EMX-H61B

Intel® Core™/ Pentium®/ Celeron® Mini ITX Motherboard with Intel® H61 Express Chipset

User's Manual

2nd Ed – 14 August 2015

Part No. E2047H61B01R

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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:

- Driver/Utility CD X 1
- Serial ATA Signal Cable X 1
- Serial ATA Power Cable X 1
- IO Shield
- COM Cable X 1
- Screw X 2
- CPU Cooler back plate
- Motherboard X 1

1.3 Document Amendment History

Revision	Date	By	Comment
1st	May 2013	Avalue	Initial Release
2nd	August 2015	Avalue	Update Block Diagram

1.4 Manual Objectives

This manual describes in details Avalue Technology EMX-H61B Single Board.

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

We strongly recommend that you study this manual carefully before attempting to set up EMX-H61B 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

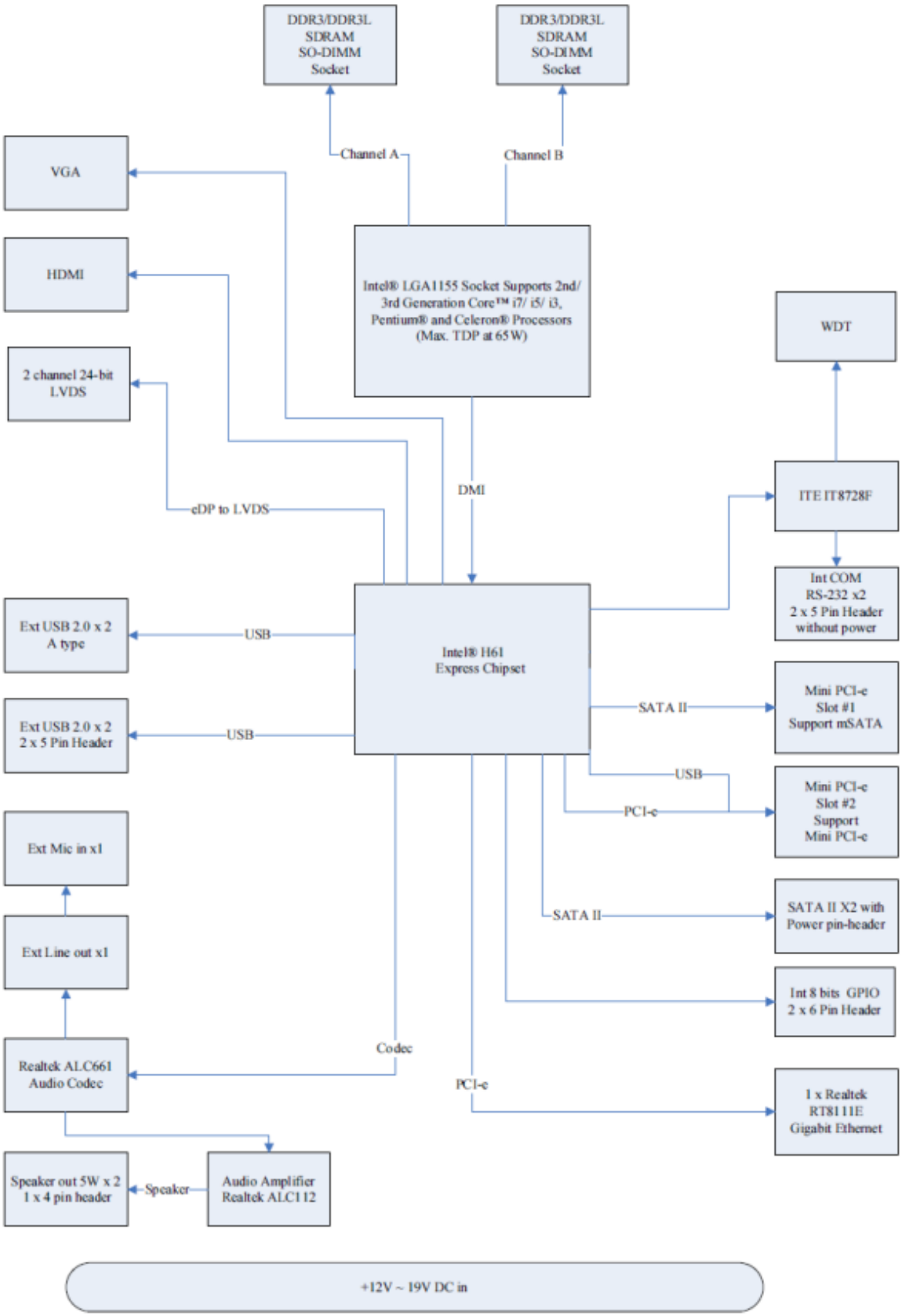
System	
CPU	• Intel® LGA1155 Socket Supports 2nd /3rd Generation Core™ i7/ i5/ i3, Pentium® and Celeron® Processors (Max. TDP at 65W)
BIOS	• AMI uEFI BIOS, 64Mbit SPI Flash ROM
System Chipset	• Intel® H61 Chipset
I/O Chip	• ITE IT8728F
System Memory	• 2 x 204-pin DDR3/DDR3L(Jumper Selectable) 1333/1600 SODIMMs, Up to 16 GB
Watchdog Timer	• H/W Reset, 1sec. – 65535sec./min. • 1sec. or 1min. step
H/W Status Monitor	• CPU & system temperature monitoring • Voltages monitoring
TPM	• N/A
Buzzer	• Buzzer onboard
Expansion	• 1 x Mini PCI-e supported mSATA only • 1 x Mini PCI-e supported WiFi
I/O	
Rear Side External I/O Connector	• 1 x RJ-45 • 2 x dual deck USB 2.0 connectors • 1 x VGA • 1 x HDMI • 1 x Mic-In and 1 x Line-out • DC Jack
Internal I/O Connector	• Storage: - 2 x SATA II connectors - 2 x SATA power connectors - 1 x mSATA by Mini PCI-e slot (support mSATA only) • COM: - COM1~2: support RS-232 connector, without / +5V&+12V supported • GPIO: 8 bits • 1 x Mini PCI-e slot for WiFi • 2 x 2 x 5 pin, pitch 2.54mm connector for USB 2.0 • 1 x 4 pin CPU fan connector with smart fan function supported • 1 x 3 pin System fan connector. • 1 x horizontal type battery connector • 1 x 2 x 5 pin, pitch 2.54mm connector for front panel

	• 1 x 2 x 2 pin ATX power connector for DC +12~19V input • 1 x 2 x 15 pin , pitch 1.00mm connector for LVDS • 1 x 6 pin , pitch 2.00mm connector for Inverter • 1 x 4 pin , pitch 2.00mm connector for speaker • 1 x DC Jack connector
Display	
Chipset	• Intel H61 integrated
Resolution	• Dual display pipes supported - HDMI: 1920x1080 - VGA: 2048x1536
LVDS	• Pardac PS8625 eDP to LVDS ,Support 2CH 24bits LVDS 1920x1200
Audio	
Chipset	• Realtek ALC661 HD Audio Decoding Controller.
Audio Interface	• Mic-In, Line-In
Audio Amplifier	• Realtek ALC112 Stereo Class-D 5W x 2
Ethernet	
Chipset	• 1 x Realtek RTL8111E PCI-Express Gigabit Ethernet
Ethernet Interface	• 10/100/1000 Gigabit Ethernet
Mechanical & Environmental	
Power Requirement	• DC in +12V~19V
Power Type	• Single power +12V~19V Power input / ATX mode
ACPI	• Single power ATX Support S0,S1, S3, S4, S5 • ACPI 3.0 Compliant
Operating Temp.	• 0°C ~60°C
Storage Temp.	• -40°C ~75°C
Operating Humidity	• 0%~90% relative humidity, non-condensing
Size (L x W)	• 6.7" x 6.7" (170mm x 170mm)
Weight	• 0.40 kg

Note: Specifications are subject to change without notice.

