

# ENX-CDD

**Intel® Atom™ Cedar Trail Nano ITX Motherboard**

**Intel® D2550 or N2800 + NM10 Chipset**

## User's Manual

**3<sup>rd</sup> Ed – 25 January 2013**

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Part No. E2047XCDD02R

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# 1. Getting Started

## 1.1 Safety Precautions

### Warning!



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

### Caution!



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

**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:

- Quick Installation Guide X 1
- Driver/Utility CD X 1
- Serial ATA Signal with Power Cable X 1
- Serial ATA AUX Board X1
- COM Cable X 1
- VGA Cable X1
- Motherboard X 1

## 1.3 Document Amendment History

Revision	Date	By	Comment
1 <sup>st</sup>	October 2012	Avalue	Initial Release
2 <sup>nd</sup>	December 2012	Avalue	Update Mechanical Drawing
3 <sup>rd</sup>	January 2013	Avalue	Update Drivers Installation

### 1.4 Manual Objectives

This manual describes in details Avalue Technology ENX-CDD Single Board.

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

We strongly recommend that you study this manual carefully before attempting to set up ENX-CDD 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.

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

## 1.5 Specifications

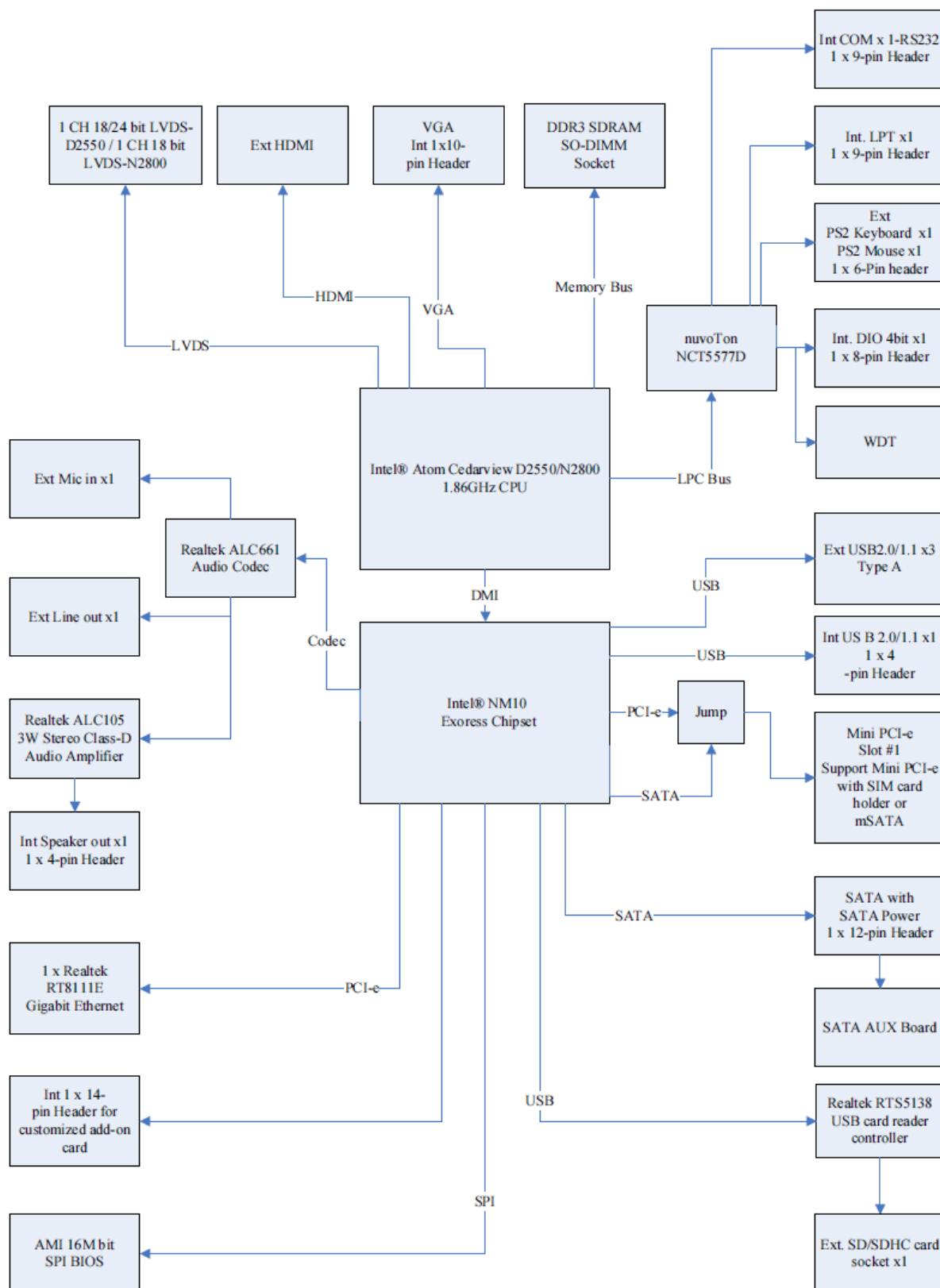
Title	ENX-CDD
	Intel® Atom™ Cedar Trail Nano ITX Motherboard
	Intel® D2550 or N2800 + NM10 Chipset
Features	Nano-ITX
	Onboard Intel® Atom™ processor D2550 /N2800
	IOH: NM10
	One 204-pin DDR3 1066/1333MHZ SO-DIMM socket up to 4GB Max
	1 x VGA
	1 x HDMI
	1 x 18/24 bit single-channel LVDS for D2550 Processor or 1 x 18 bit single-channel LVDS for N2800 Processor
	1 x Realtek RT8111E PCIe Gigabit Ethernet
	1 x Mini PCI-e socket
	*Mini PCI-e and M-SATA SSD switchable through Jumper
Specifications	
System	
CPU	Onboard Intel® Atom™ Processor D2550 (1M Cache, 1.86 GHz) or Onboard Intel® Atom™ Processor N2800 (1M Cache, 1.86 GHz)
BIOS	AMI 16MBit SPI BIOS
System Chipset	Intel® NM10
I/O Chip	Nuvoton NCT5577D
System Memory	One 204-pin DDR3 1066/1333MHZ SO-DIMM socket up to 4GB Max
Watchdog Timer	Reset : 1 to 255 sec/min per step
H/W Status Monitor	Monitoring temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
Expansion	1 x Mini PCI-e socket *Mini PCI-e and m-SATA SSD switchable through Jumper 1 x 14-pin Header for Customized add-on card
I/O	
MIO	1 x 9-pin Header for RS-232 port 1 x 12-pin Header for 1x SATAII (3Gb/s) to SATA AUX board 1 x 10-pin Header for VGA Output 1 x 9-pin Header for LPC for Debug only 1 x 2-pin Header for Reset

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	1 x 5-pin Header for Inverter 1 x CIR for remote control 1 x Power on/off with Power LED button
USB	3 x USB 2.0/1.1 Type A connectors , 1 x 4-pin Header for USB
Parallel Port	NA
PS2 KB/MS	1 x 6-pin Header for 1 x PS2 keyboard / PS2 Mouse
DIO	1 x 8-pin Header for 4-bit General Purpose I/O for DI and DO
<b>Display</b>	
Chipset	Integrated Intel® Graphics Media Accelerator
Resolution	VGA /HDMI Mode: 1920 x 1200 Single-channel 18/24 bit LVDS 1440 x 900 for D2550 Processor Single-channel 18 bit LVDS 1366 x 768 for N2800 Processor
Dual Display	Yes , LVDS+VGA, VGA+HDMI, HDMI+LVDS
<b>Audio</b>	
Audio Codec	Realtek ALC661 HD Audio Decoding controller
Audio Interface	Mic-in , Line out
Audio Amplifier	Realtek ALC105 3W Stereo Class-D Audio Amplifier(1 x 4-pin Header)
<b>Ethernet</b>	
LAN Chip	1 x Realtek RT8111E PCIe Gigabit Ethernet
Ethernet Interface	10 /100 /1000 Base-Tx Gigabit Ethernet
<b>SIM card</b>	
SIM card	1 x SIM Card socket
<b>SD card socket</b>	
	Realtek RTS5138 USB card reader controller support SD/SDHC card
<b>Mechanical &amp; Environmental</b>	
Power Type	12V DC in
Operating Temp.	0 ~ 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)	4.72" x 4.72" (120mm x 120mm)
Weight	0.88lbs (0.4kg)
<b>Others</b>	Ordering Information: ENX-CDD-N2800-A1R or ENX-CDD-D2550-A1R Nano ITX Motherboard Intel® Atom™ CedarView D2550 or N2800 Processor with NM10 Chipset and VGA ,LVDS, HDMI, Line in,Mic in,1GbE, 1 Mini PCIe,1 SATA,1 COM,3 USB, 1 PS2 KB,1 PS2 MS, 1 SD Card socket, 1 SIM card socket ,6 bits GPIO,3W Amplifier,DC in ,w/SATA AUX board and cable,VGA cable x1,COM port cable x1,CD driver

## 1.6 Architecture Overview—Block Diagram

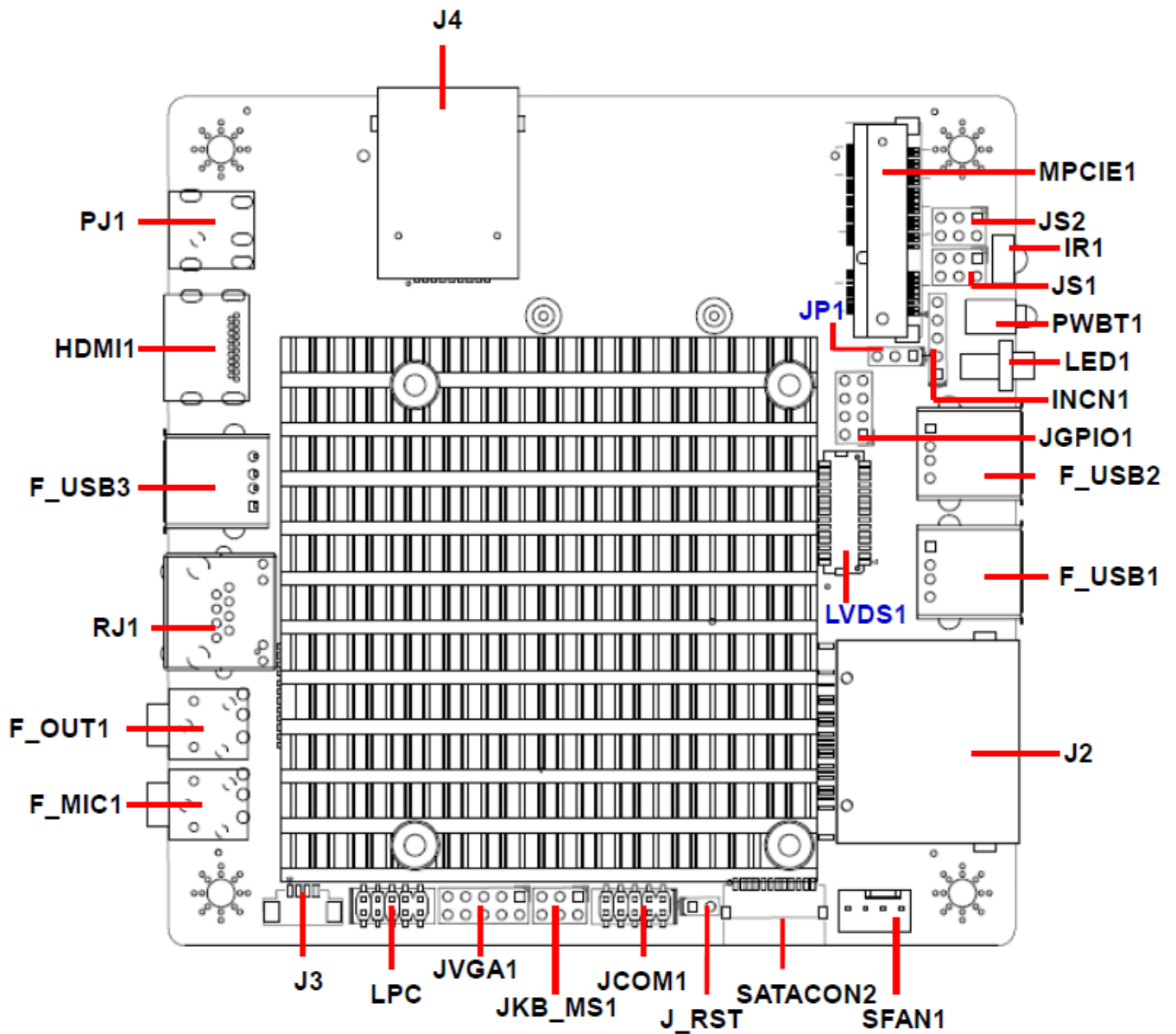
The following block diagram shows the architecture and main components of ENX-CDD.

