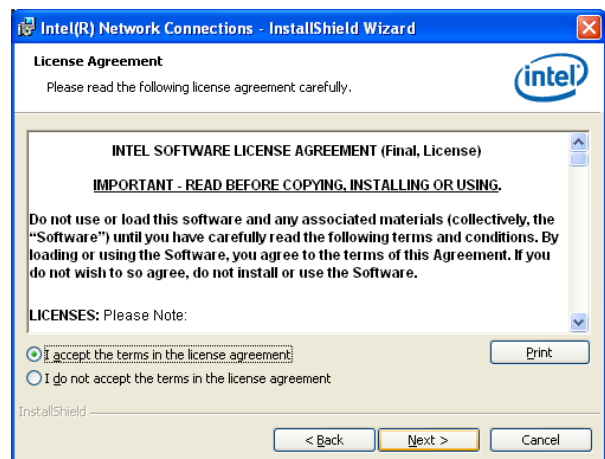
Step 1. Locate 「\Driver_Gigabit\Intel\82574L or 82577LM」 and choose your system OS.



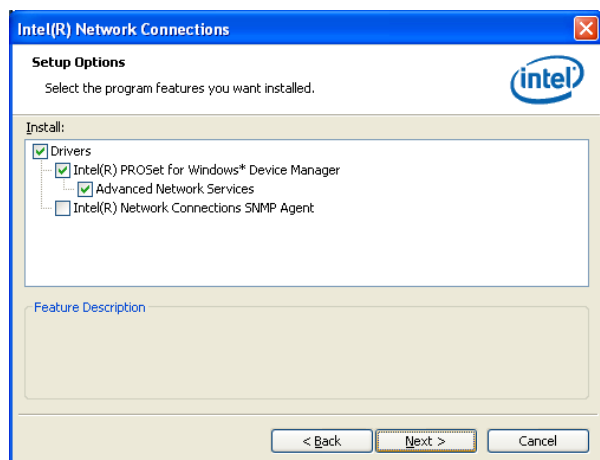
Step 2. Click **Next**.



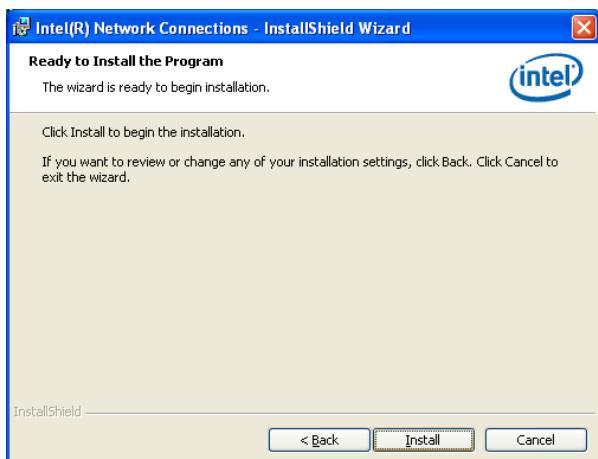
Step 3. Click **Next** to run the installation.



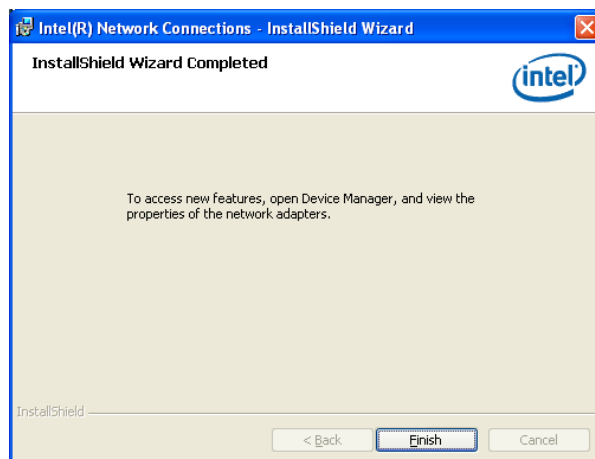
Step 4. Click **Accept** to continue.



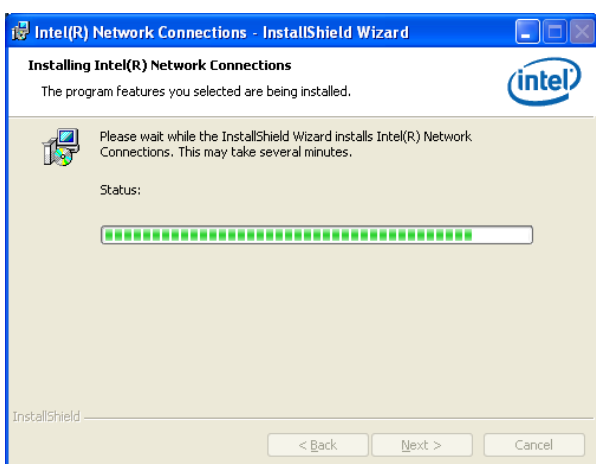
Step 5. Click **Next**.