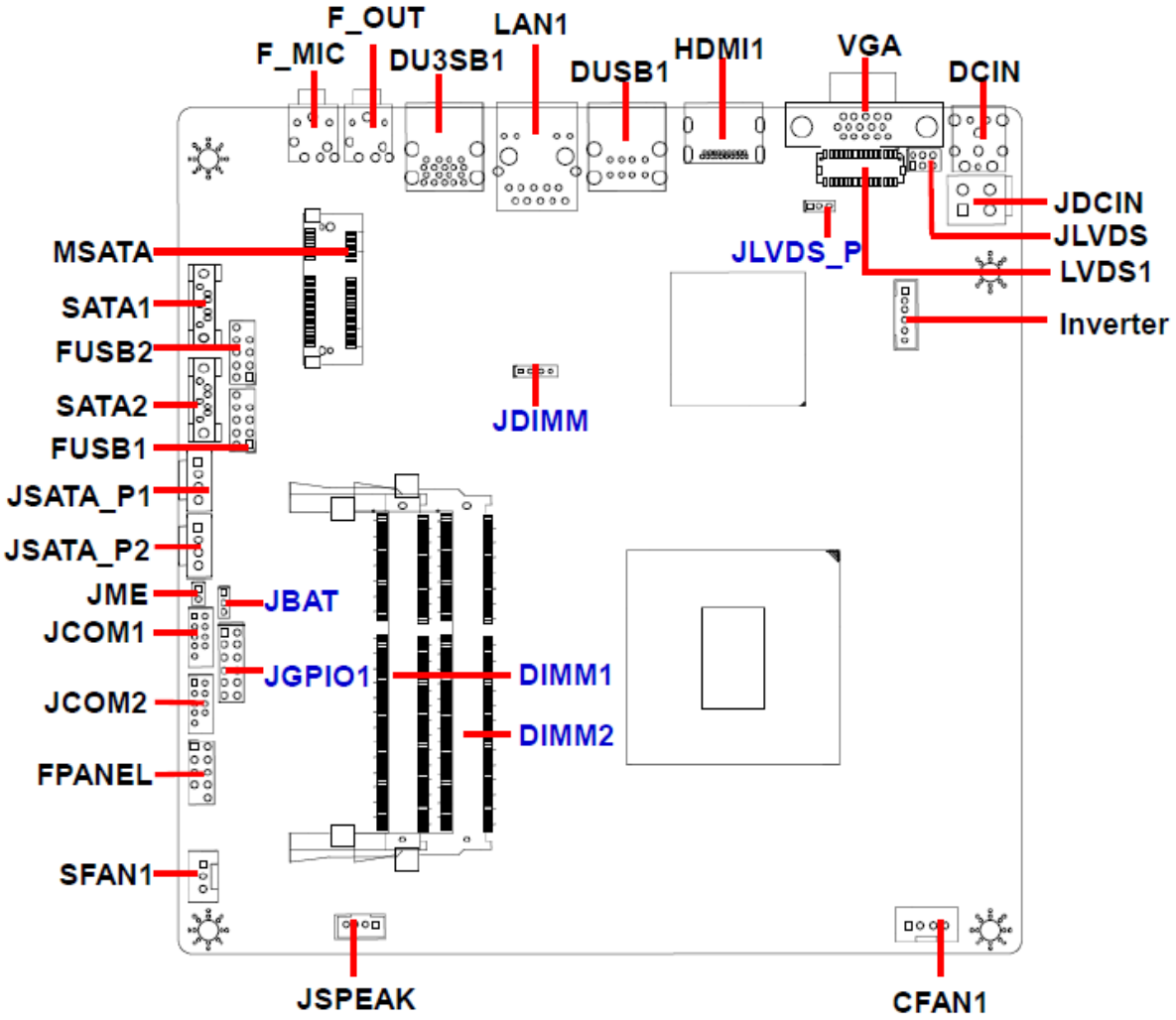
1.6 Architecture Overview—Block Diagram

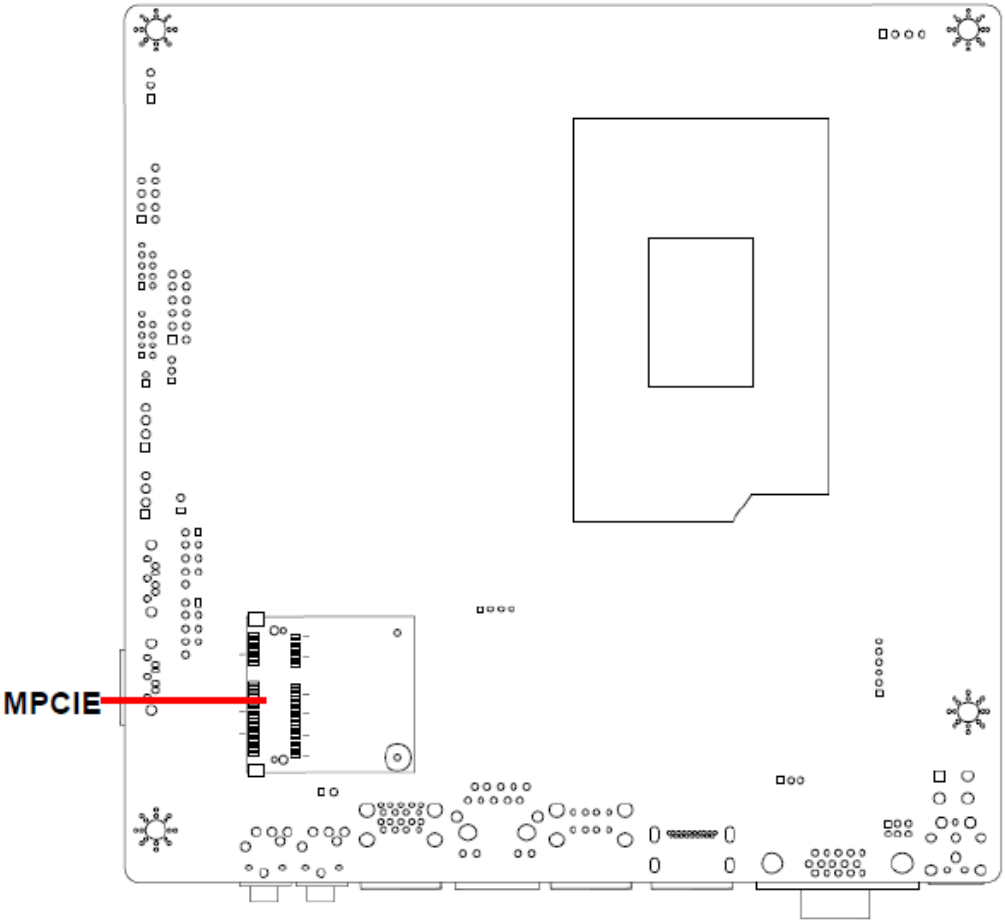
The following block diagram shows the architecture and main components of EMX-H61B.



2. Hardware Configuration

2.1 Product Overview




MPCIE

2.2 Installation Procedure

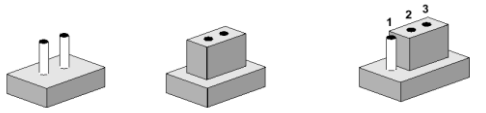
This chapter explains you the instructions of how to setup your system.

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.



Open Closed Closed 2-3

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

Open Closed Closed 2-3

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

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

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

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

Jumpers

Label	Function	Note
JBAT	Clear CMOS	1 x 3 header, pitch 2.00 mm
JME	ME update	1 x 2 header, pitch 2.00 mm
JLVDS	LVDS connector for 18/24 bit switches	2 x 3 header, pitch 2.00 mm
JLVDS_P	LVDS Power connector	1 x 3 header, pitch 2.00 mm
JDIMM	DDR3/DDR3L using	1 x 4 header, pitch 2.00 mm

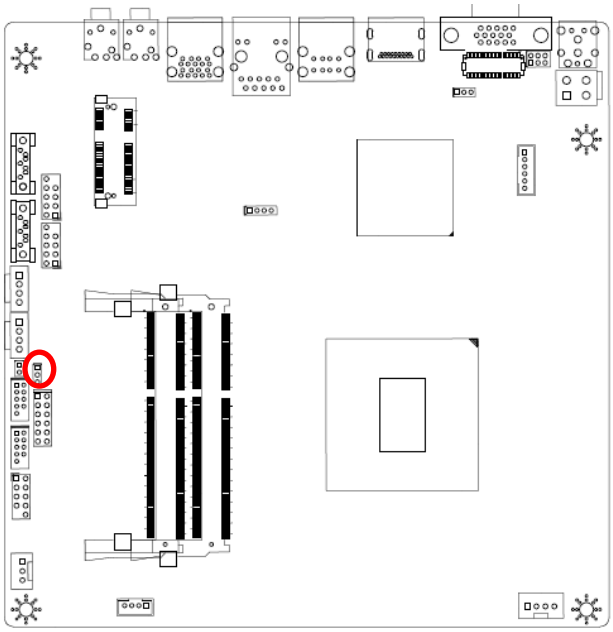
Connectors

Label	Function	Note
F_MIC	Mic-in audio jack	3.5mm phone jack
F_OUT	Line-out audio jack	3.5mm phone jack
DU3SB1	USB connector	Stack USB 2.00 connector

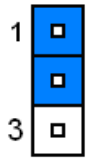
DUSB1	USB connector	Stack USB 2.00connector
LAN1	RJ-45 Ethernet connector 1	RJ45 w/ indicator connector
DCIN	DC power-in connector	
JDCIN	DC power-in connector	2 x 2 wafer , pitch 4.20 mm
FPANEL	Front Panel Switches	2 x 5 header, pitch 2.54 mm
LVDS1	LVDS connector	2 x15 wafer, pitch 1.0 mm
JSPEAK	Speaker Headers	1 x 4 wafer, pitch 2.00 mm
HDMI1	HDMI connector	
MSATA	mSATA slot	Full size
SATA1/2	Serial ATA connector 1/2	SATA 7P connector
JSATA_P1/2	SATA Power connector 1/2	1 x 4 wafer, pitch 2.54 mm
JCOM1/2	Serial port 1/2 connector	2 x 5 header, pitch 2.00 mm
JGPIO1	General Purpose I/O	2 x 6 header, pitch 2.54 mm
F_USB1/2	USB Connector 1/2 - USB2.0	2 x 5 header, pitch 2.54 mm
SFAN1	System Fan connector	1 x 3 wafer, pitch 2.54 mm
CFAN1	CPU Fan connector	1 x 4 wafer, pitch 2.54 mm
VGA	VGA connector	D-SUB 15pin
MPCIE	Mini-PCIe	Half size
DIMM1	DDR3 SODIMM connector1	SO-DIMM 204Pin
DIMM2	DDR3 SODIMM connector2	SO-DIMM 204Pin
Inverter	Inverter connector	1 x 6 wafer, pitch 2.00mm

2.4 Setting Jumpers & Connectors

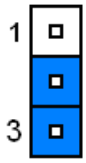
2.4.1 Clear CMOS (JBAT)



Normal*



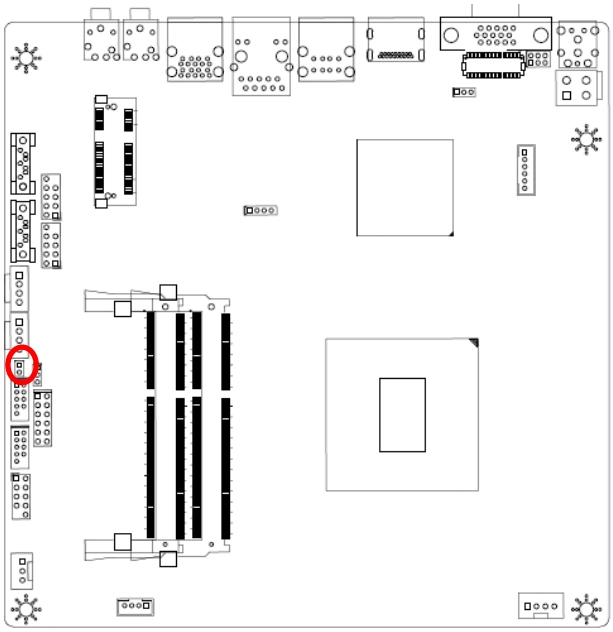
Clear CMOS



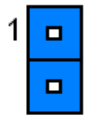
*** Default**

Pin	Define
1-2	Normal
2-3	Clear CMOS

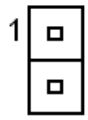
2.4.2 ME update (JME)



Refresh the ME*

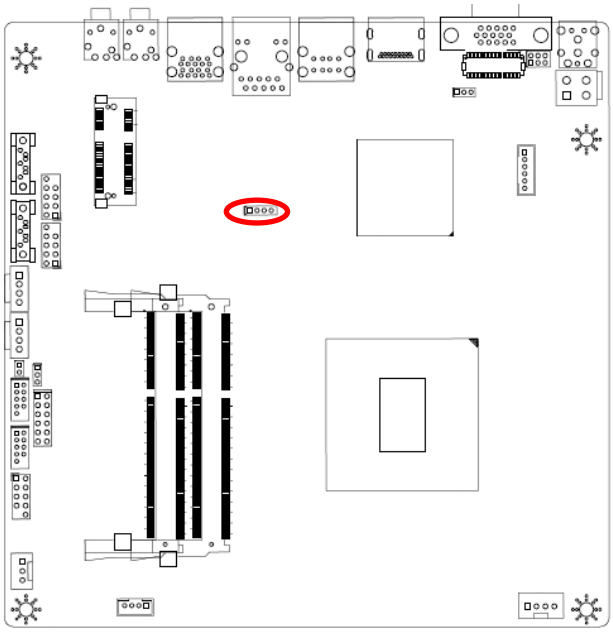


Can't refresh the ME

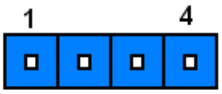


*** Default**

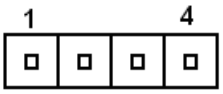
2.4.3 DDR3/DDR3L using (JDIMM)