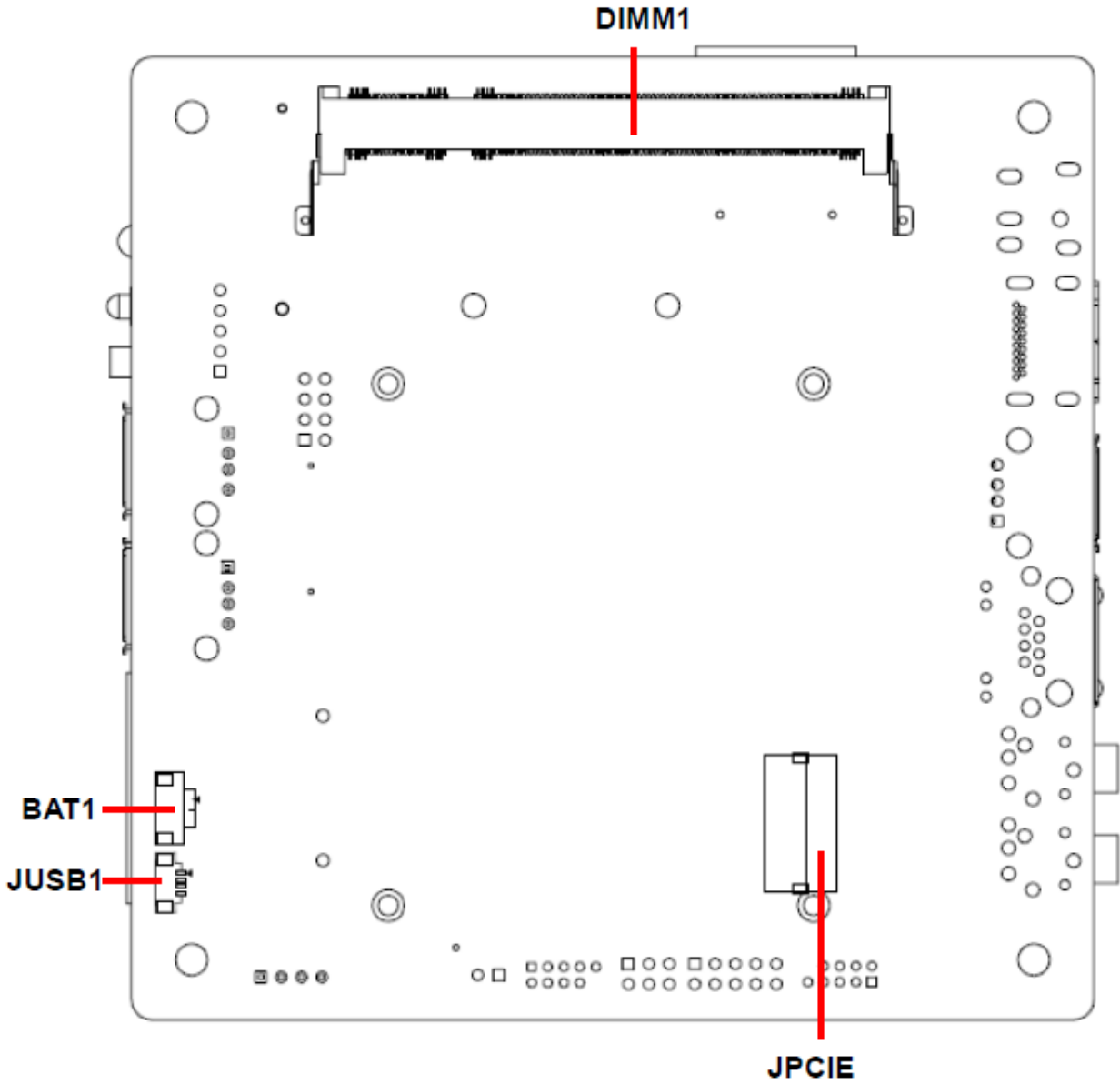


## 2. Hardware Configuration

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## 2.1 Product Overview





### 2.2 Installation Procedure

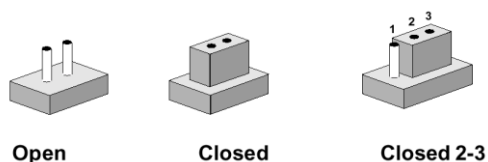
This chapter explains you the instructions of how to setup your system.

1. Turn off the power supply.
2. Insert the DIMM 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 BIOS settings to support flat panel.
4. Connect power supply to the board via the AC/DC Adapter.
5. Turn on the power.
6. Enter the BIOS setup by pressing the delete key during boot up. Use the "Save & Exit \ Restore Defaults" feature.
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.

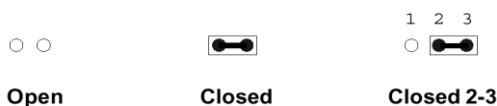
## 2.3 Jumper and Connector List

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
JS1/2	mSATA/Mini PCIe function Jumper	3 x 2 header, pitch 2.54 mm
JP1	LVDS voltage	3 x 1 header, pitch 2.54 mm

### Connectors

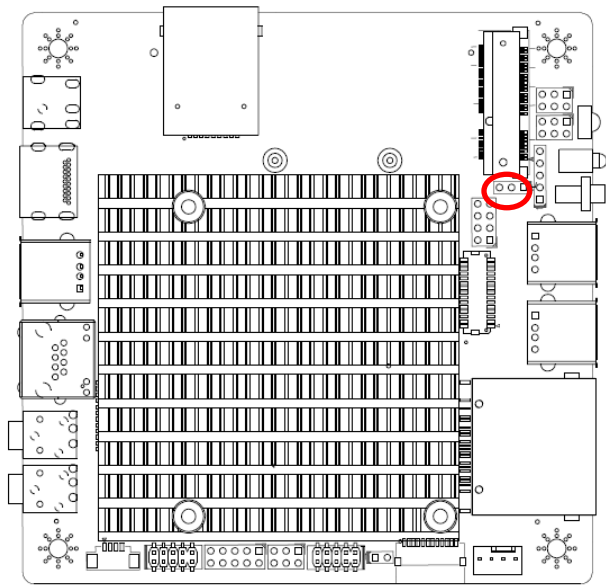
Label	Function	Note
BAT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
JPCIE	PCIE signal selector	14 x 1 wafer, pitch 1.00 mm
J_RST	Reset connector	2 x 1 header, pitch 2.54 mm
HDMI1	HDMI connector	
J2	SD/MS/MMC socket	

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<b>J3</b>	Speaker connector	4 x 1 wafer, pitch 1.25 mm
<b>J4</b>	SIM card holder	
<b>JCOM1</b>	Serial port 1 connector	5 x 2 header, pitch 2.00 mm
<b>PWBT1</b>	Power Button	
<b>JGPIO1</b>	General Purpose I/O	4 x 2 header, pitch 2.54 mm
<b>LPC</b>	Low Pin Count	5 x 2 header, pitch 2.00 mm
<b>LVDS1</b>	LVDS connector	15 x 2 wafer, pitch 1.00 mm
<b>SATACON2</b>	SATA AUX Board	12 x 1 wafer, pitch 1.00 mm
<b>JUSB1</b>	USB connector	4 x 1 wafer, pitch 1.25 mm
<b>F_MIC1</b>	Mic-in	
<b>F_OUT1</b>	Line out	
<b>RJ1</b>	LAN port	
<b>IR1</b>	CIR connector	
<b>LED1</b>	HDD LED	
<b>PJ1</b>	DC-In	
<b>JKB_MS1</b>	Keyboard & mouse connector	3 x 2 wafer, pitch 2.54 mm
<b>F_USB1</b>	USB connector1	
<b>F_USB2</b>	USB connector2	
<b>F_USB3</b>	USB connector3	
<b>INCN1</b>	LCD Inverter connector	5 x 1 header, pitch 2.54 mm
<b>SFAN1</b>	System Fan connector	4 x 1 wafer, pitch 2.54 mm
<b>JVGA1</b>	VGA connector	5 x 2 header, pitch 2.54 mm
<b>MPCIE1</b>	Mini-PCI-e socket	
<b>DIMM1</b>	DDR3 SODIMM socket	

2.4 Setting Jumpers & Connectors

2.4.1 LVDS voltage (JP1)

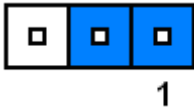


\* Default

VCC5\*

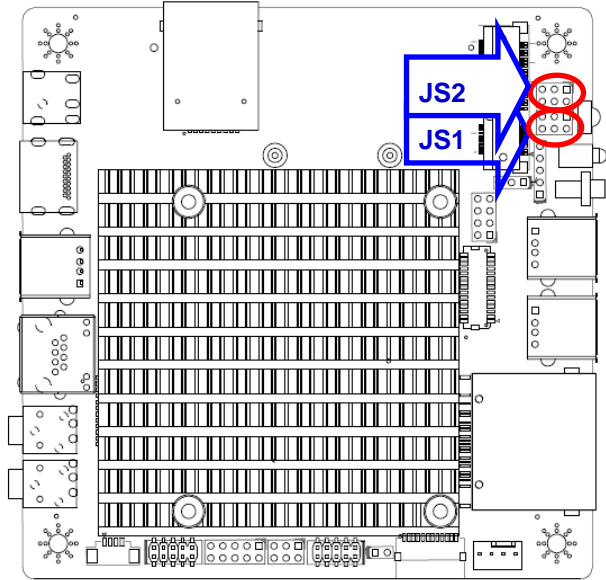


VCC3



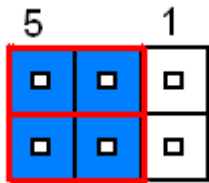
Pin	Define
1-2	VCC3
2-3	VCC5

2.4.2 mSATA/Mini PCIe function Jumper (JS1/JS2)

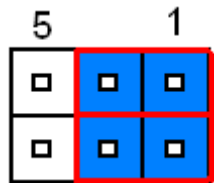


\* Default

MINIPCI\*

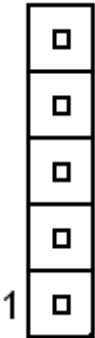
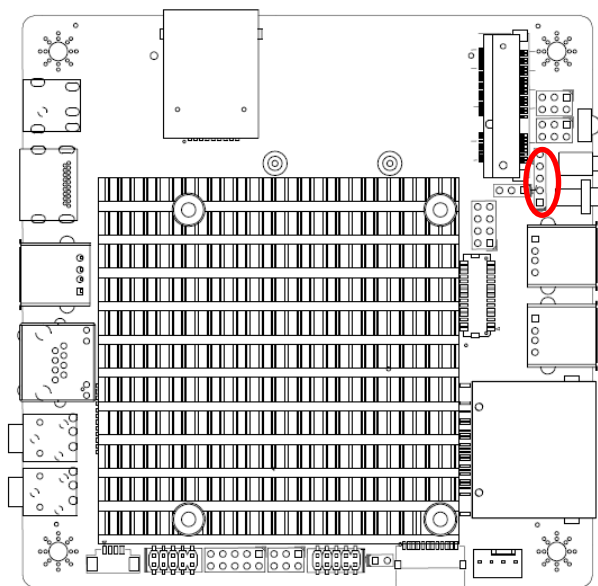


M-SATA



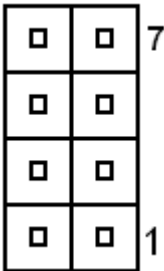
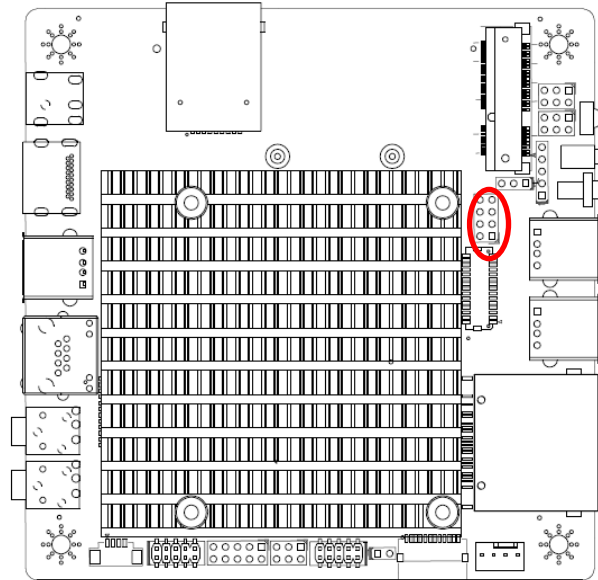
Pin	Pin	Define
1-3	2-4	M-SATA
3-5	4-6	MINIPCI

2.4.3 LCD Inverter connector (INCN1)



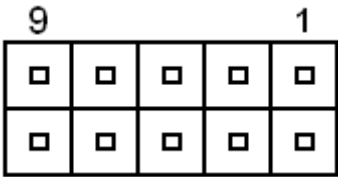
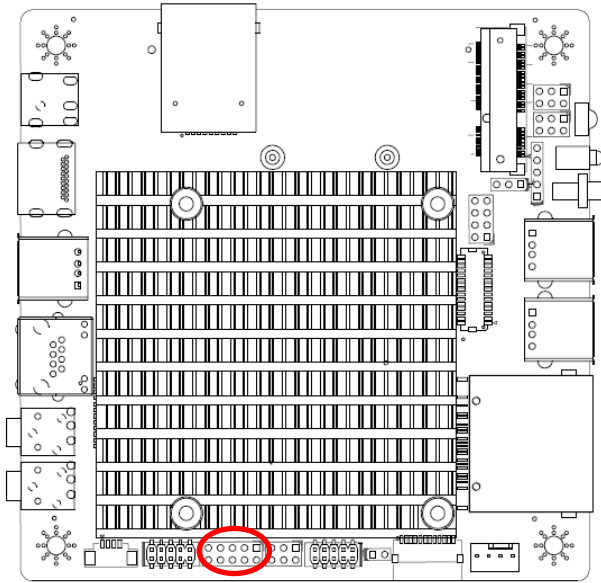
Signal	PIN
5V	5
PWM	4
BKL_EN	3
GND	2
12V	1