Step 5. Click **Install** to next step.

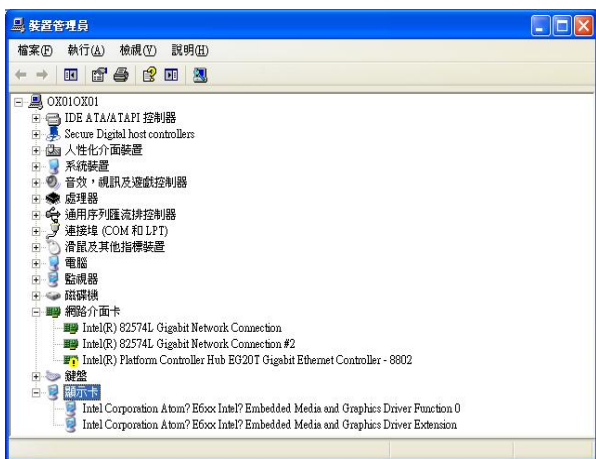


Step 7. Click **Finish** to complete the setup.



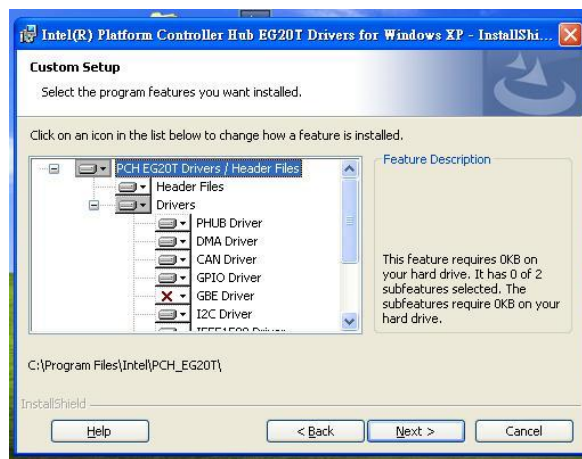
Step 6. Click **Next** to next step.

5.3.1 Ethernet driver error troubleshooting



Step 1

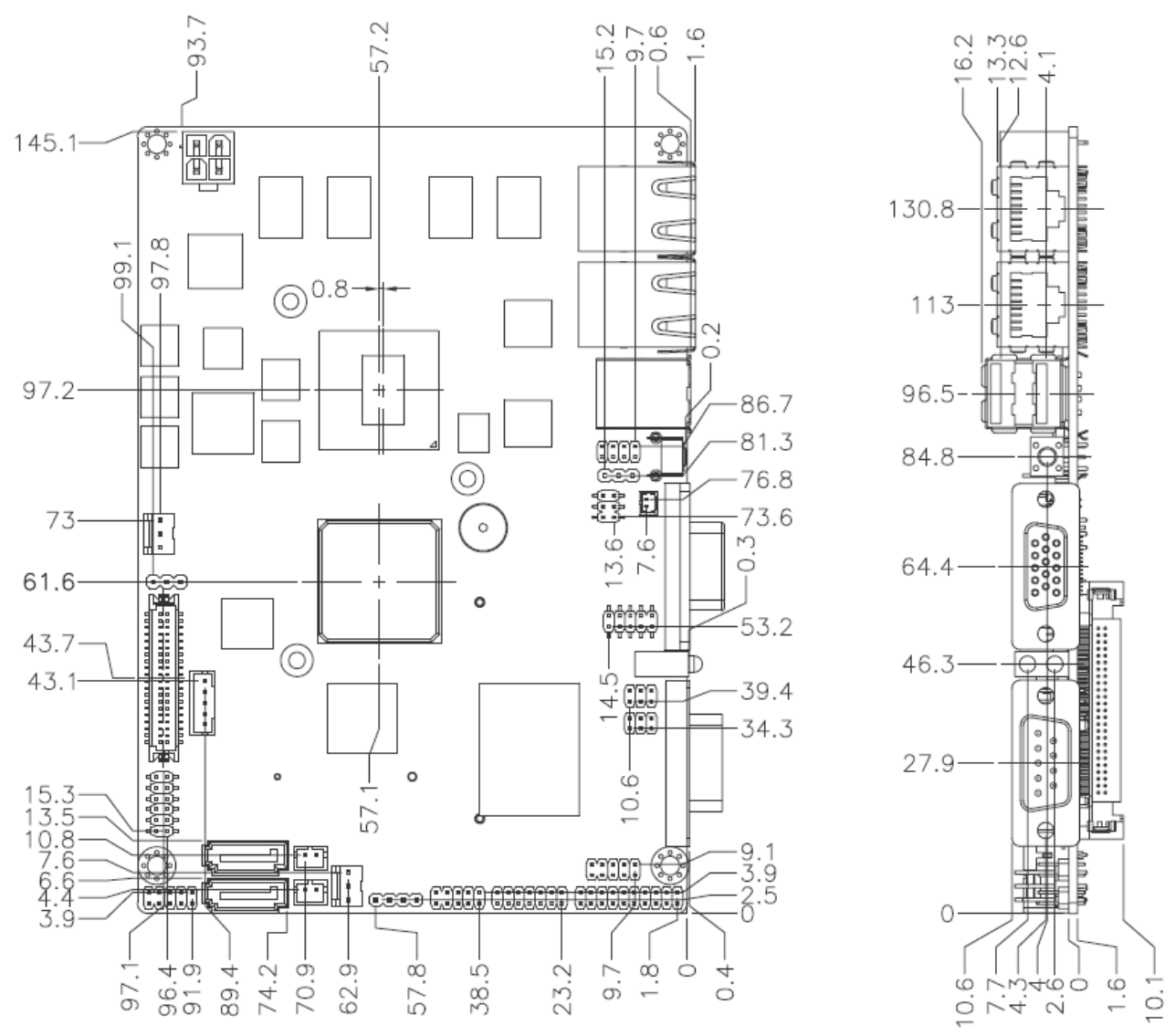
“Intel® Platform Controller” showing error in Device manager.