DDR3*



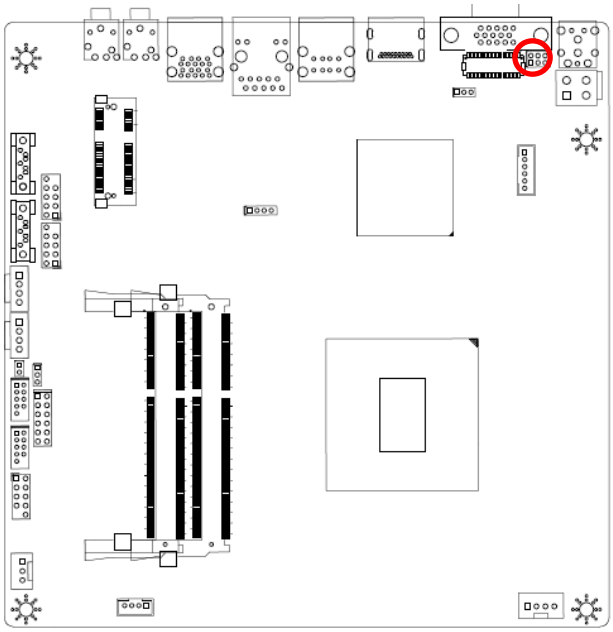
DDR3L



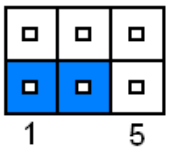
Pin	Define
Open	DDR3L
Close	DDR3

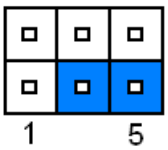
*** Default**

2.4.4 LVDS connector for 18/24 bit switches (JLVDS)

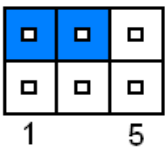


8 BIT JEIDE* **8BIT VESA**





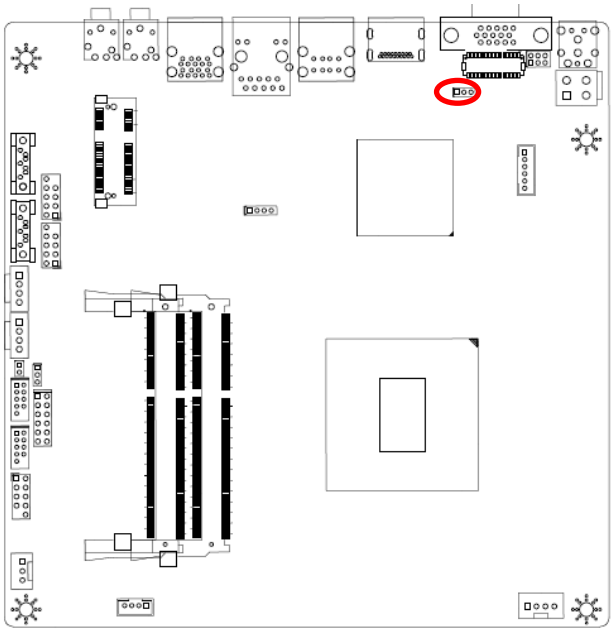
SINGLE LINK LVDS

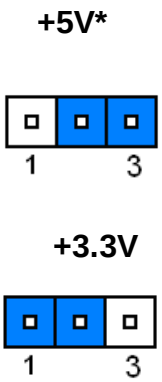


Pin	Define
1-3	8BIT JEIDE
3-5	8BIT VESA
NC	6BIT
2-4	NC=DUANL LINK LVDS CLOS=SINGLE LINK LVDS

*** Default**

2.4.5 LVDS Power connector (JLVDS_P)



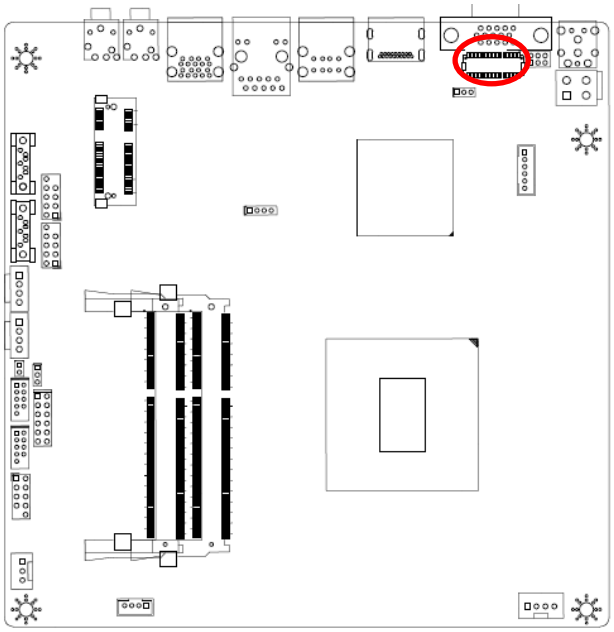


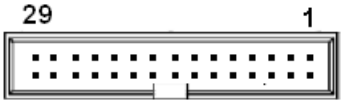
Pin	Define	Max current
1-2	+3.3V	1A
2-3	+5V	1A

*** Default**

Note: This jumper is working for LVDS1 VDD power.

2.4.6 LVDS connector (LVDS1)

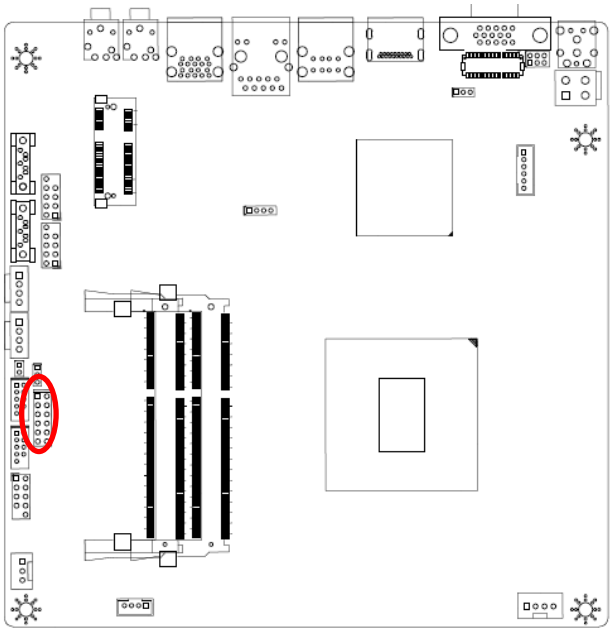


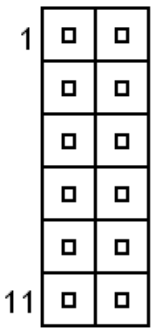


Signal	PIN	PIN	Signal
GND	1	2	GND
DTX0+	3	4	DTX1+
DTX0-	5	6	DTX1-
DTX2+	7	8	DCLK+
DTX2-	9	10	DCLK-
DTX3+	11	12	GND
DTX3-	13	14	TX3+
GND	15	16	TX3-
TX0+	17	18	TX1+
TX0-	19	20	TX1-
TX2+	21	22	CLK+
TX2-	23	24	CLK-
GND	25	26	GND
VDD	27	28	VDD
VDD	29	30	VDD

Note: Mapping connector CSI-1171-30 (1.0mm).

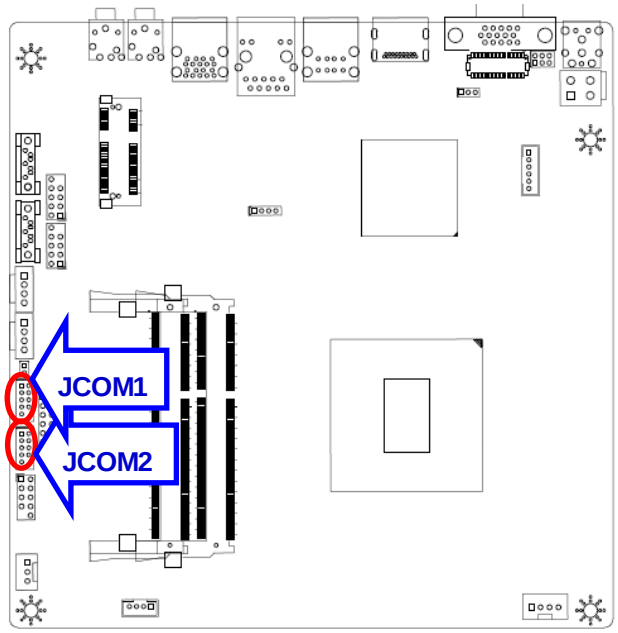
2.4.7 General Purpose I/O (JGPIO1)

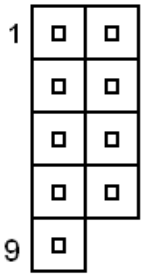




Signal	PIN	PIN	Signal
+5V	1	2	12V
GPO	3	4	GPI
GPO	5	6	GPI
GPO	7	8	GPI
GPO	9	10	GPI
GND	11	12	GND

2.4.8 Serial port 1/2 connector (JCOM1/2)

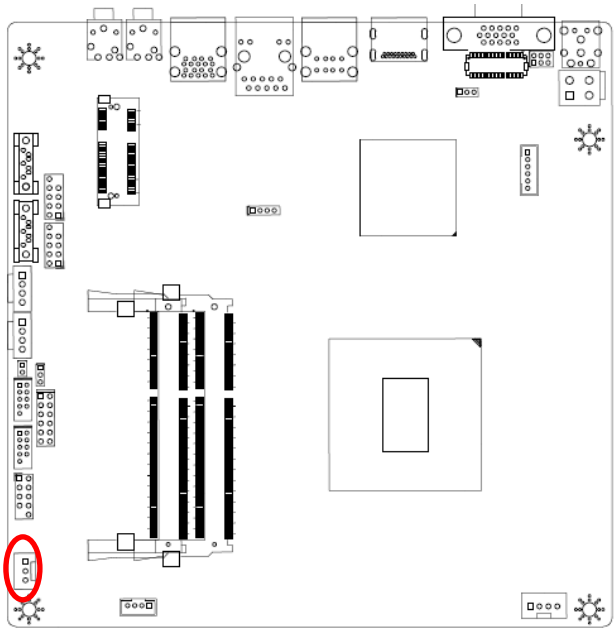


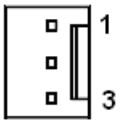


Signal	PIN	PIN	Signal
DCD	1	2	RXD
TXD	3	4	RTD
GND	5	6	DSR
RTS	7	8	CTS
RI	9		

Note: COM 1/2 Pin9 without power.

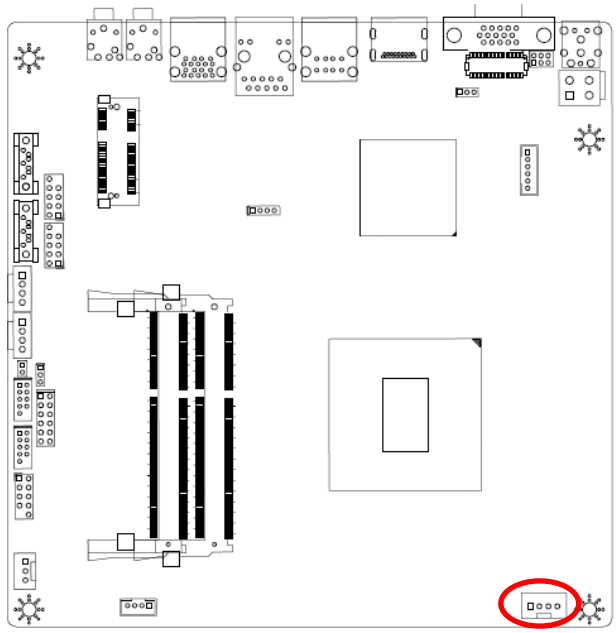
2.4.9 System Fan connector (SFAN1)

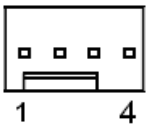




PIN	Signal
1	RPM
2	+12V
3	Ground

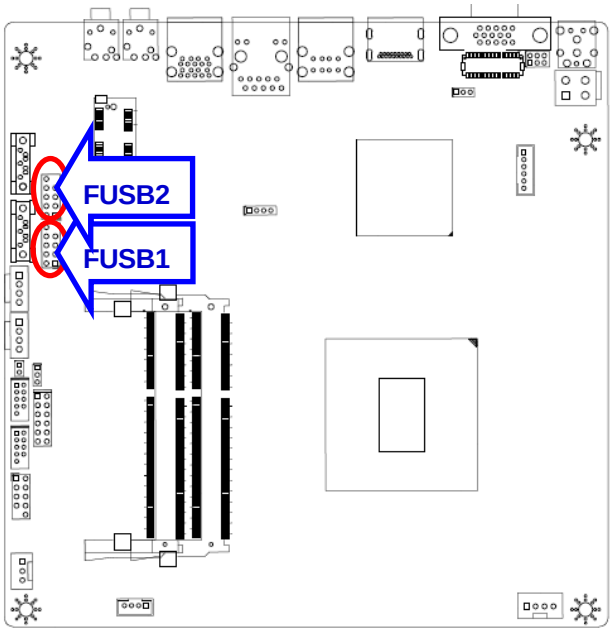
2.4.10 CPU Fan connector (CFAN1)

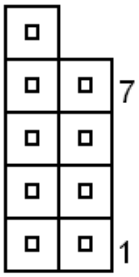




PIN	Signal
1	Ground
2	+12V
3	RPM
4	Control

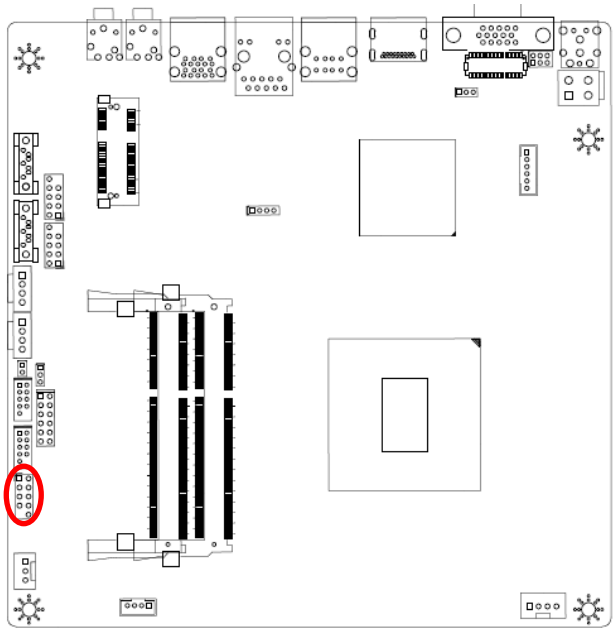
2.4.11 USB Connector 1/2 - USB2.0 (FUSB1/2)