2.4.4 General Purpose I/O (JGPIO1)



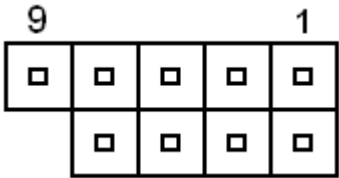
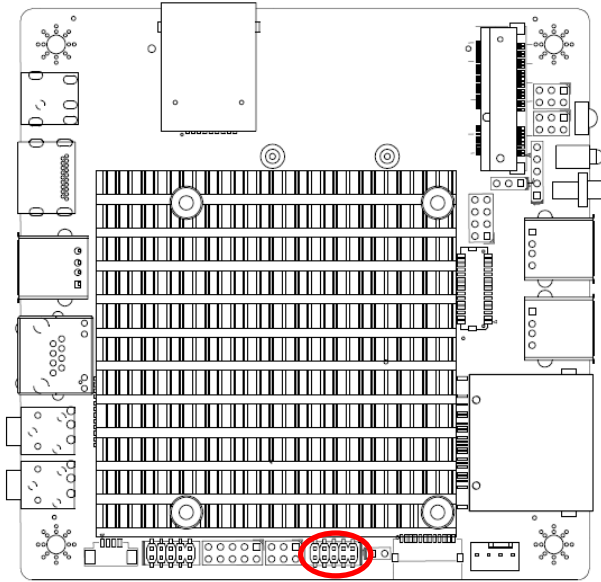
Signal	PIN	PIN	Signal
GND	8	7	GND
GPIO	6	5	GPIO
GPIO	4	3	GPIO
3.3V	2	1	5V

2.4.5 VGA connector (JVGA1)



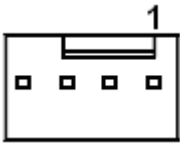
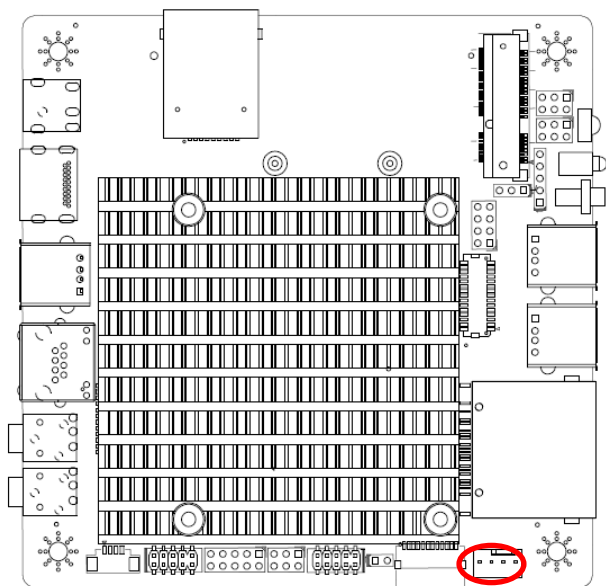
Signal	PIN	PIN	Signal
GND	1	2	RED
GND	3	4	GREEN
GND	5	6	BLUE
HSYNC	7	8	VSYNC
DDC_DATA	9	10	DDC_CLK

2.4.6 Serial port 1 connector (JCOM1)



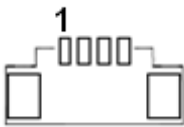
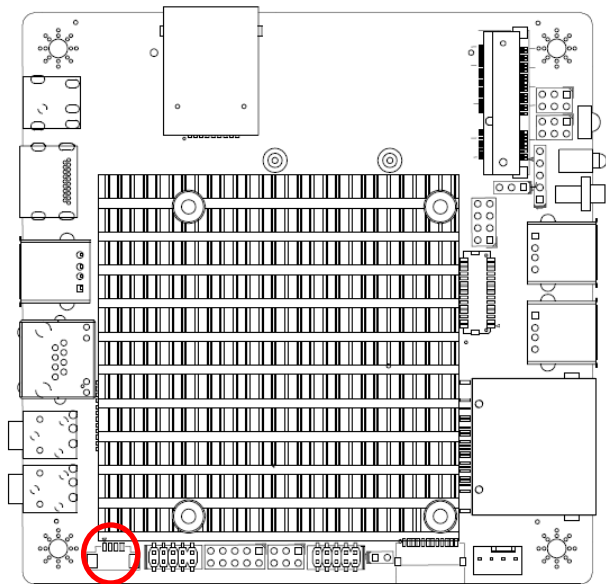
Signal	PIN	PIN	Signal
DCD	1	2	RXD
TXD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9		

2.4.7 System Fan connector (SFAN1)



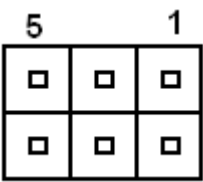
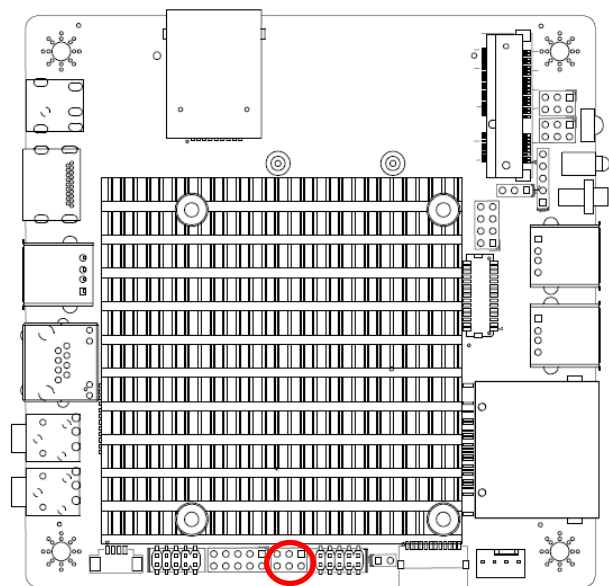
Signal	PIN
Ground	1
+12V	2
RPM	3
Control	4

2.4.8 Speaker connector (J3)



Signal	PIN
INTSPL+	1
INTSPL-	2
INTSPR-	3
INTSPR+	4

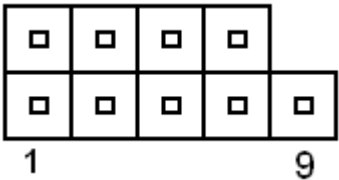
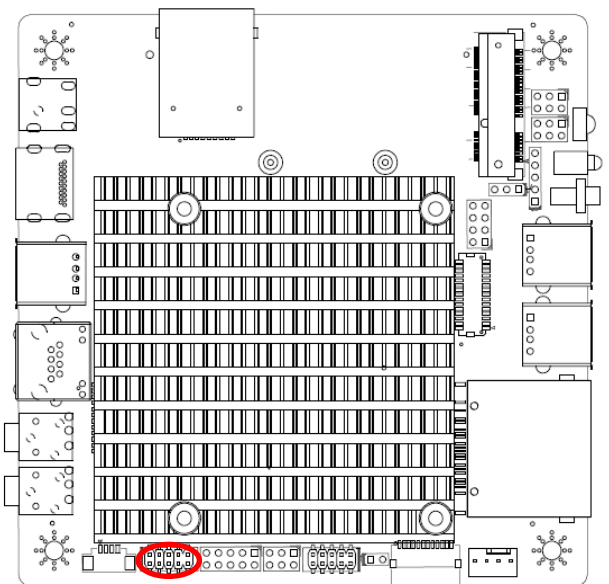
2.4.9 Keyboard & mouse connector (JKB\_MS1)



Signal	PIN	PIN	Signal
MS_CLK	1	2	MS_DATA
KB_CLK	3	4	KB_DATA
VCC	5	6	GND

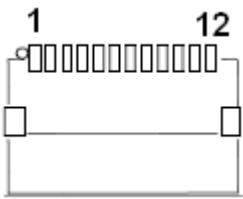
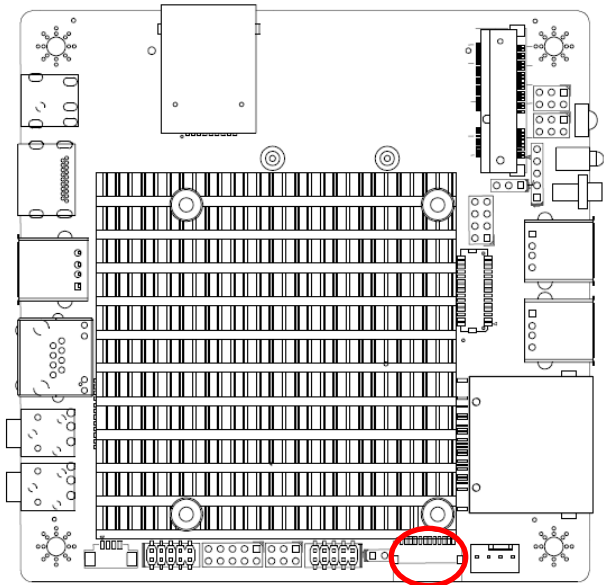
**Note:**  
The KB/Mouse cable is not included.

2.4.10 Low Pin Count (LPC)



Signal	PIN	PIN	Signal
LPC_DATA3	1	2	+3V
LPC_DATA2	3	4	PLC_RESET
LPC_DATA1	5	6	FPAME
LPC_DATA0	7	8	CLK_33M
GND	9		

2.4.11 SATA AUX Board (SATACON2)

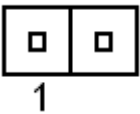
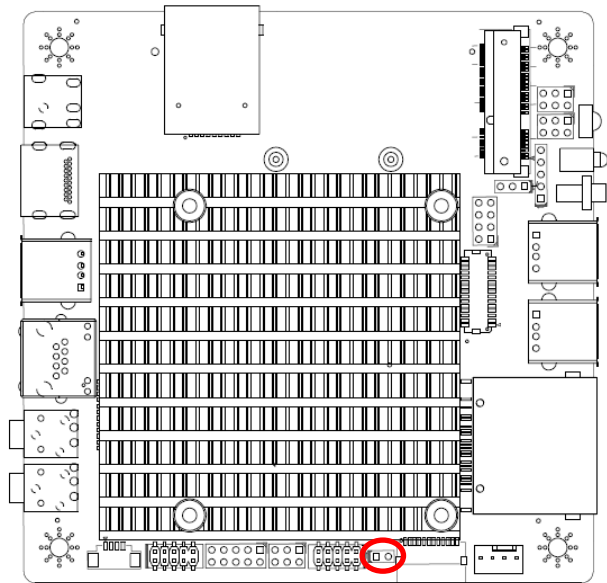


Signal	PIN
NC	1
+5V	2
+5V	3
+5V	4
GND	5
GND	6
RXP	7
RXN	8
GND	9
TXN	10
TXP	11
GND	12

**Note:**

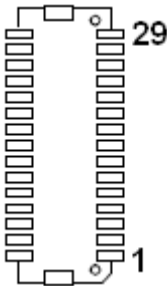
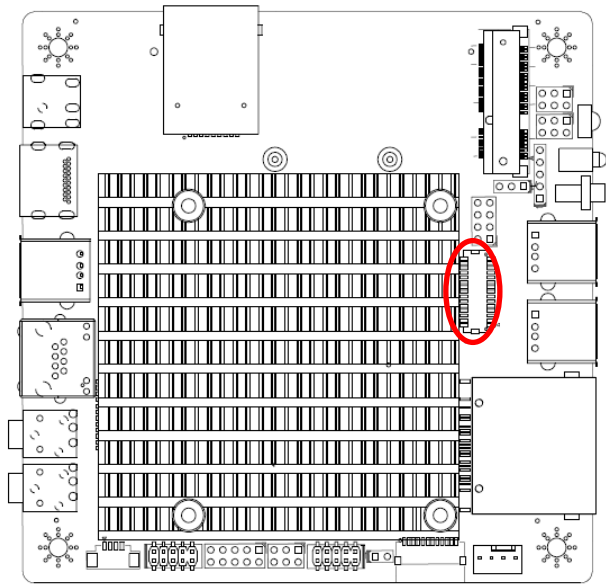
To SATA AUX board.