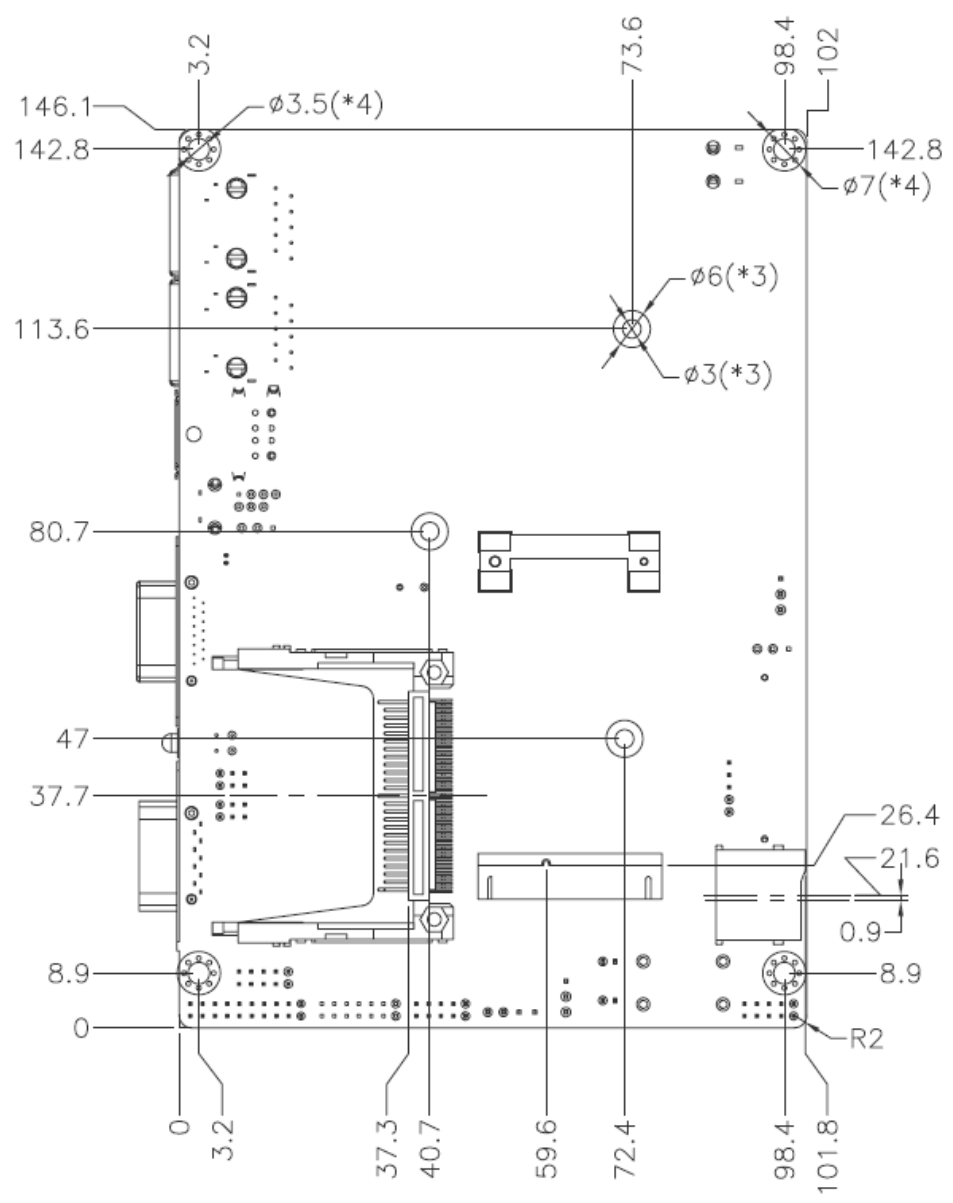
Step 2

Please uncheck GBE in Custom Setup to keep “Intel® Platform Controller Hub EG20T Gigabit Ethernet Controller – 8802” from appearing in Device manager.

6. Mechanical Drawing



Unit: mm



Unit: mm