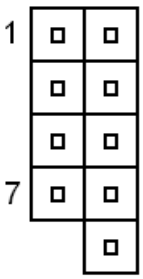




Signal	PIN	PIN	Signal
GND	10		
GND	8	7	GND
DATA+	6	5	DATA+
DATA-	4	3	DATA-
5V	2	1	5V

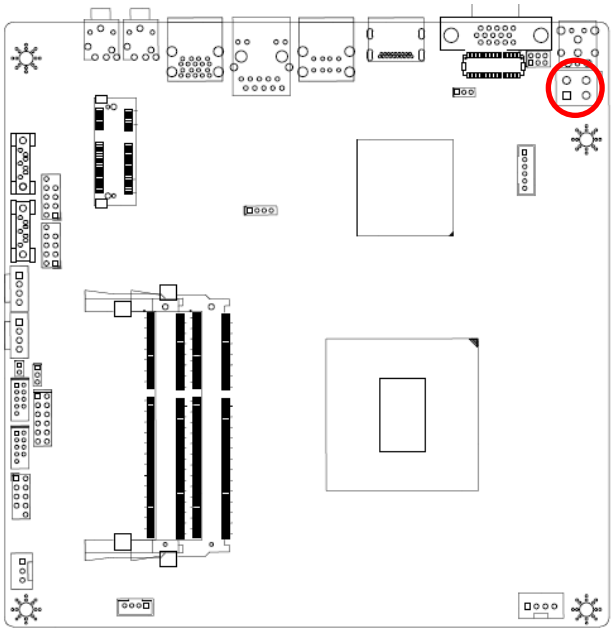
2.4.12 Front Panel Switches (FPANEL)

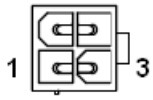




Signal	PIN	PIN	Signal
HDLED+	1	2	PWRLED+
HDLED-	3	4	PWRLED-
GND	5	6	GND
RESET	7	8	PWRBTN#
		10	GND

2.4.13 DC power-in connector (JDCIN)

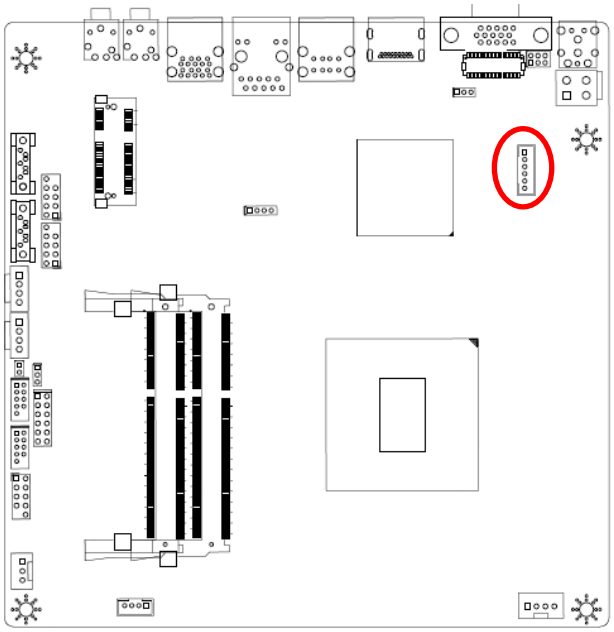




Signal	PIN	PIN	Signal
GND	2	4	+12~19V
GND	1	3	+12~19V

Note: Suggest bundle with 19V power adapter.

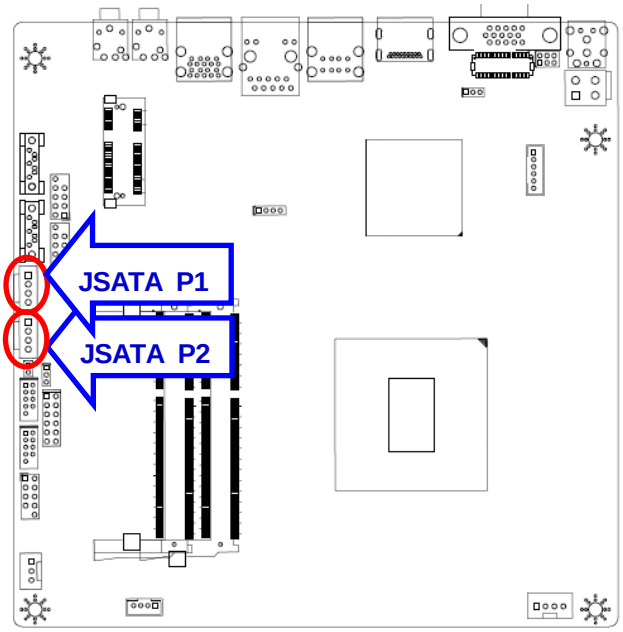
2.4.14 Inverter connector (Inverter)



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

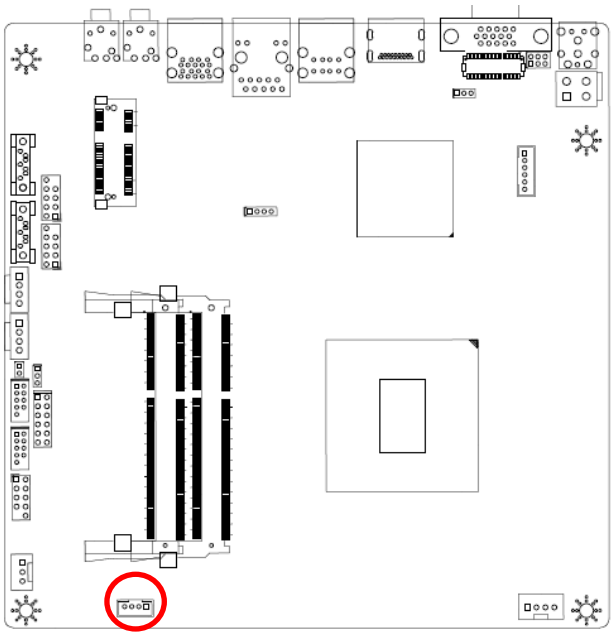
Note: Mapping connector PHR6.

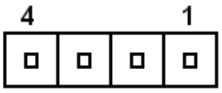
2.4.15 SATA Power connector 1/2 (JSATA_P1/2)



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

2.4.16 Speaker Headers (JSPEAK)

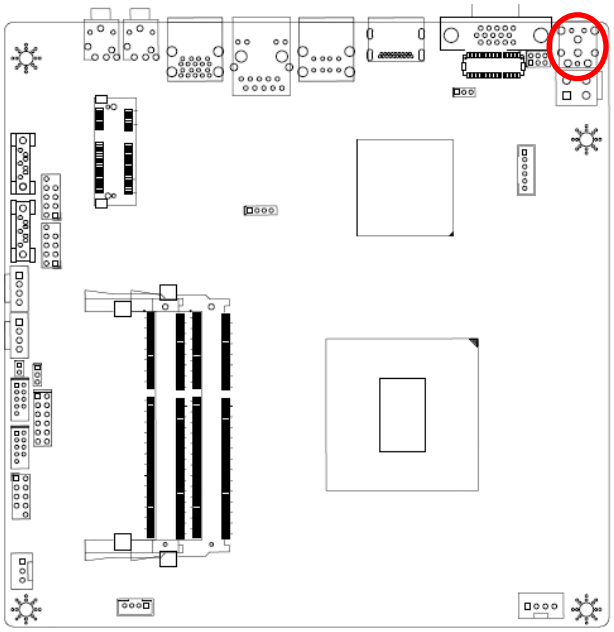


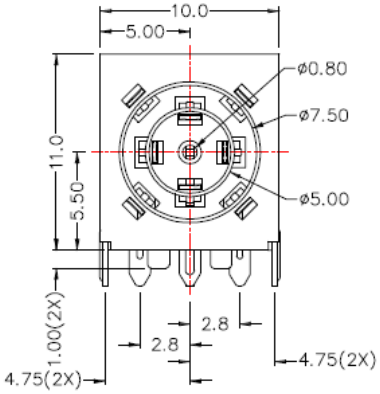


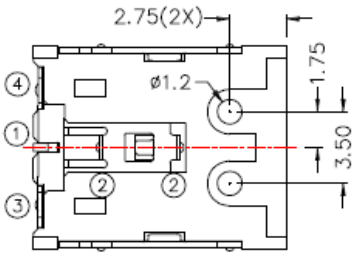
PIN	Signal
1	INTSPL+
2	INTSPL-
3	INTSPR+
4	INTSPR-

Note: Support 5W 8ΩX 2 speaker.
Mapping connector PHR-4.

2.4.17 DC power-in connector (DCIN)



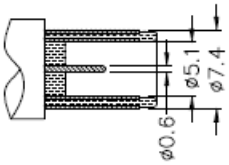


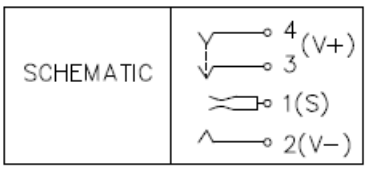


*MATERIAL

TERMINAL 1	:PHOSPHOR BRONZE
TERMINAL 2	:PHOSPHOR BRONZE
TERMINAL 3	:PHOSPHOR BRONZE
TERMINAL 4	:PHOSPHOR BRONZE
SPRING	:STAINLESS STEEL
SHIELD	:BRASS
HOUSING	:PA6T

DC MATE PLUG





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
F7 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 BIOS supports an override to the NVRAM settings which resets your system to its defaults.

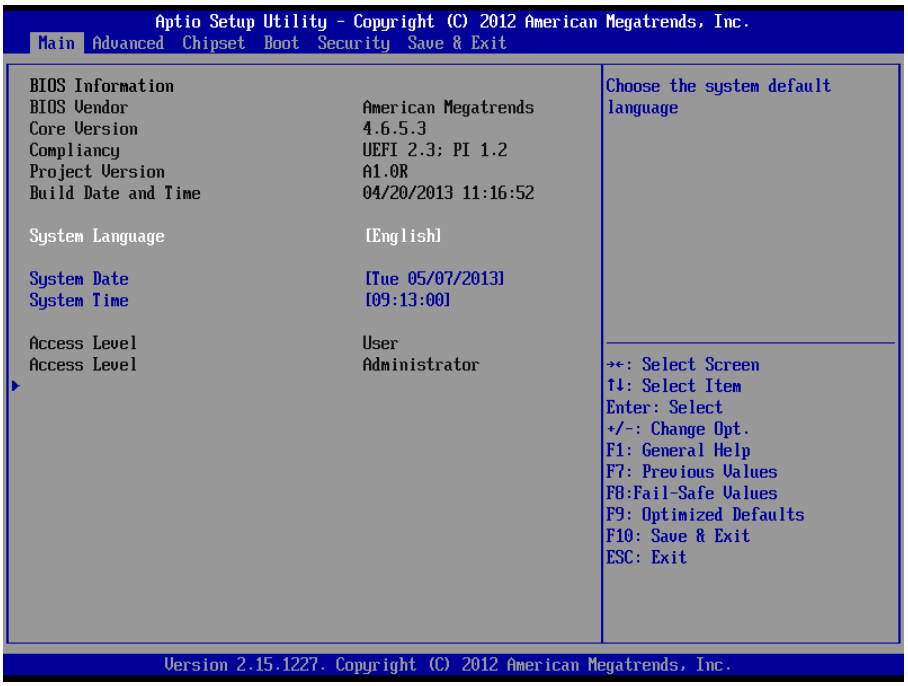
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your systems manufacturer to provide the absolute maximum performance and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