2.4.12 Reset connector (J\_RST)



Signal	PIN
Reset	1
GND	2

2.4.13 LVDS connector (LVDS1)

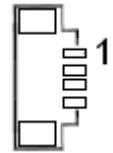
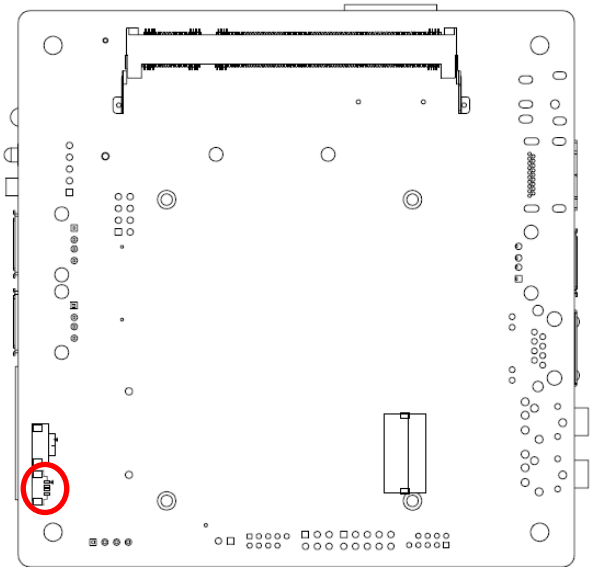


**Note:**

Recommend connector.  
On board LVDS connector: CSI-1171-30.  
Matting connector:KB901-B30H.

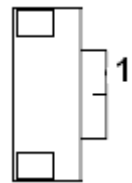
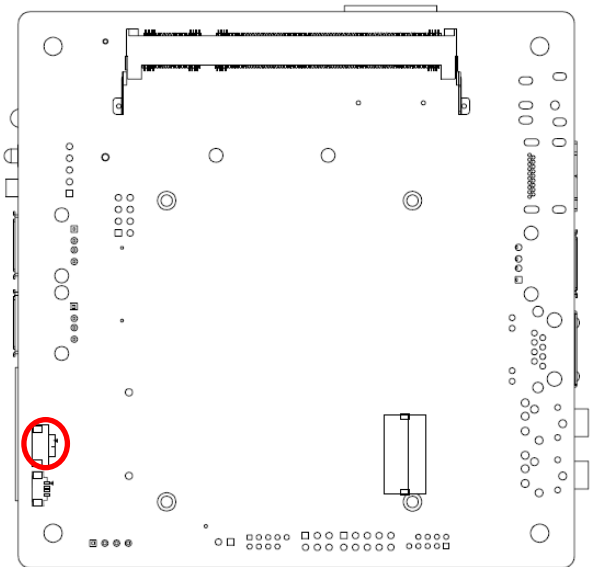
Signal	PIN	PIN	Signal
VDD	30	29	VDD
VDD	28	27	VDD
DDC_CLK	26	25	GND
DDC_DATA	24	23	DATA3-
GND	22	21	DATA3+
CLKN	20	19	GND
CLKP	18	17	DATA2-
GND	16	15	DATA2+
GND	14	13	GND
GND	12	11	GND
DATA1-	10	9	DATA0-
DATA1+	8	7	DATA0+
GND	6	5	GND
GND	4	3	PWM
GND	2	1	GND

2.4.14 USB connector (JUSB1)



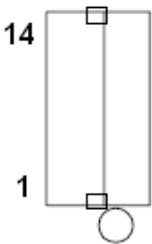
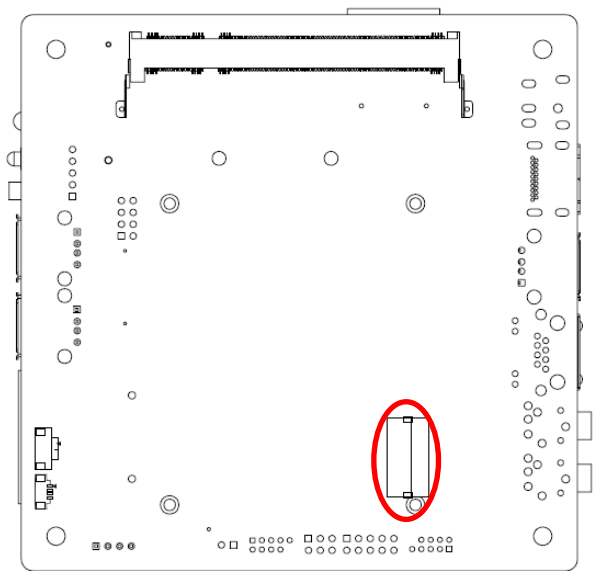
Signal	PIN
+5VSB	1
DATAN	2
DATAP	3
GND	4

2.4.15 Battery connector (BAT1)



Signal	PIN
BAT	1
GND	2

2.4.16 PCIe signal selector (J\_PCIE)



Signal	PIN
RXN	14
RXP	13
GND	12
TXN	11
TXP	10
GND	9
CLKP	8
CLKN	7
RESET	6
WAKE	5
+5VSB	4
+5VSB	3
GND	2
+3.3V	1

**Note:**

For Customized add-on card, the expansion card is not included.

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

While the BIOS is in control, the Setup program can be activated in one of two ways:

By pressing <Del> 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, F11 to popup menu**

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 DEL to enter setup, F11 to popup menu**

### 3.3 Using Setup

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

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to the pervious page or Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values
F9 key	Optimized Defaults
F10 key	Save and Exit

- **Navigating Through The Menu Bar**

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



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

- **To Display a Sub Menu**

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

### 3.4 Getting Help

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

### 3.5 In Case of Problems

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

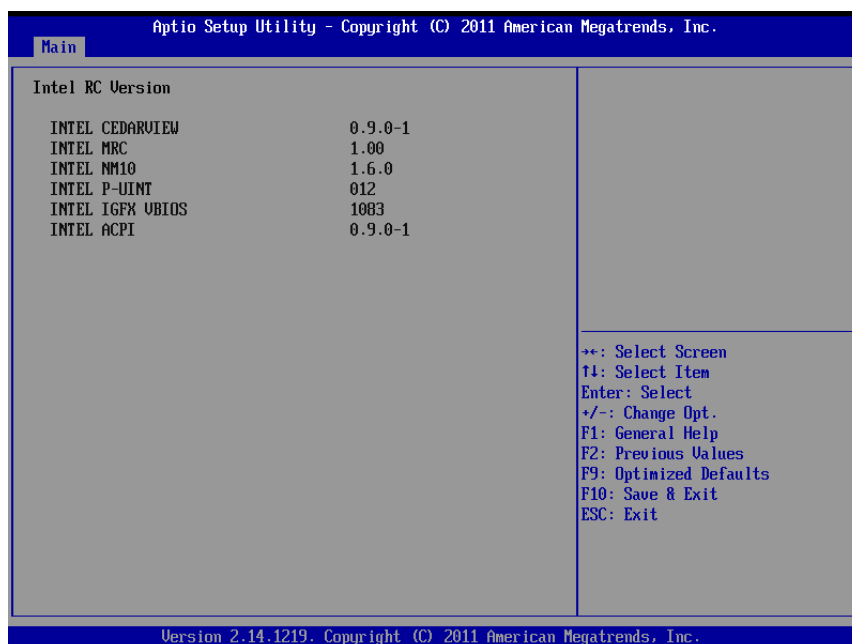
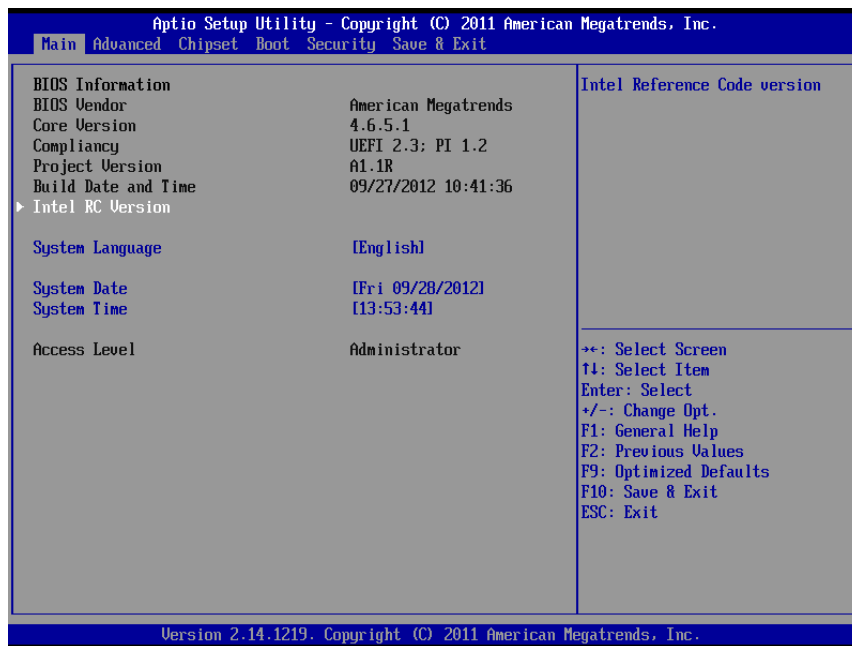
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your systems manufacturer to provide the absolute maximum performance and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

Intel Reference Code version.

### 3.6.1.2 System Language

Use this option to select system language

### 3.6.1.3 System Date

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

### 3.6.1.4 System Time

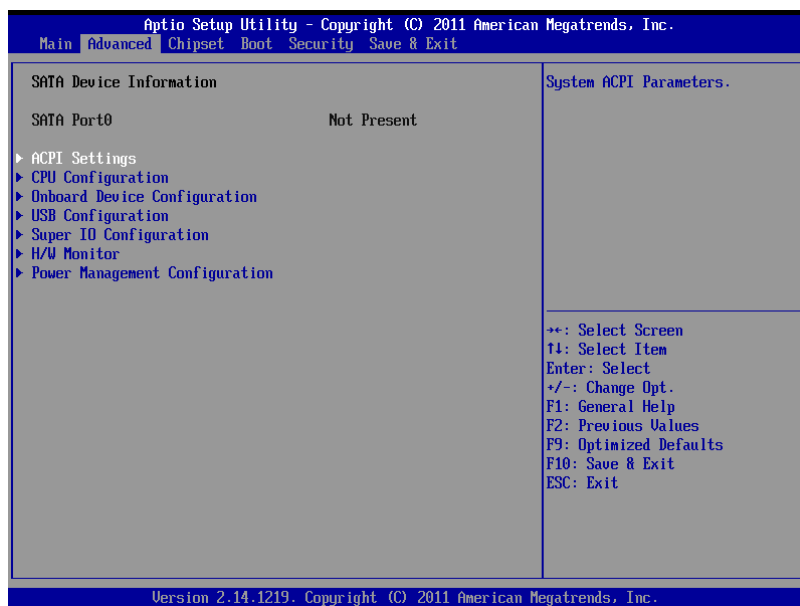
Use the system time option to set the system time. Manually enter the hours, minutes and seconds.



**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](http://www.avalue.com.tw)) to download the latest product and BIOS information.

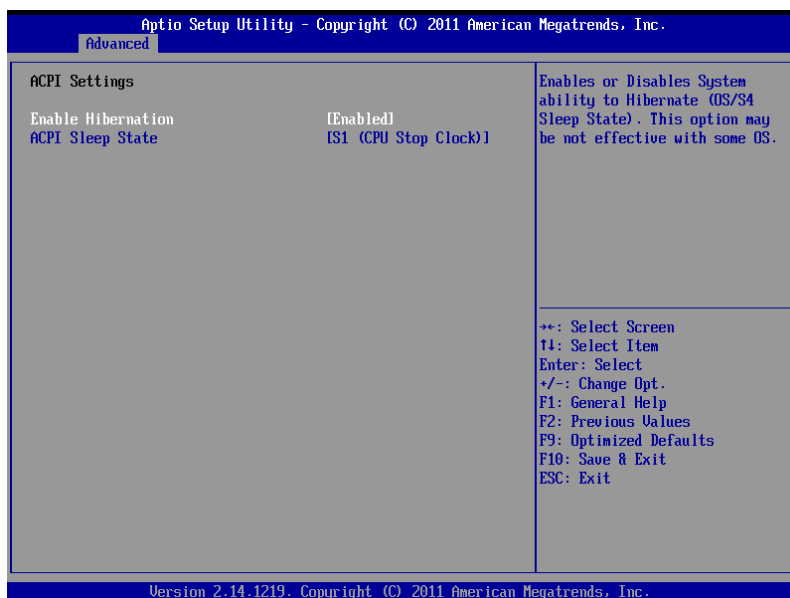
## 3.6.2 Advanced BIOS settings

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



### 3.6.2.1 ACPI Settings

You can use this item to set up ACPI Configuration.