Use this option to select system language

3.6.1.2 System Date

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

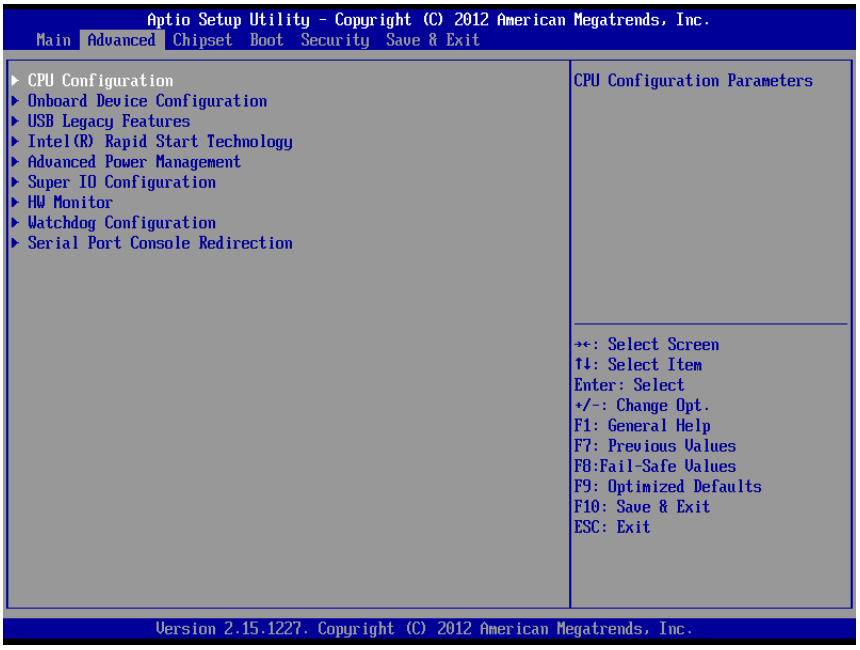
3.6.1.3 System Time

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

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

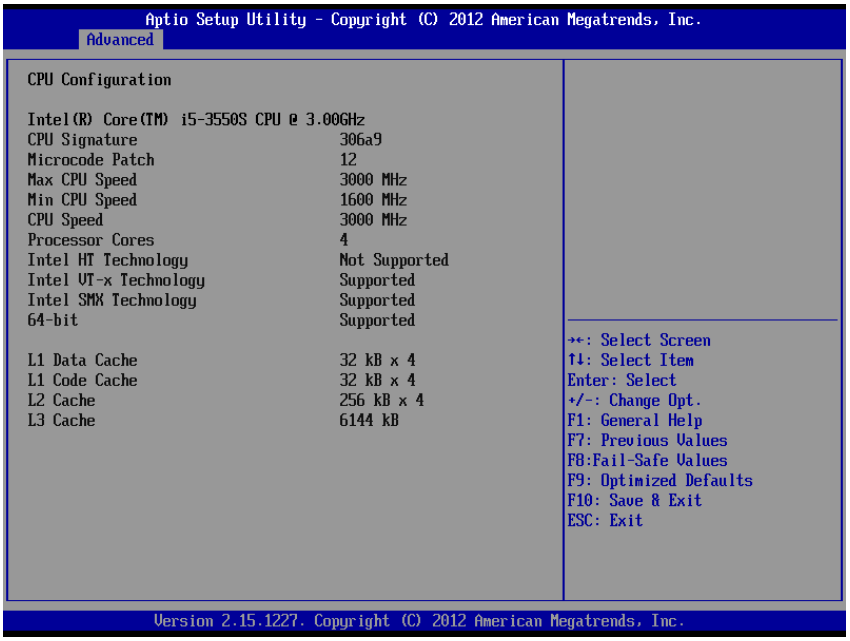
3.6.2 Advanced BIOS settings

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

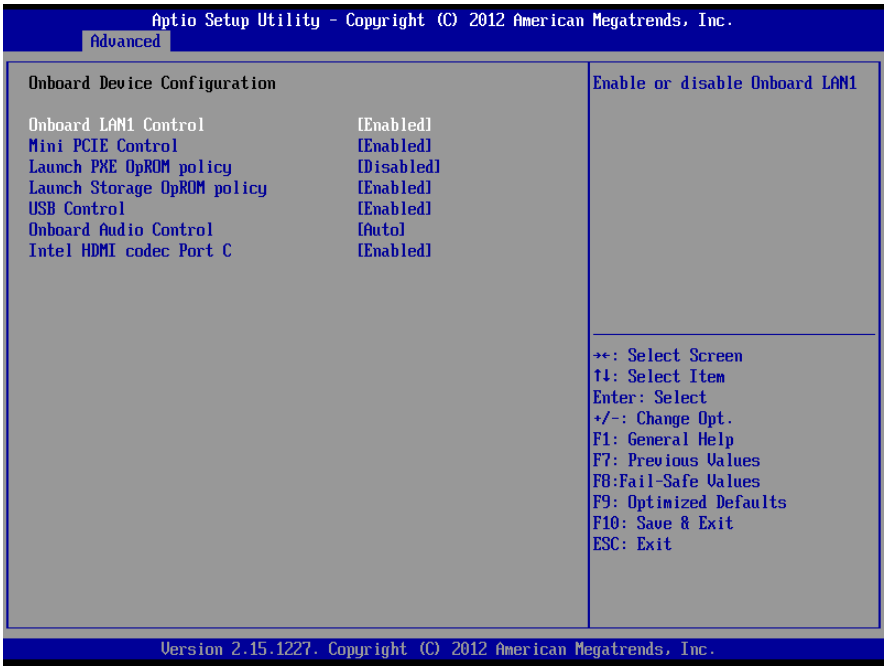


3.6.2.1 CPU Configuration

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

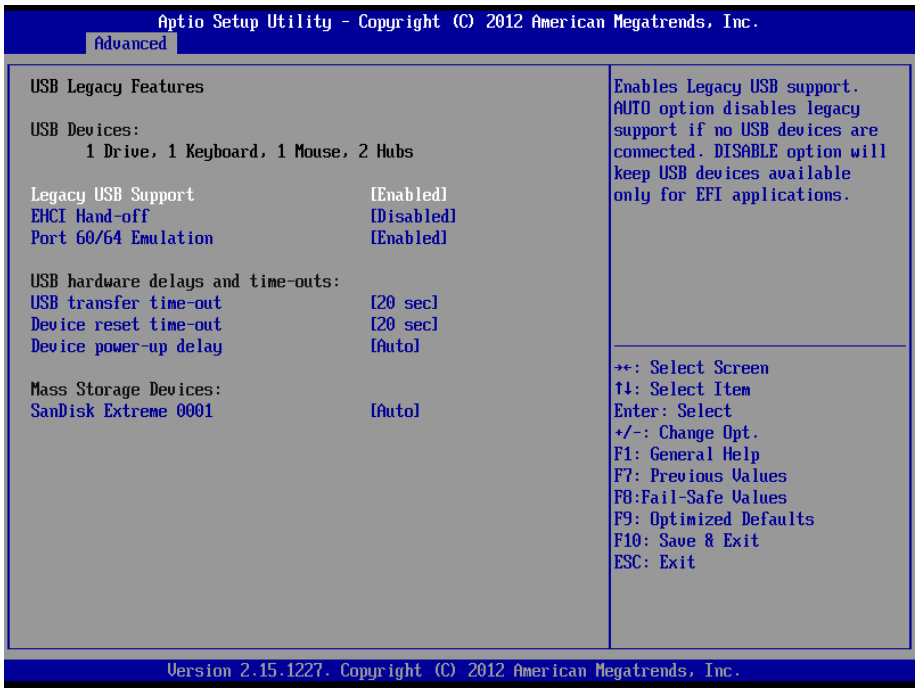


3.6.2.2 Onboard Device Configuration



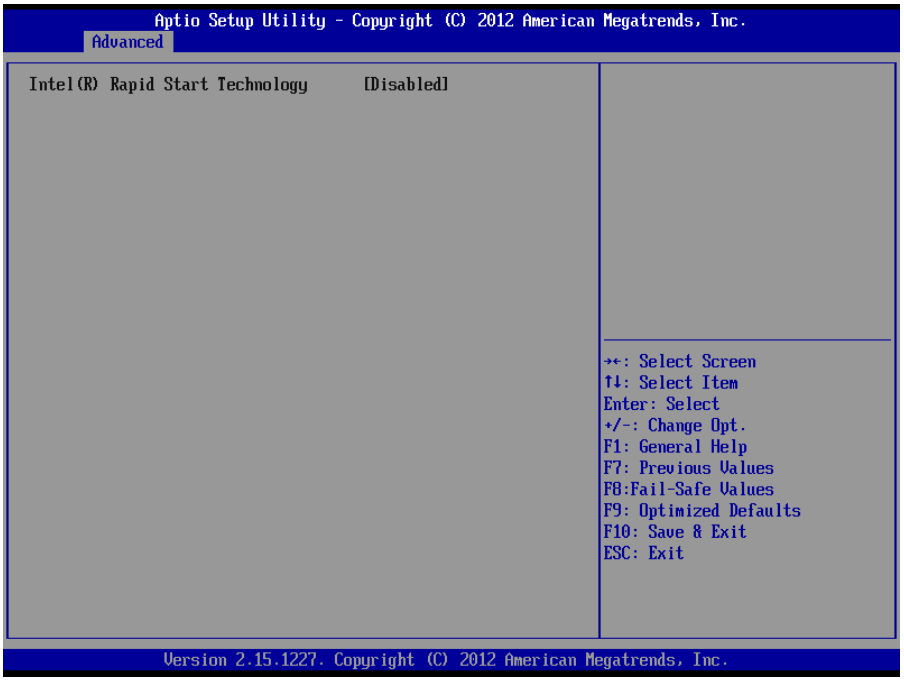
Item	Options	Description
Onboard LAN1 Control	Disabled Enabled**[Default]**	Enable or disable Onboard LAN1.
Mini PCIE Control	Disabled Enabled**[Default]**	Enable or disable Mini PCIE.
Launch PXE OpROM policy	Disabled**[Default]** Enabled	Controls the execution of UEFI and Legacy PXE OpROM.
Launch Storage OpROM policy	Disabled Enabled**[Default]**	Controls the execution of UEFI and Legacy Storage OpROM.
USB Control	Disabled Enabled**[Default]**	Enable/Disable USB controller.
Onboard Audio Control	Disabled Enabled Auto**[Default]**	Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled Enabled = Azalia will be unconditionally enabled Auto = Azalia will be enabled if present, disabled otherwise.
Intel HDMI codec Port C	Disabled Enabled**[Default]**	Enable or disable internal HDMI codec Port for Azalia.

3.6.2.3 USB Legacy Features

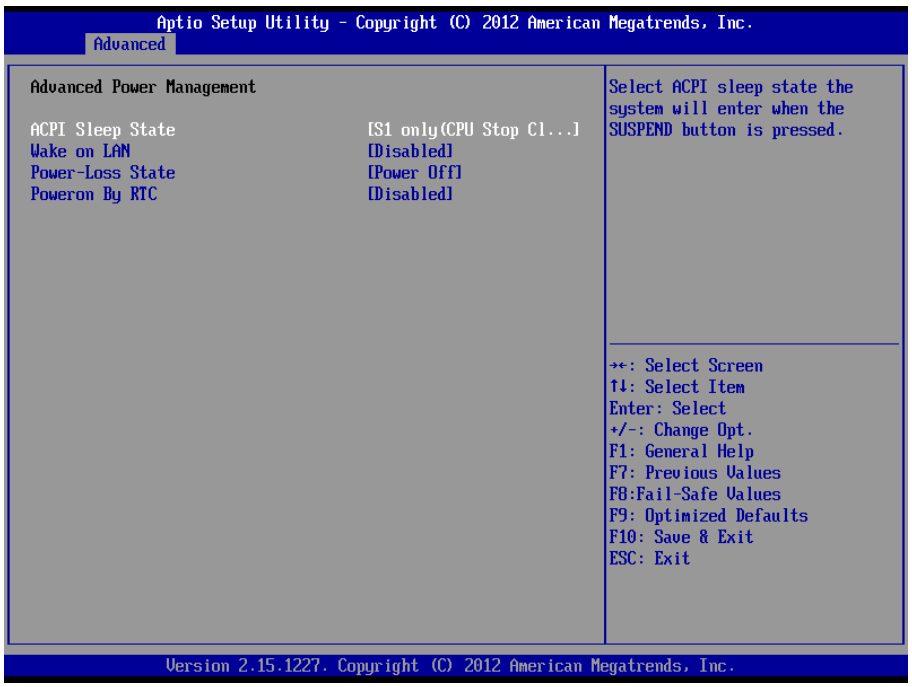


Item	Options	Description
Legacy USB Support	Enabled**[Default]** Disabled Auto	Enables Legacy USB support, AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
EHCI Hand-off	Disabled**[Default]** Enabled	This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Port 60/64 Emulation	Disabled Enabled**[Default]**	Enables I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.
USB transfer time-out	1 sec 5 sec 10 sec 20 sec**[Default]**	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec**[Default]** 30 sec 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	Auto**[Default]** Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.
SanDisk Extreme 0001	Auto**[Default]** Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.

3.6.2.4 Inter® Rapid Start Technology



3.6.2.5 Advanced Power Management

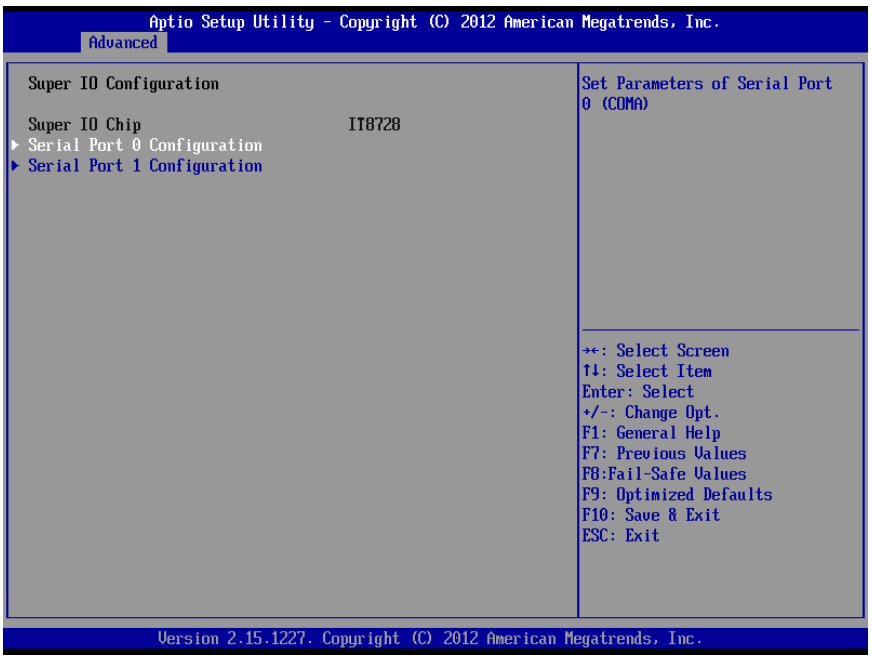


Item	Options	Description
ACPI Sleep State	Suspend Disabled S1 only(CPU Stop Clock)**[Default]** S3 only(Suspend to RAM)	Select ACPI sleep state the system will enter when the SUSPEND button is pressed.

Wake on LAN	Disabled**[Default]** Enabled	Enable system to wake from S5 using LAN wake event.
Power-Loss State	Power Off**[Default]** Power On Keep Last State	Specify what state to go to when power is re-applied after a power failure.
Poweron By RTC	Disabled**[Default]** Enabled	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified.

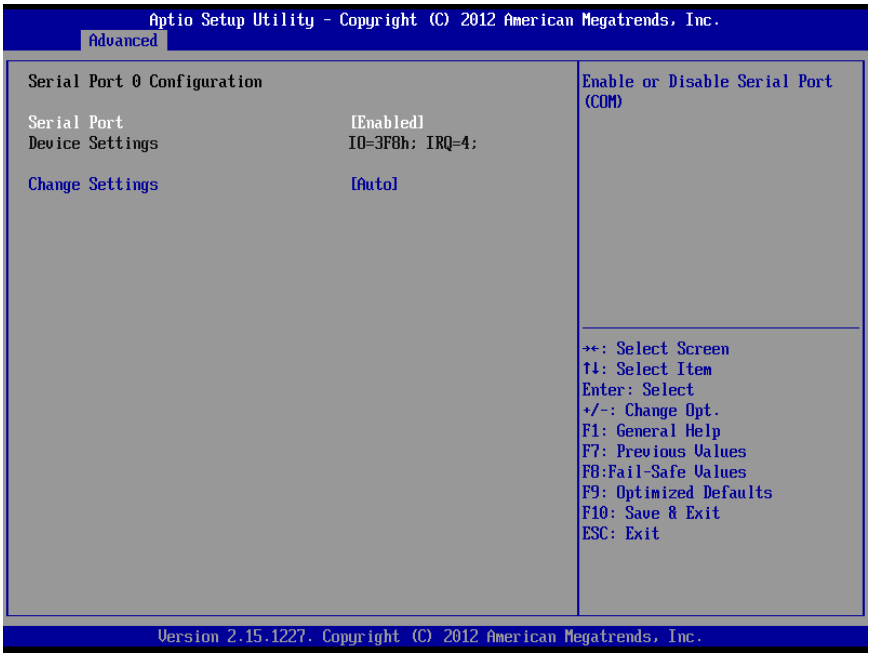
3.6.2.6 Super IO Configuration

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



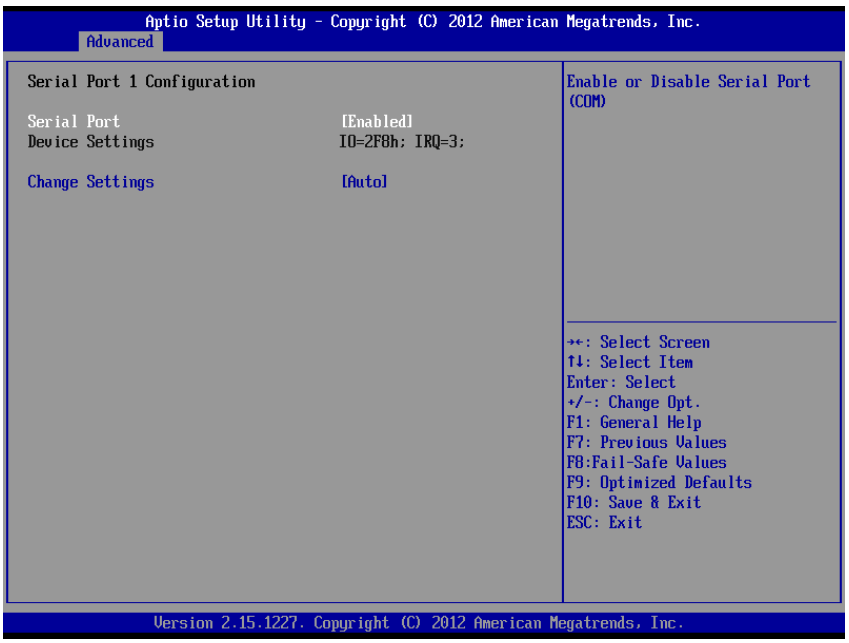
Item	Description
Serial Port 0 Configuration	Set Parameters of Serial Port 0 (COMA).
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMB).

3.6.2.6.1 Serial Port 0 Configuration



Item	Option	Description
Serial Port	Disabled Enabled**[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; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Select an optimal setting for Super IO device.

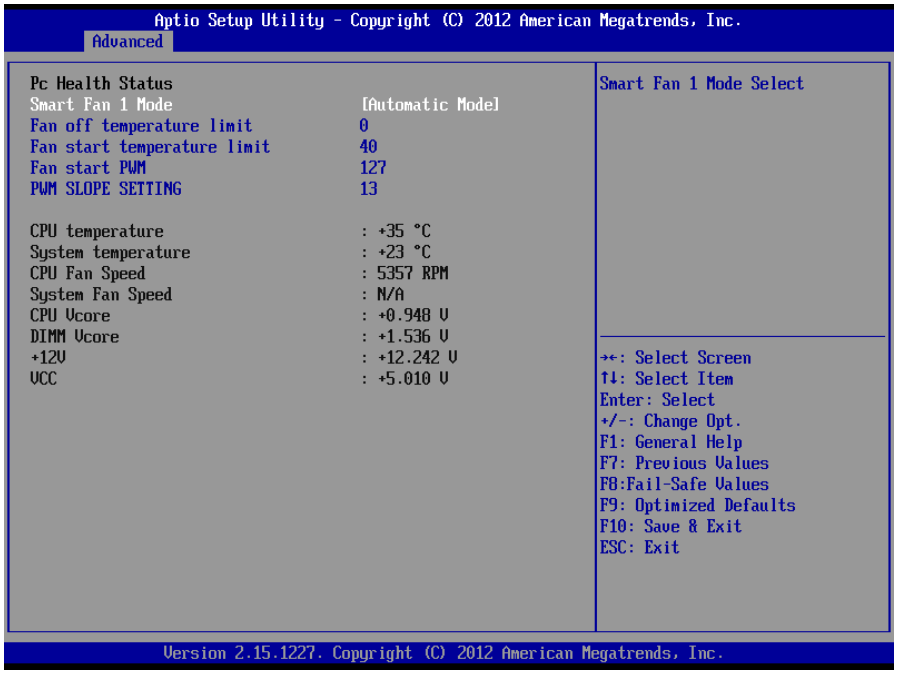
3.6.2.6.2 Serial Port 1 Configuration



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

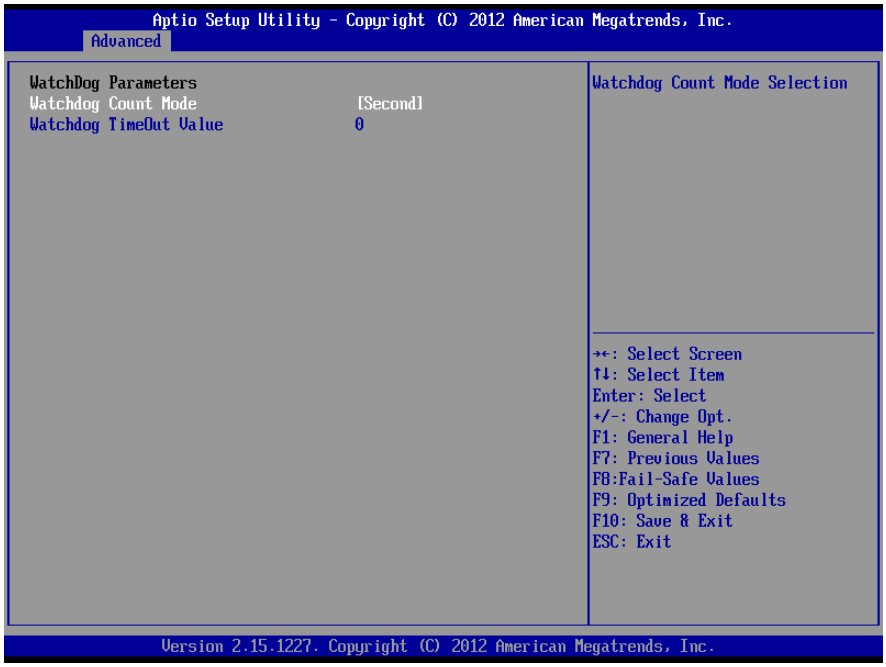
3.6.2.7 HW Monitor

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



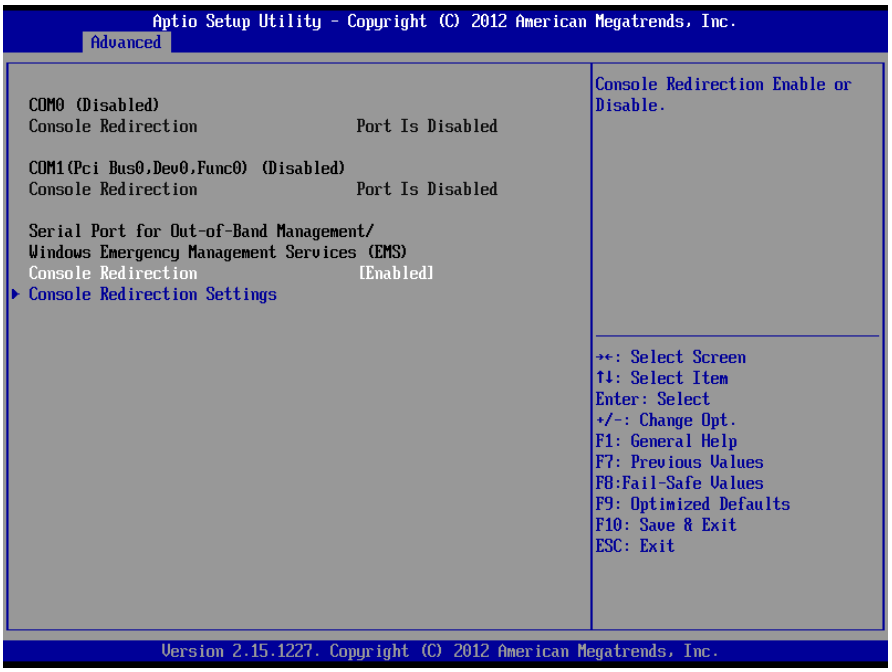
Item	Options	Description
Smart Fan 1 Mode	Full on Mode Automatic Mode**[Default]**	Smart Fan 1 Mode Select.
Fan off temperature limit	0-127	Fan will off when temperature lower than this limit. [0-127]
Fan start temperature limit	0-127	Fan will work when temperature higher than this limit. [0-127]
Fan start PWM	0-255	Fan will stat with this PWM value. [0-255]
PWM SLOPE SETTING	0-127	PWM SLOPE Value. [0-127]