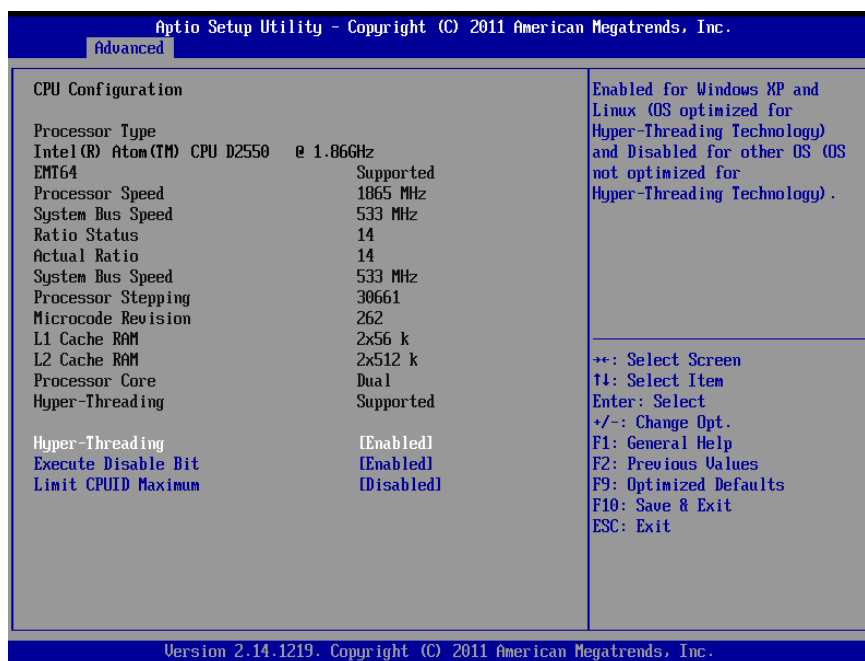
Item	Options	Description
Enable Hibernation	Disabled, Enabled <b>[Default]</b>	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

## ENX-CDD User's Manual

<b>ACPI Sleep State</b>	S1 (CPU Stop Clock) <b>[Default]</b> S3 (Suspend to RAM)	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
-------------------------	---	---

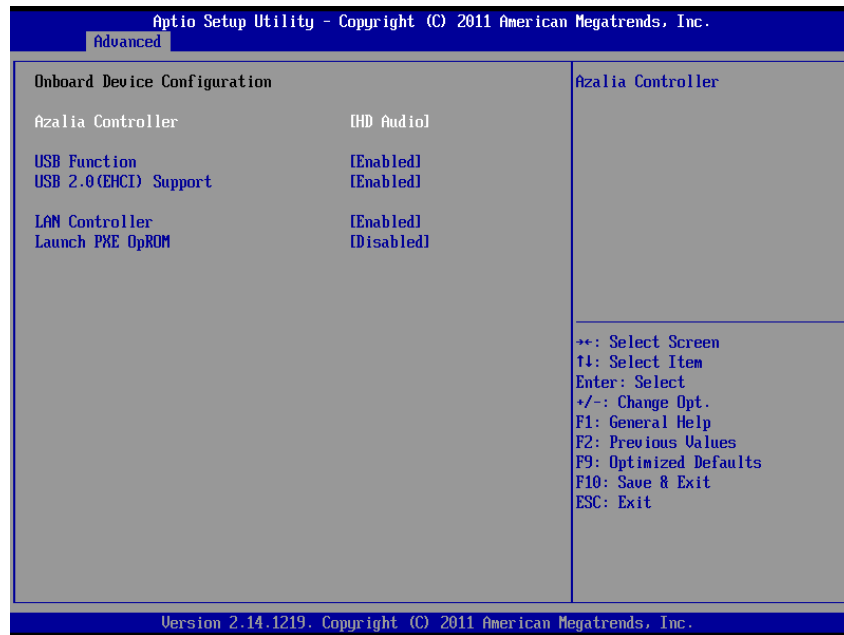
### 3.6.2.2 CPU Configuration

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



Item	Options	Description
<b>Hyper-Threading</b>	Disabled Enabled <b>[Default]</b> ,	Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
<b>Execute Disable Bit</b>	Disabled, Enabled <b>[Default]</b> ,	XD can prevent certain classed 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.
<b>Limit CPUID Maximum</b>	Disabled <b>[Default]</b> , Enabled	Disabled for Windows XP

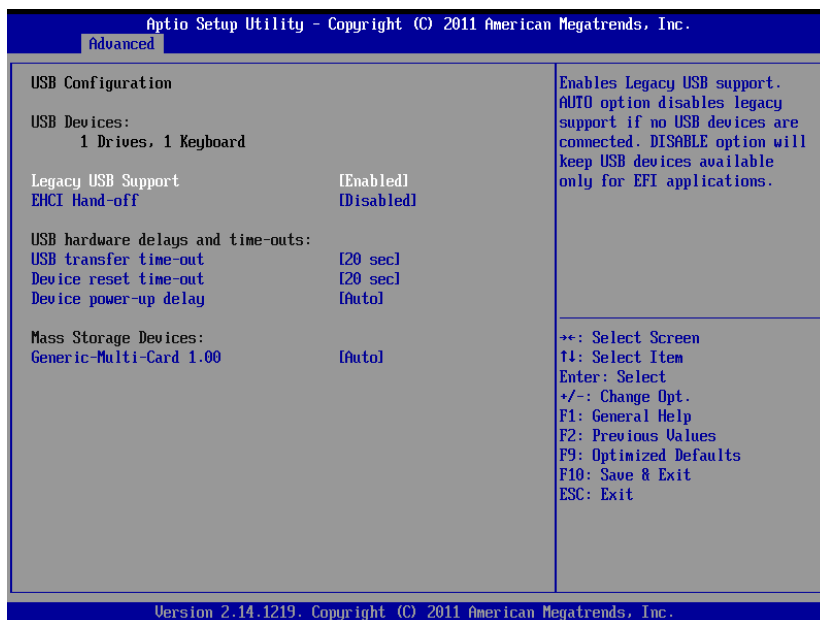
## 3.6.2.3 Onboard Device Configuration



Item	Options	Description
<b>Azalia Controller</b>	HD Audio[ <b>Default</b> ] Disabled	Azalia Controller.
<b>USB Function</b>	Enabled[ <b>Default</b> ] Disabled	Enable/Disable USB Function.
<b>USB 2.0(EHCI) Support</b>	Enabled[ <b>Default</b> ] Disabled	Enable or Disable USB 2.0(EHCI) Support.
<b>LAN Controller</b>	Enabled[ <b>Default</b> ] Disabled	Enable or Disable OnChip NIC Controller.
<b>Launch PXE OpROM</b>	Enabled Disabled[ <b>Default</b> ]	Enable or Disable Boot Option for Legacy Network Devices.

## 3.6.2.4 USB Configuration

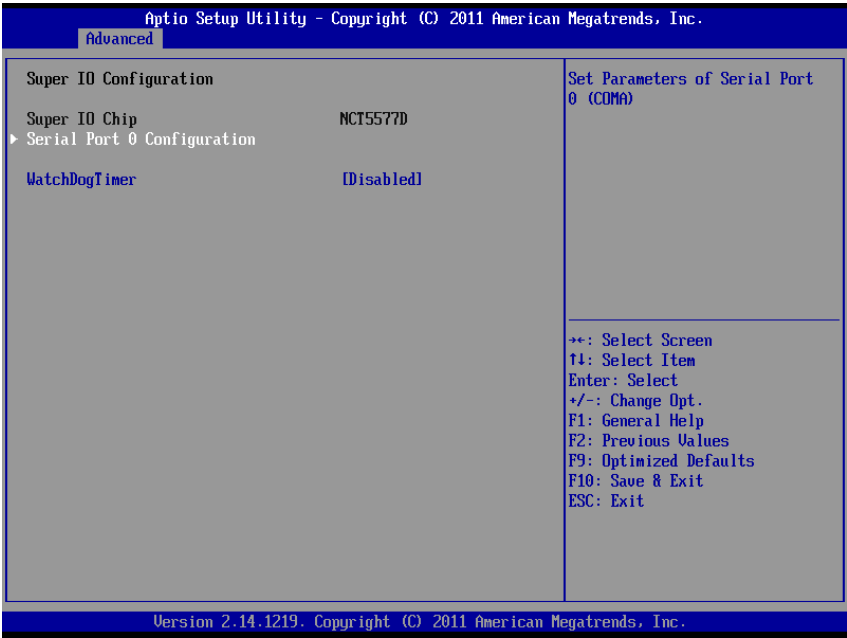
The USB configuration menu is used to read USB configuration information and configure USB.



Item	Options	Description
<b>Legacy USB Support</b>	Enabled[ <b>Default</b> ] Disabled Auto	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
<b>EHCI Hand-Off</b>	Enabled Disabled[ <b>Default</b> ]	This is a workaround for OSES without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
<b>USB transfer time-out</b>	1sec / 5sec 10sec / 20sec[ <b>Default</b> ]	The time-out value for Control, Bulk, and Interrupt transfers.
<b>Device reset time-out</b>	10sec / 20sec[ <b>Default</b> ] 30sec / 40sec	USB mass storage device Start Unit command time-out.
<b>Device power-up delay</b>	Auto[ <b>Default</b> ] 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.

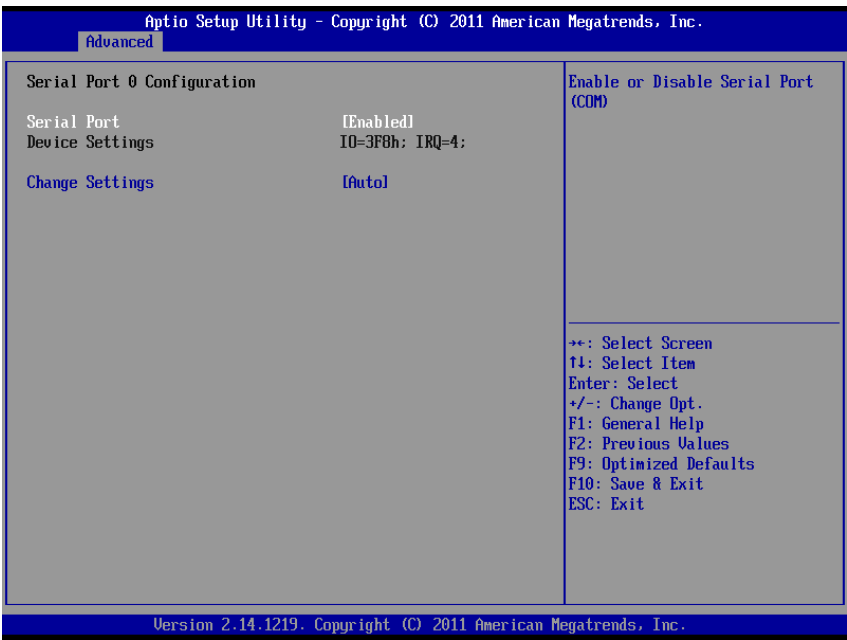
3.6.2.5 Super IO Configuration

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



Item	Options	Description
Serial Port 0 Configuration	Set Parameters of Serial Port0 (COMA).	
WatchDogTimer	Enabled Disabled[Default]	WatchDogTimer Setting.

3.6.2.5.1 Serial Port 0 Configuration



## ENX-CDD User's Manual

Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9.10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9.10,11,12	Select an optimal setting for Super IO device.

### 3.6.2.6 W83627UHG HW Monitor

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

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
Pc Health Status		
System Temperature	:	+37°C
CPU Temperature	:	+35°C
CPU Fan Speed	:	5257 RPM
VCCORE	:	+1.200 V
VCCDDR	:	+1.520 V
AVCC	:	+3.360 V
3VCC	:	+3.360 V
USB3	:	+3.344 V
VBAT	:	+3.280 V
++: Select Screen F4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit		
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.		

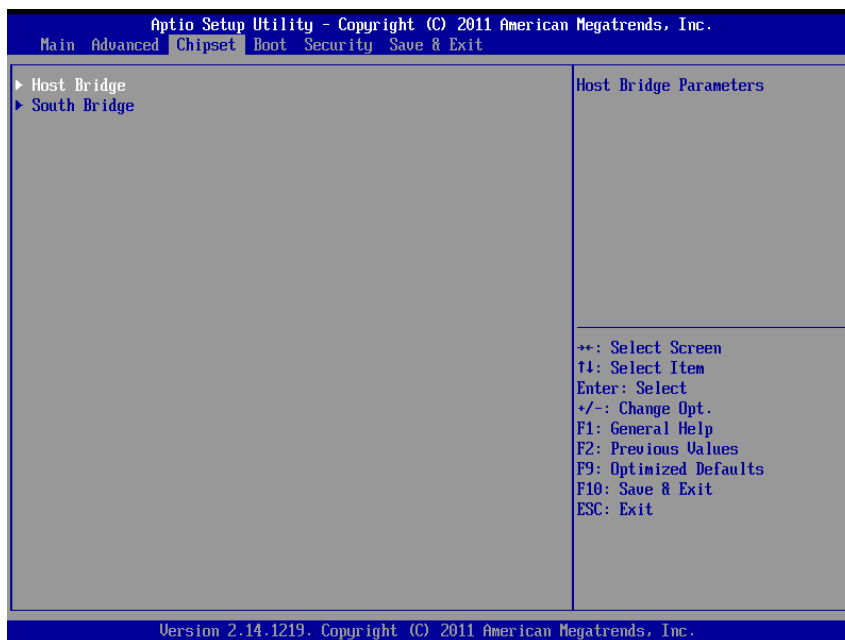
### 3.6.2.7 Power Management Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
Power Management Configuration		
PS2 KB/MS Wakeup Function	:	[Disabled]
PS2 Keyboard PowerOn	:	[Disabled]
USB Wakeup Function	:	[Disabled]
LAN Wakeup Function	:	[Disabled]
Restore AC Power Loss	:	[Last State]
Wake system with Fixed Time	:	[Enabled]
Wake up Day	:	0
Wake up hour	:	0
Wake up minute	:	0
Wake up second	:	0
Wakeup Syetem from S1/S3 by PS2 KB and MS		
++: Select Screen F4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit		
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.		

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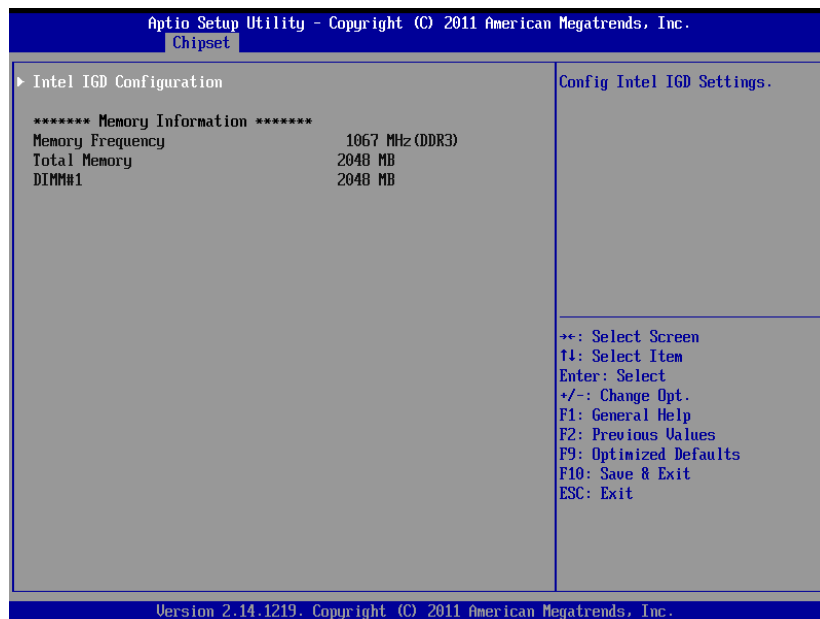
Item	Options	Description
<b>PS2 KB/MS Wakeup Function</b>	Disabled[Default] Enabled	Wakeup System from S1/S3 by PS2 KB and MS.
<b>PS2 KeyBoard PowerOn</b>	Disabled[Default] Enabled	Power On System by PS2 KB.
<b>USB Wakeup Function</b>	Disabled Enabled[Default]	Wakeup System from S1/S3 by USB KB and MS.
<b>LAN Wakeup Function</b>	Disabled Enabled[Default]	Wakeup System from S3/S5 by LAN.
<b>Restore AC Power Loss</b>	Power Off Power On Last State[Default]	Select AC power state when power is re-applied after a power failure.
<b>Wake system with Fixed Time</b>	Disabled[Default] Enabled	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified.
<b>Wake up Day</b>	0-31	Select 0-31 Note: Enter 0 for everyday.
<b>Wake up hour</b>	0-23	Select 0-23 For example enter 3 for 3am and 15 for 3pm.
<b>Wake up minute</b>	0-59	
<b>Wake up second</b>	0-59	

### 3.6.3 Chipset

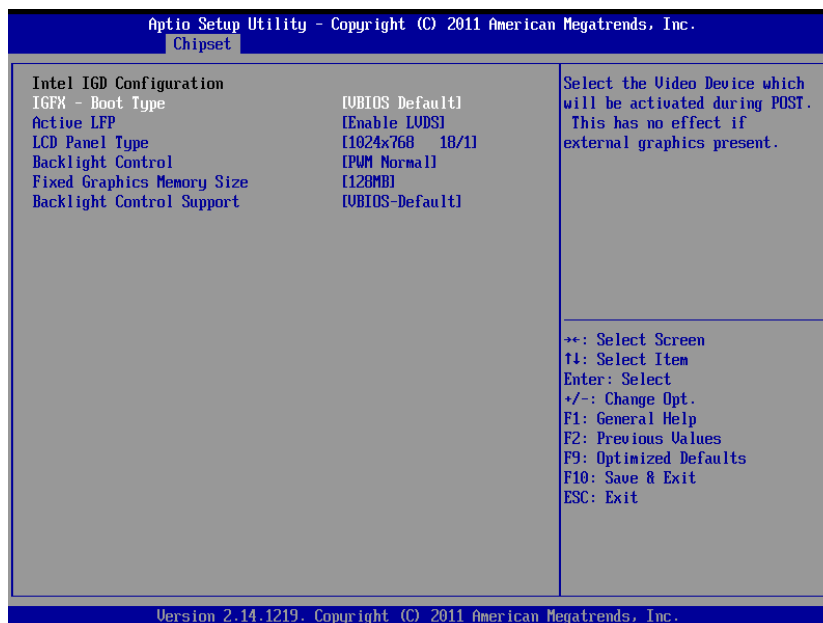


Item	Description
<b>Host Bridge</b>	Host Bridge Parameters.
<b>South Bridge</b>	South Bridge Parameters.

## 3.6.3.1 Host bridge



### 3.6.3.1.1 Intel IGD Configuration

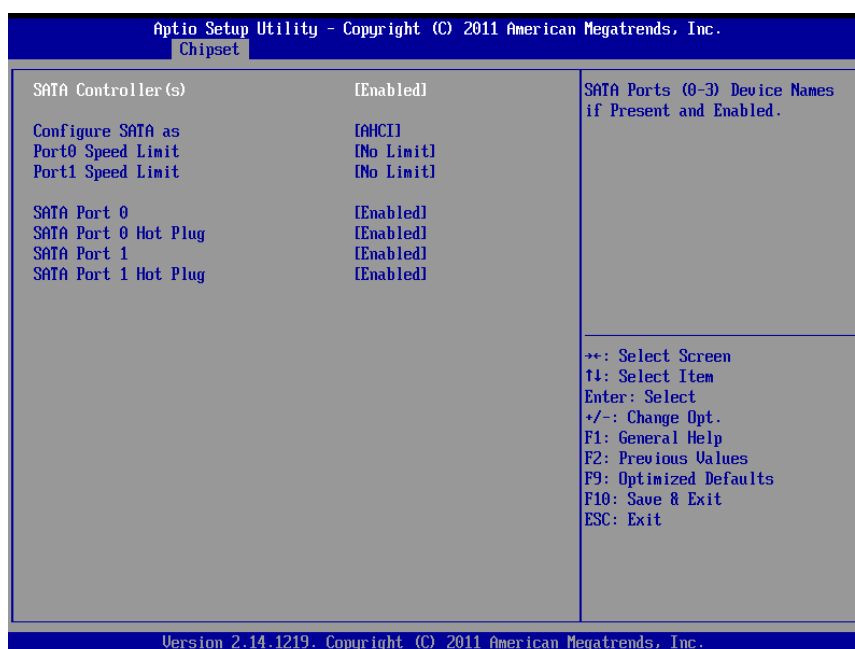


Item	Option	Description
IGFX – Boot Type	VBIOS Default[Default]	Select the Video Device which will be activated during POST. This has no effect if external graphics present.
	CRT	
	LFP	
	EFP	
	CRT+LFP	
	CRT+EFP	
Active LFP	LFP+EFP	
	Disabled	Enable or Disable LVDS.
	Enable LVDS[Default]	

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<b>LCD Panel Type</b>	VBIOS Default 640x480 18/1 800x600 18/1 1024x768 18/1 <b>[Default]</b> 1024x768 24/1 1366x768 24/1 1280x800 18/1 1024x600 18/1	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.
<b>Backlight Control</b>	PWM Inverted PWM Normal <b>[Default]</b>	Back Light Control Setting.
<b>Fixed Graphics Memory Size</b>	128 MB <b>[Default]</b> 256 MB	Configure Fixed Graphics Memory Size.
<b>Backlight Control Support</b>	VBIOS-Default <b>[Default]</b> BLC&BIA Disabled BLC Enabled	Backlight Control Configuration.

### 3.6.3.2 South bridge

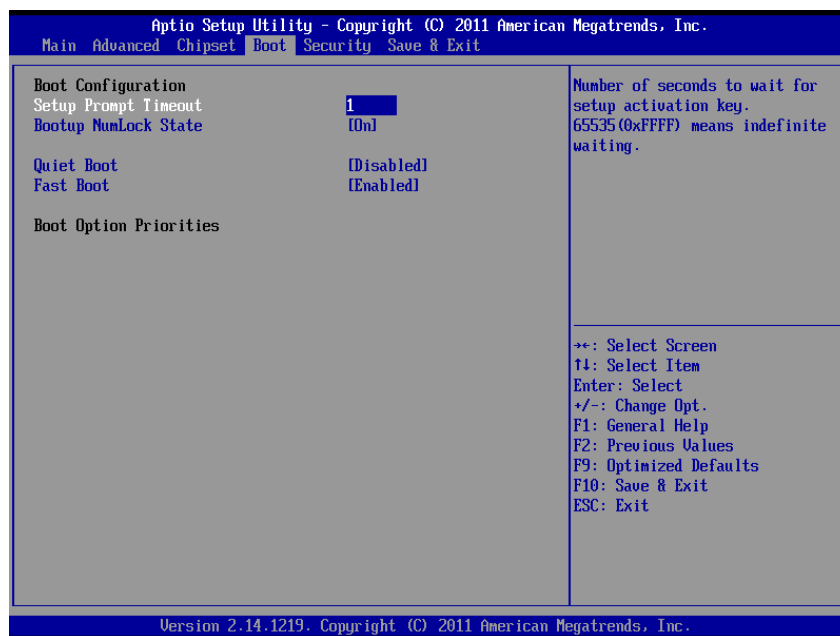


Item	Option	Description
<b>SATA Controller(s)</b>	Disabled Enabled <b>[Default]</b>	SATA Ports (0-3) Device Names if Present and Enabled.
<b>Configure SATA as</b>	IDE, AHCI <b>[Default]</b>	Select a configuration for SATA Controller.
<b>Port0 Speed Limit</b>	No Limit <b>[Default]</b> , GEN1 Rate GEN2 Rate	Select Port0 AHCI Speed Limit.
<b>Port1 Speed Limit</b>	No Limit <b>[Default]</b> , GEN1 Rate GEN2 Rate	Select Port1 AHCI Speed Limit.
<b>SATA Port 0</b>	Enabled <b>[Default]</b> , Disabled	Enable or Disable SATA Port.
<b>SATA Port 0 Hot Plug</b>	Enabled <b>[Default]</b> , Disabled	Designates this port as Hot Pluggable.

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<b>SATA Port 1</b>	Enabled[ <b>Default</b> ], Disabled	Enable or Disable SATA Port.
<b>SATA Port 1 Hot Plug</b>	Enabled[ <b>Default</b> ], Disabled	Designates this port as Hot Pluggable.

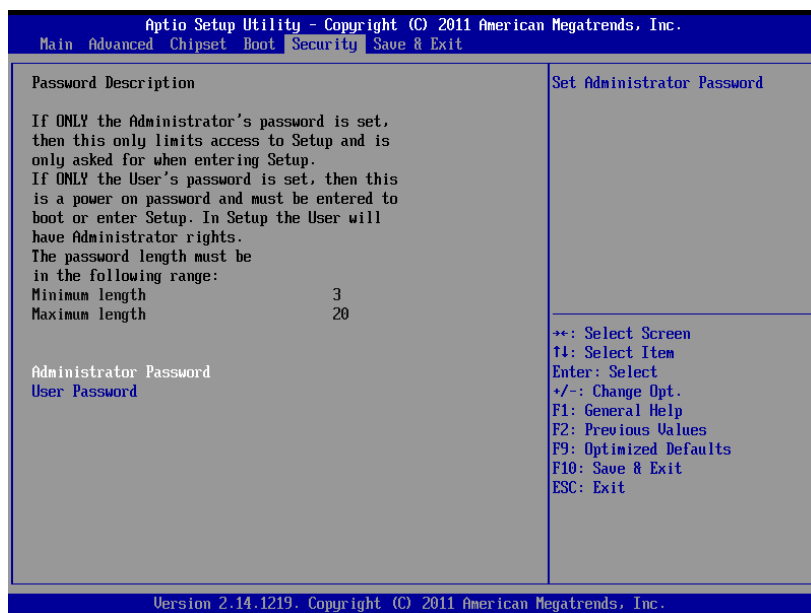
### 3.6.4 Boot settings



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

## 3.6.5 Security

Use the Security menu to set system and user password.