3.6.2.8 Watchdog Configuration



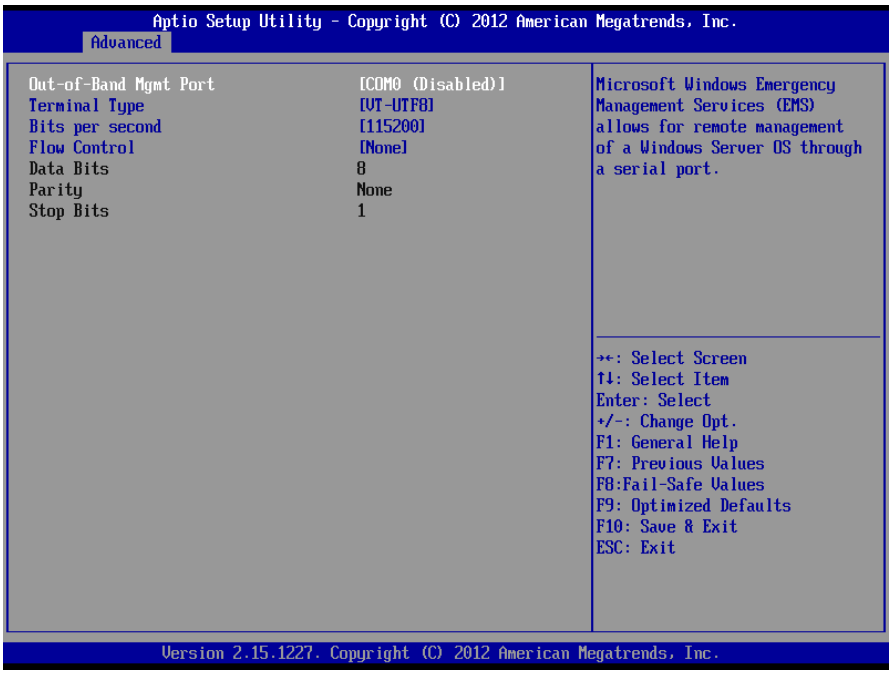
Item	Options	Description
Watchdog Count Mode	Second**[Default]** Minute	Watchdog Count Mode Selection.
Watchdog TimeOut Value	0 to 255	Set Watchdog time, from 0 to 255.

3.6.2.9 Serial Port Console Redirection



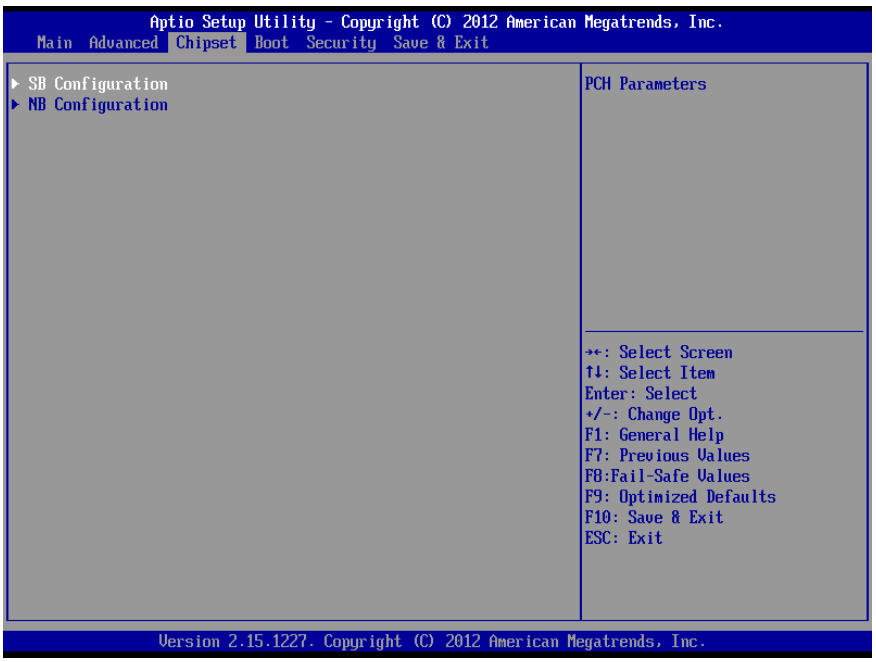
Item	Options	Description
Console Redirection	Disabled Enabled**[Default]**	Console Redirection Enable or Disable.
Console Redirection Settings	The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.	

3.6.2.9.1 Console Redirection Settings



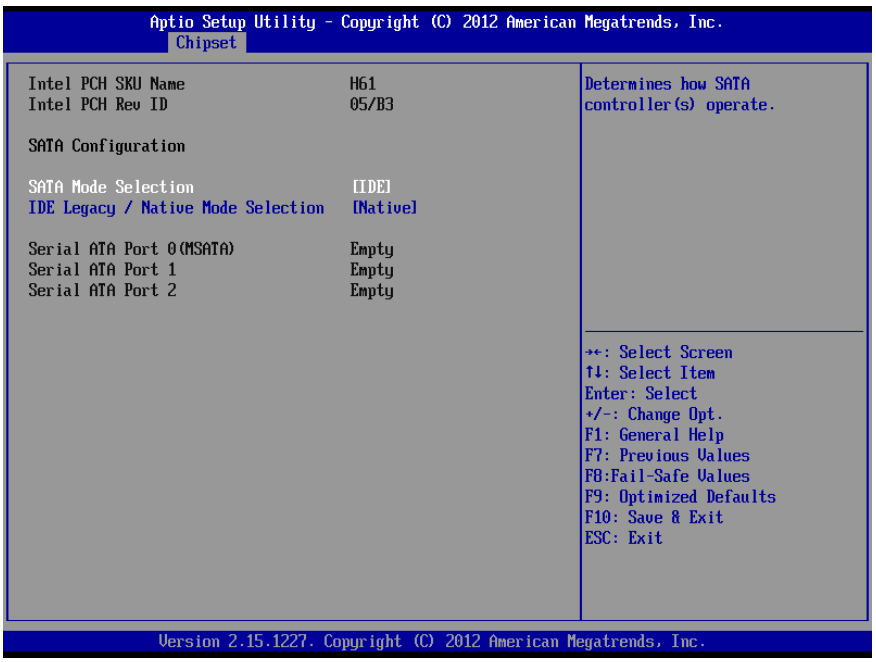
Item	Options	Description
Out-of-Band Mgmt Port	COM0**[Default]**	Microsoft Windows Emergency Management. Services (EMS) allows for remote management of a Windows Server OS through a serial port.
Terminal Type	VT100 VT100+ VT-UTF8**[Default]** ANSI	VT-UTF8 is the preferred terminal type for out-of-band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

3.6.3 Chipset



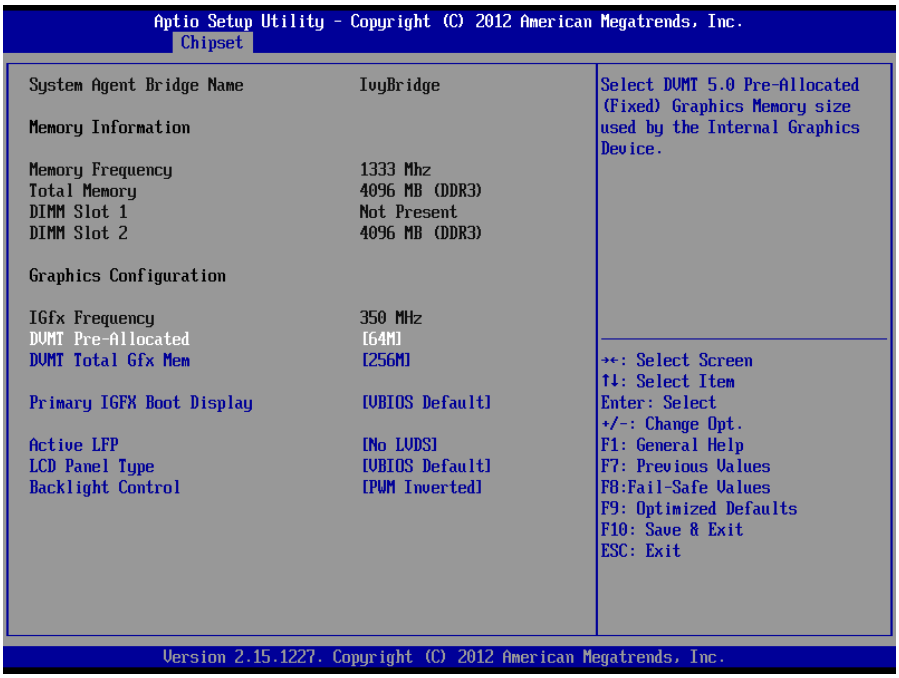
Item	Description
SB Configuration	PCH Parameters.
NB Configuration	NB Parameters.

3.6.3.1 SB Configuration



Item	Options	Description
SATA Mode Selection	IDE**[Default]** AHCI	Determines how SATA controller(s) operate.
IDE Legacy / Native Mode Selection	Native**[Default]** Legacy	IDE Legacy / Native Mode Selection.