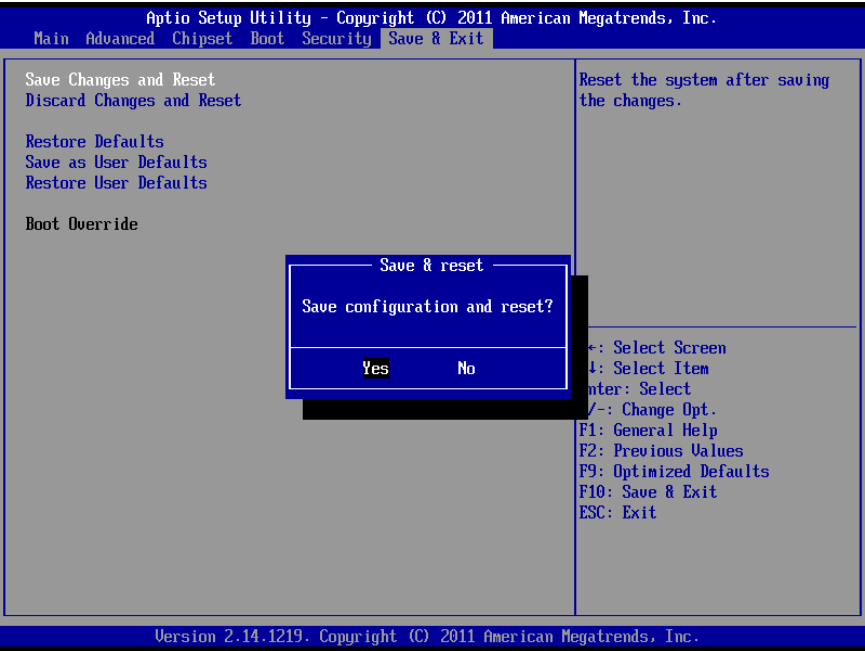
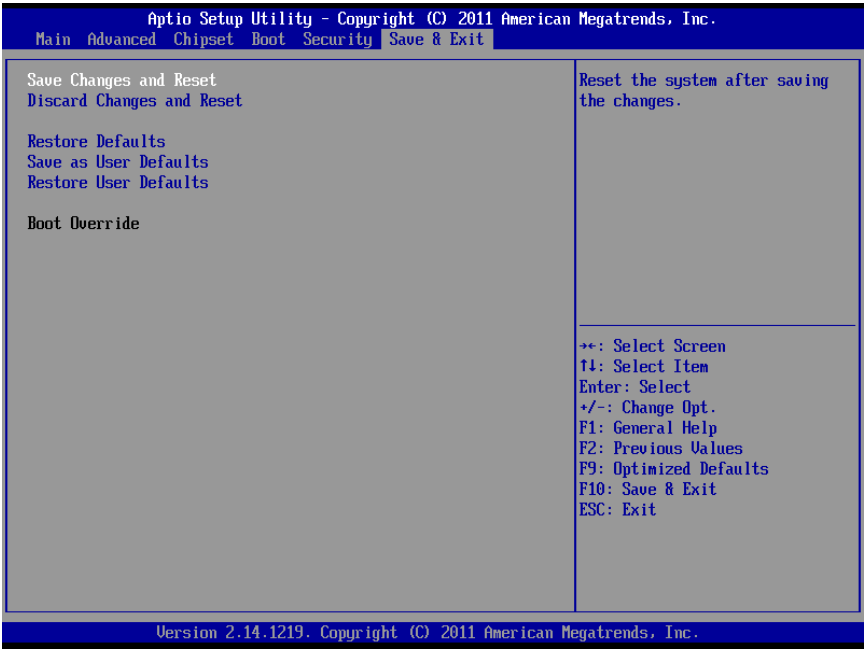
### 3.6.5.1 Administrator Password

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.

### **3.6.6.4 *Save as User Defaults***

This option saves a copy of the current BIOS settings as the User Defaults. This option is useful for preserving custom BIOS setup configurations.

### **3.6.6.5 *Restore as User Defaults***

This option restores all BIOS settings to the user defaults. This option is useful for restoring previously preserved custom BIOS setup configurations.

## 4. Drivers Installation



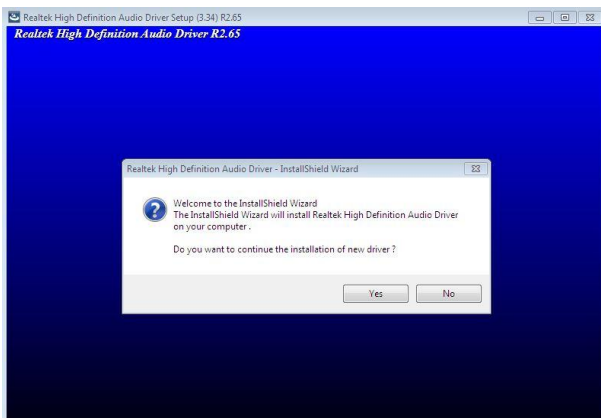
**Note:** Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

### 4.1 Install Audio Driver (For Realtek ALC661 HD Audio)

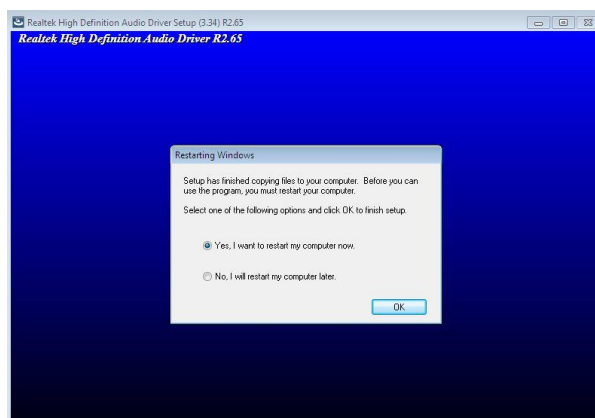
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \ **Driver\_Audio\ENX-CDD\_Audio**



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



**Step1.** Click **Yes** to Install..



**Step 2.** Select Yes to restart computer.

## 4.2 Install Chipset Driver (For Integrated Cedar Trail)

Insert the Supporting DVD-ROM to DVD-ROM drive, click on “start” icon and it should show the index page of Avalue’s products automatically. If not, locate the folder HTML and choose the product from the targeted folder.



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

### Step 1. Locate

「\ Driver\_Chipset\ENX-CDD\_Chipset」.



### Step 2. Select Next to start setup.



### Step 3. Select Yes to the next step.



### Step 4. Select Next to continue installation.



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

## 4.3 Install VGA Driver

Insert the Supporting DVD-ROM to DVD-ROM drive, click on “start” icon and it should show the index page of Avalue’s products automatically. If not, locate the folder HTML and choose the product from the targeted folder.



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

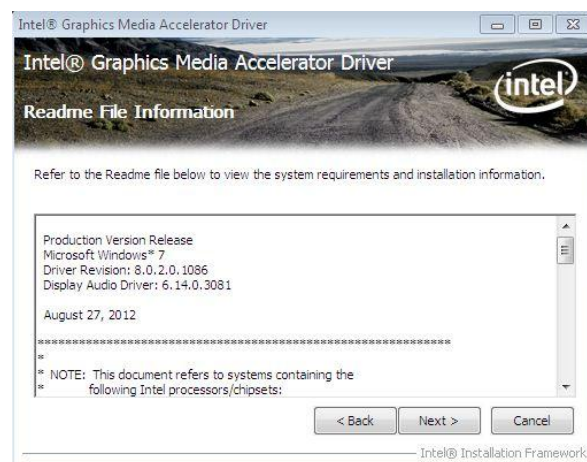
### Step 1. Locate 「\VGA\ENX-CDD\_Graphics」.



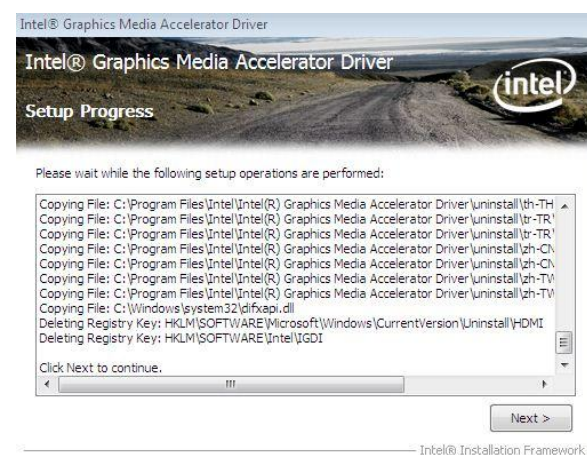
### Step 2. Select **Next** to start setup.



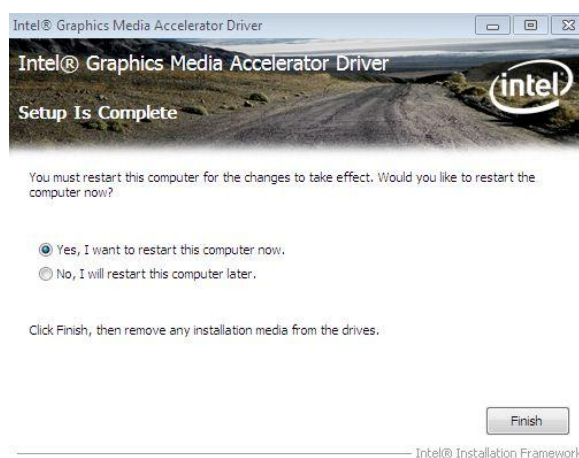
### Step 3. Select **Yes** to the next step.



### Step 4. Select **Next** to continue installation.



### Step 5. Select **Next** to continue installation.



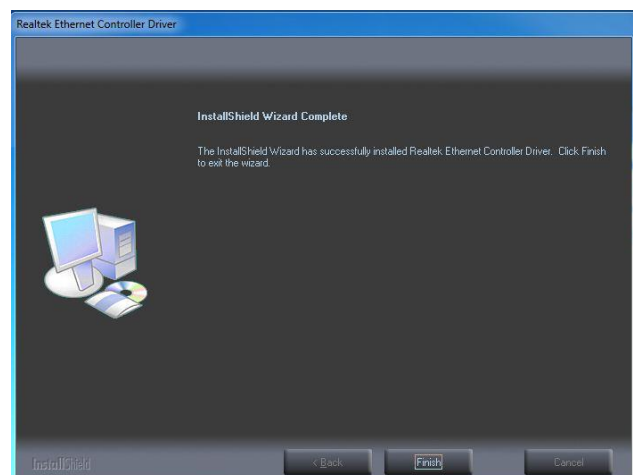
### Step 6. Select **Finish** to complete installation

### 4.4 Install LAN Driver (For Realtek 8111E Gigabit Ethernet)

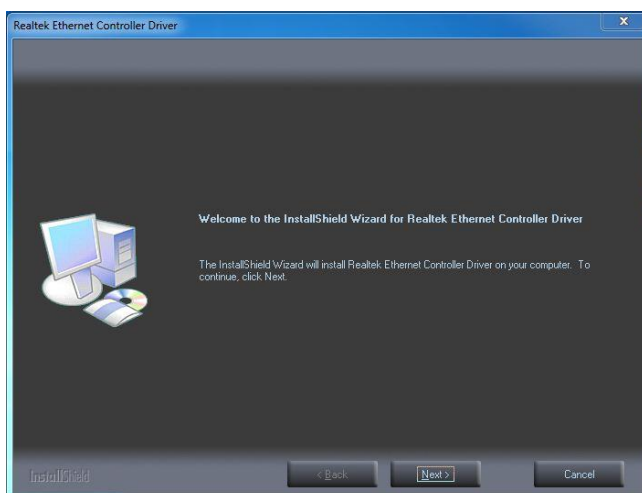
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\\Driver\_Network\\ENX-CDD\_LAN**.



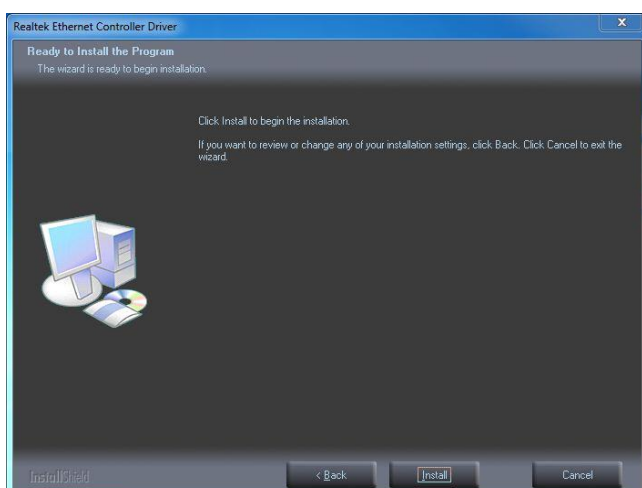
**Note:** The installation procedures and screen shots in this section are based on Windows 7 operation system.



**Step 3.** Click **Finish** to complete setup.



**Step 1.** Click **Next** to Install.



**Step 2.** Click **Install** to begin the installation.

## 4.5 Install AHCI Driver

Insert the Supporting DVD-ROM to DVD-ROM drive, click on “start” icon and it should show the index page of Avalue’s products automatically. If not, locate the folder HTML and choose the product from the targeted folder.



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

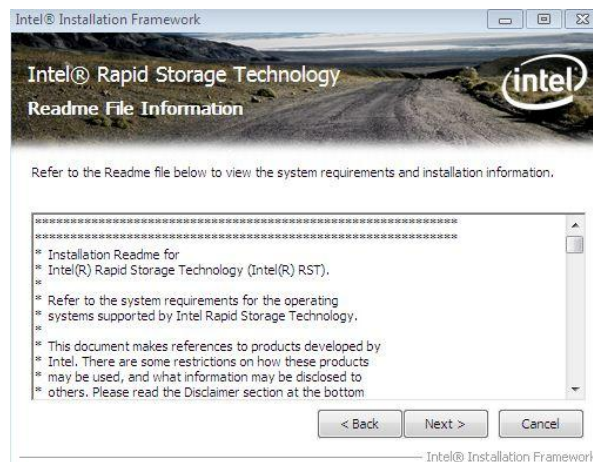
### Step 1. Locate 「\Utility\ENX-CDD\_AHCI」.



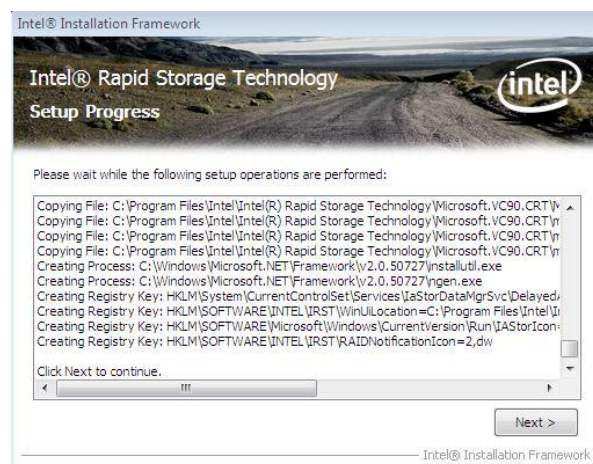
### Step 2. Select Next to start setup.



### Step 3. Select Yes to the next step.



### Step 4. Select Next to continue installation.



### Step 5. Select Next to continue installation.



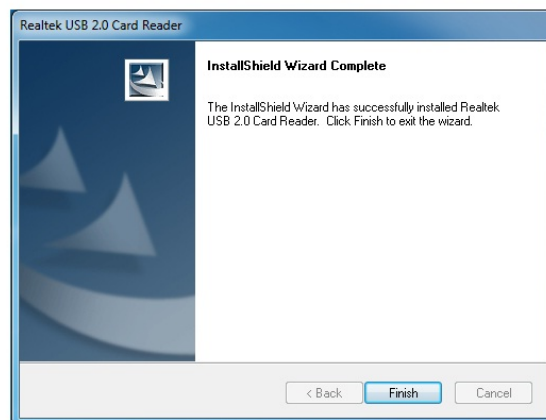
### Step 6. Select Finish to complete installation

## 4.6 Install Cardreader Driver

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



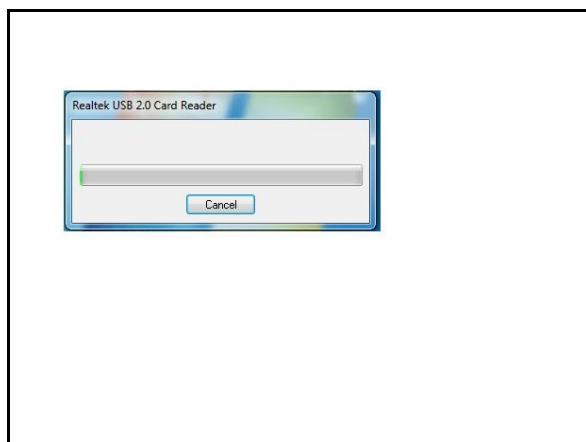
**Note:** The installation procedures and screen shots in this section are based on Windows 7 operation system.



**Step 3.** Click **Finish** to complete setup.



**Step 1.** Preparing Setup.



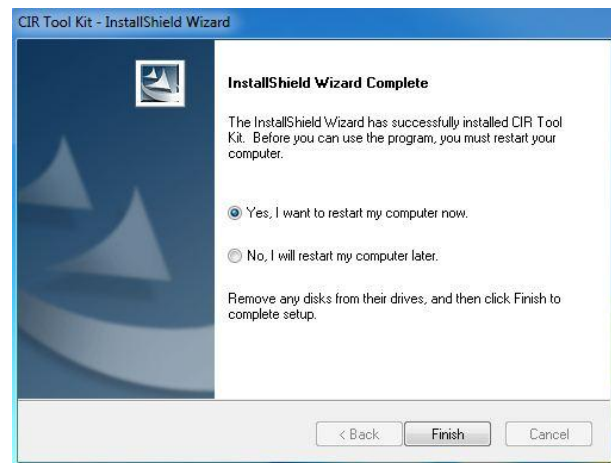
**Step 2.** Installation.

### 4.7 Install CIR Driver

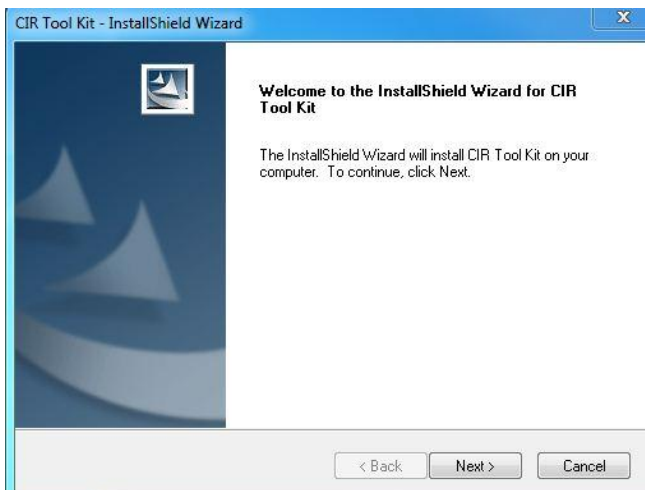
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Utility\CIR.



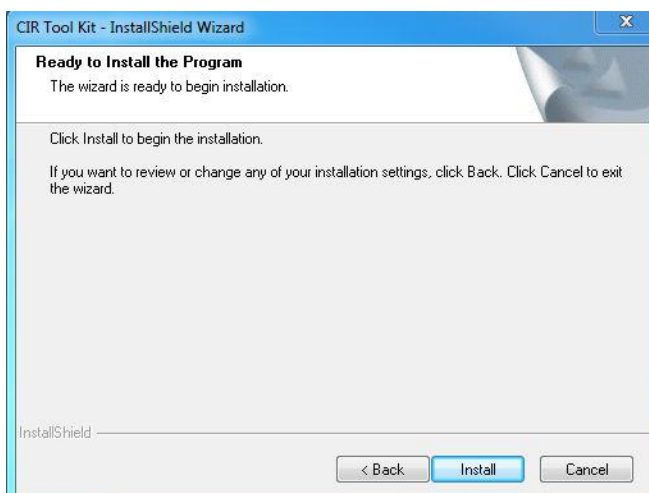
**Note:** The installation procedures and screen shots in this section are based on Windows 7 operation system.



**Step 3.** Click **Finish** to complete setup.



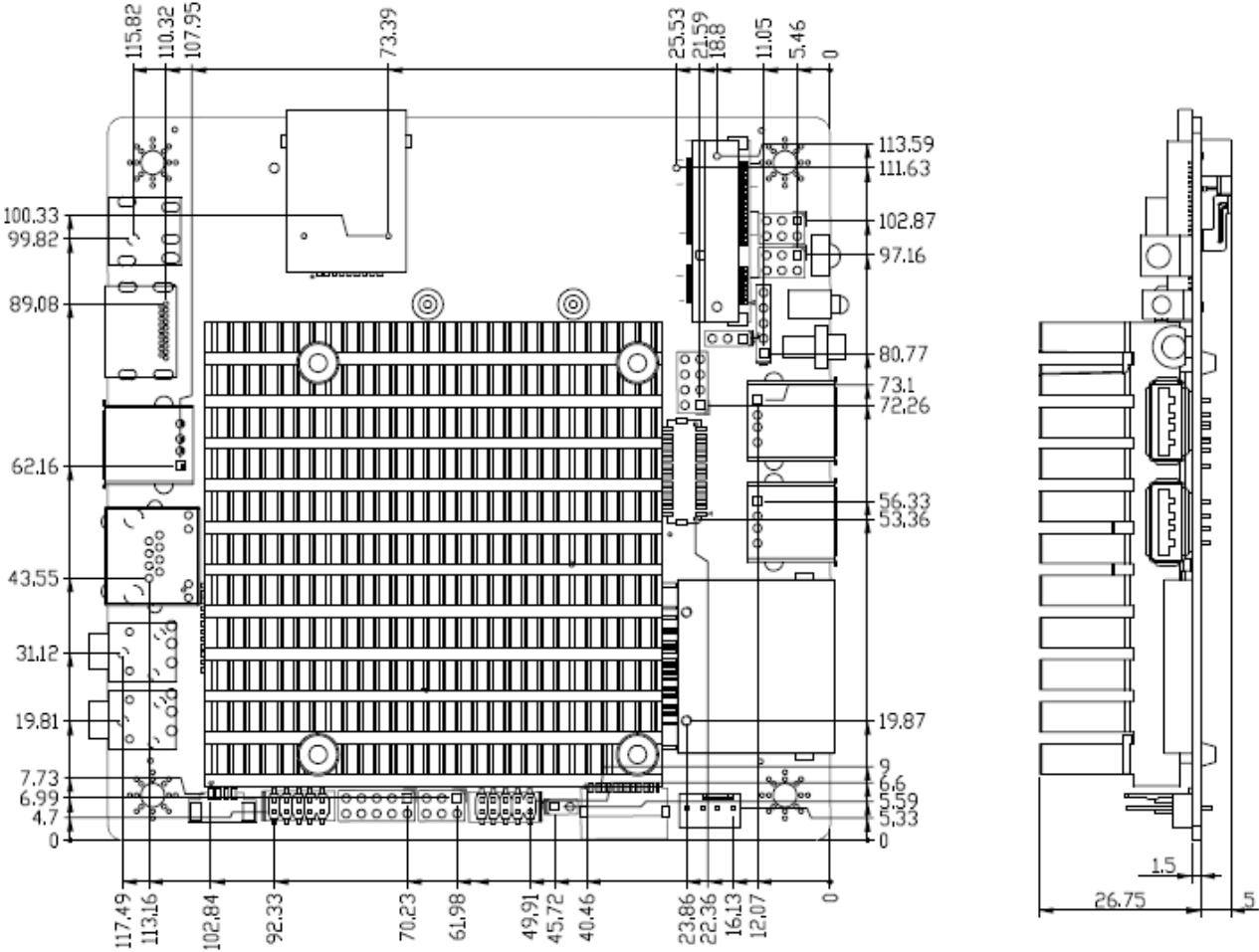
**Step 1.** Click **Next** to Install.



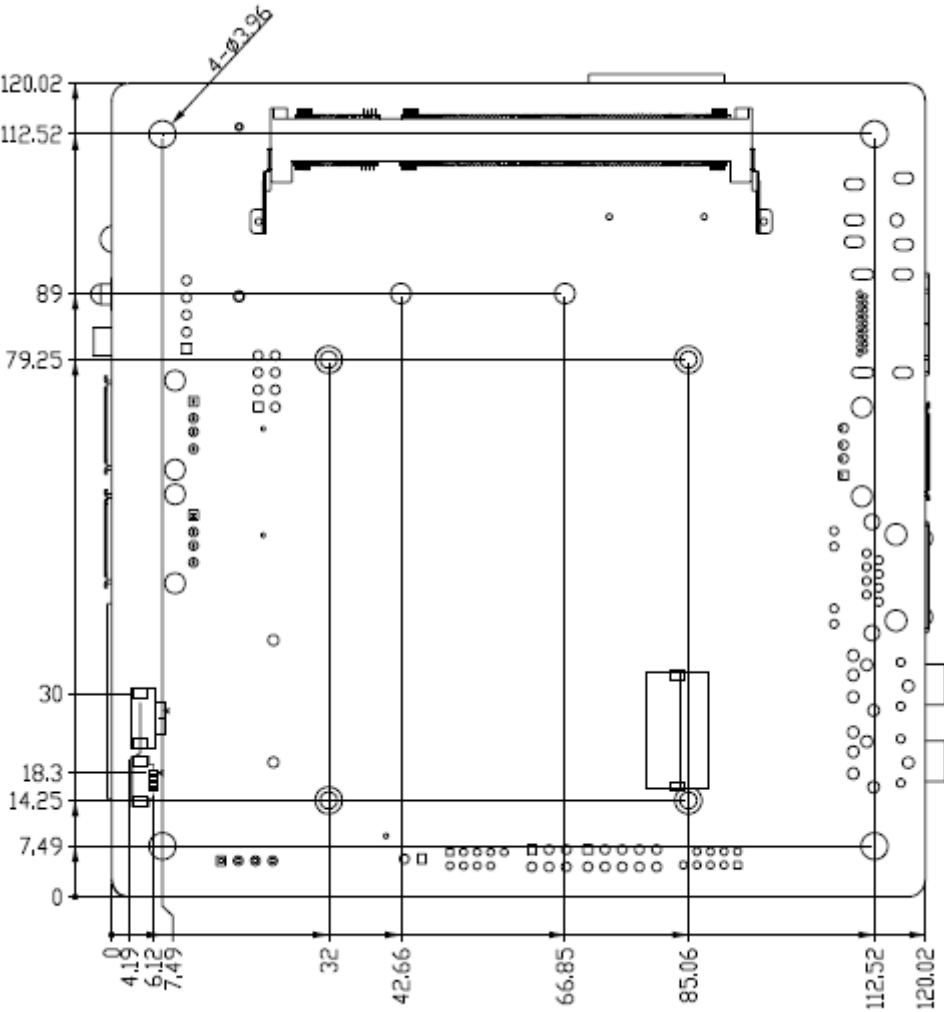
**Step 2.** Click **Install** to begin the installation.

# 5. Mechanical Drawing





Unit: mm



Unit: mm