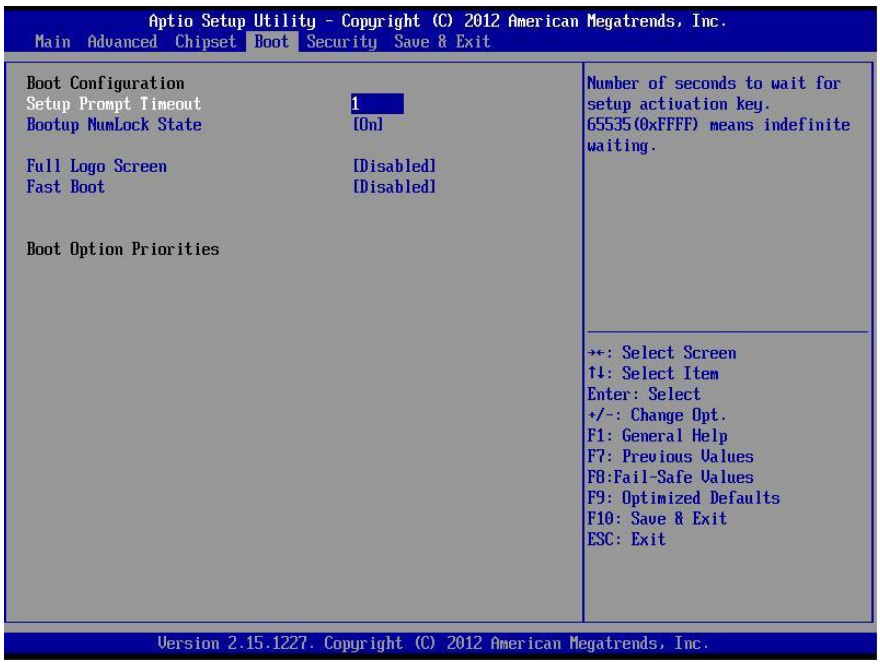
3.6.3.2 NB Configuration



Item	Options	Description
DVMT Pre-Allocated	32M/64M**[Default]**/96M/128M/160M/192M/224M/256M/288M/320M/352M/384M/416M/448M/480M/512M/1024M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
DVMT Total Gfx Mem	128M/256M**[Default]**/MAX	Select DVMT 5.0 Total Graphics Memory size used by the Internal Graphics Device.
Primary IGFX Boot Display	VBIOS Default**[Default]** CRT None Use LVDS None Use HDMI None Use	Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.
Active LFP	No LVDS**[Default]** eDP Port-D	Select the Active LFP Configuration. No LVDS:VBIOS does not enable LVDS. eDP Port-D:LFP Driven by Int-DisplayPort encoder from Port-D(through PCH).
LCD Panel Type	VBIOS Default**[Default]** 640x480 18/1 800x600 18/1 1024x768 18/1 1280x1024 24/2 1400x1050 24/1	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item. (VBIOS Default: 1024x768)

	1400x1050 24/2 1600x1200 24/2 1366x768 24/1 1680x1050 24/2 1920x1200 24/2 1440x900 18/2 1600x900 24/2 1024x768 24/1 1280x800 18/1 1920x1080 24/2 2048x1536 24/2	
Backlight Control	PWM Inverted**[Default]** PWM Normal	Back Light Control Setting.

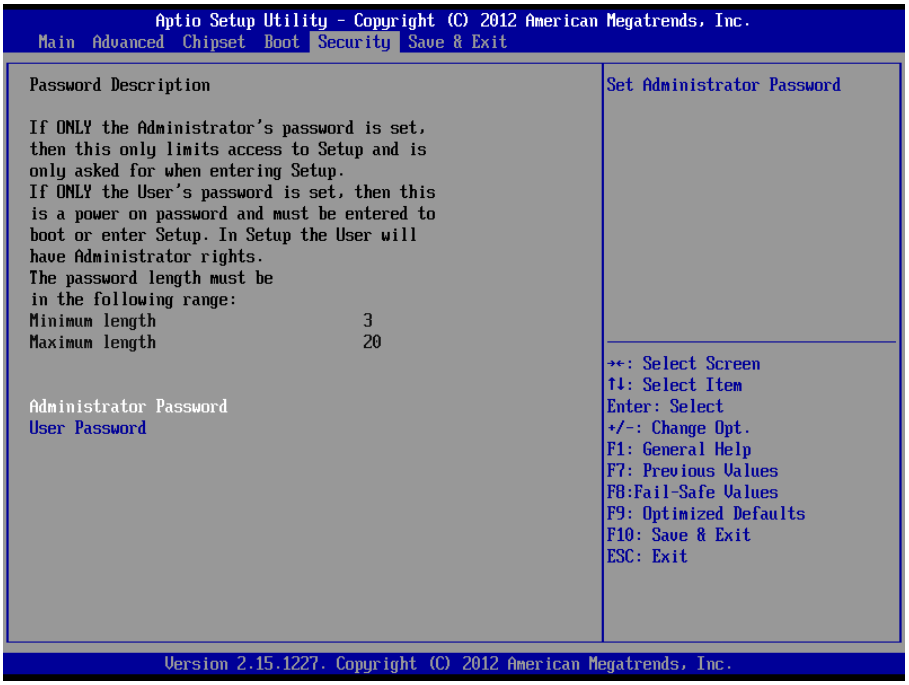
3.6.4 Boot settings



Item	Option	Description
Setup Prompt Timeout	1~65535	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	On**[Default]** Off	Select the keyboard NumLock state.
Full Logo Screen	Disabled**[Default]** Enabled	Enables or disables Full Logo Screen option.
Fast Boot	Disabled**[Default]** Enabled	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
Boot Option #1	Sets the system boot order.	

3.6.5 Security

Use the Security menu to set system and user password.



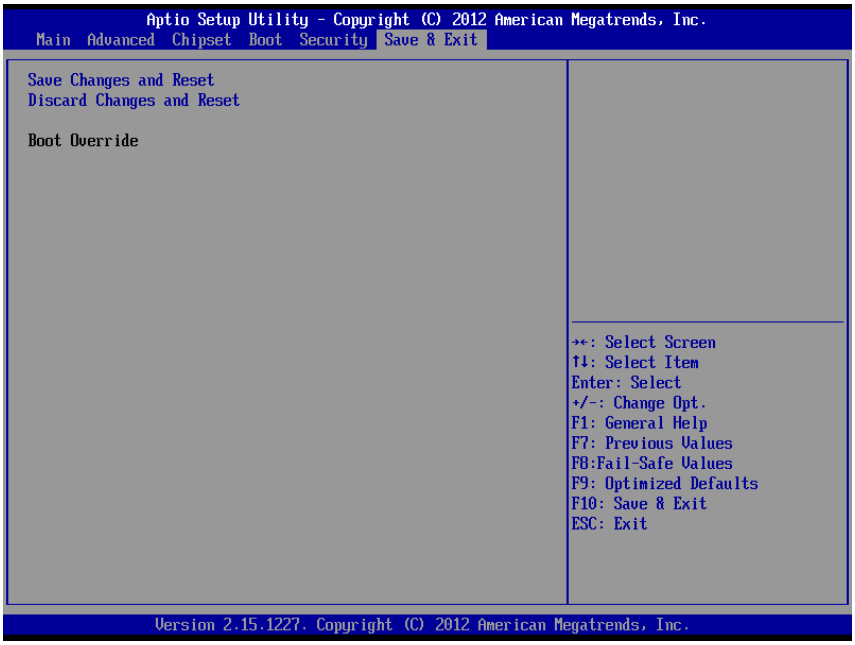
3.6.5.1 Administrator Password

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

3.6.5.2 User Password

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

3.6.6 Save & Exit



3.6.6.1 Save Changes and Reset

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

3.6.6.2 Discard Changes and Reset

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The setup program then exits and reboots the controller.

4. Drivers Installation

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

4.1 Install Chipset Driver

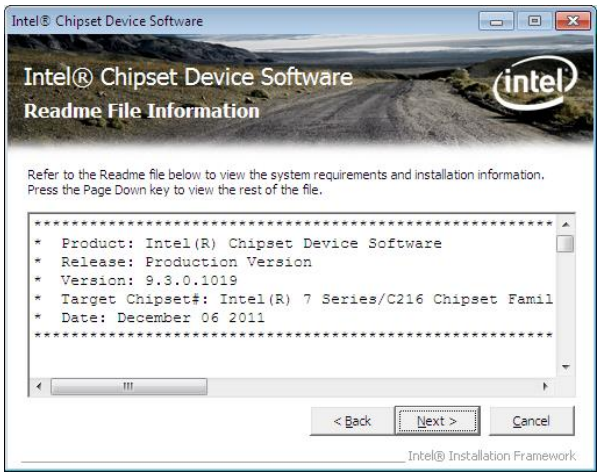
Insert the Supporting DVD-ROM to DVD-ROM drive, click on "start" icon and it should show the index page of Avalue's products automatically. If not, locate the folder HTML and choose the product from the targeted folder.

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

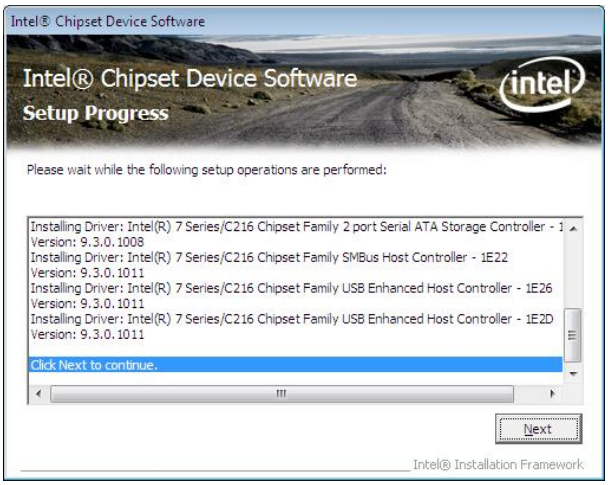
Step 1. Locate 「\Driver_Chipset\Intel\EMX-H61B_Chipset」.

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 **Next** to continue installation.Select **Finish** to complete Installation.

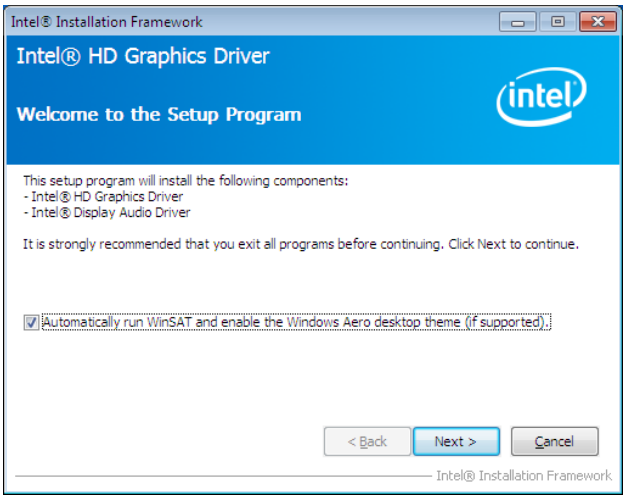
Step 6. Select **Finish** to complete Installation.

4.2 Install VGA Driver

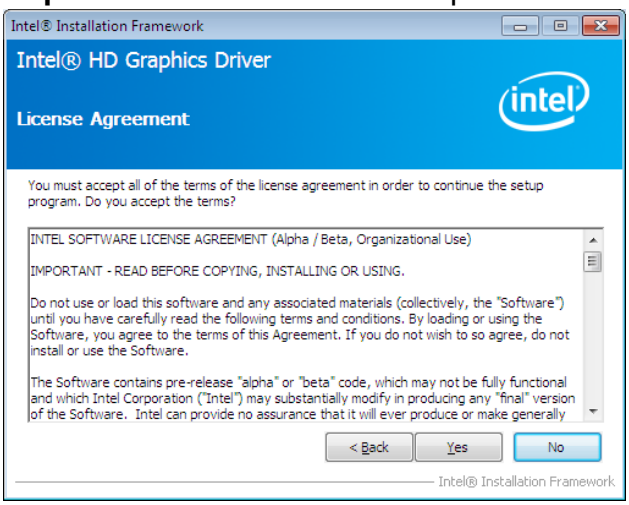
Insert the Supporting DVD-ROM to DVD-ROM drive, click on "start" icon and it should show the index page of Avalue's products automatically. If not, locate the folder HTML and choose the product from the targeted folder.

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

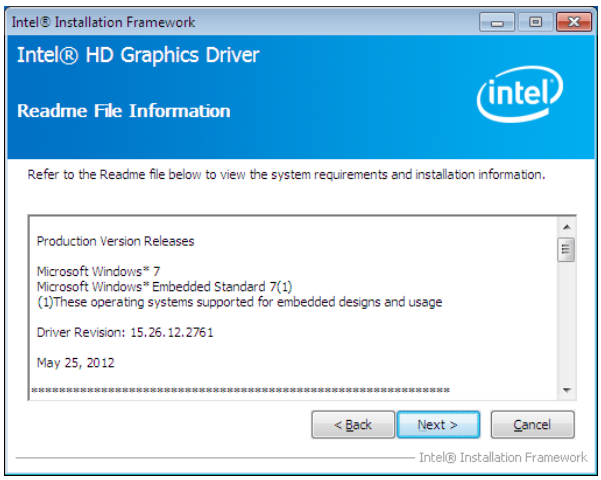
Step 1. Locate 「\VGA\EMX-H61B_VGA」.



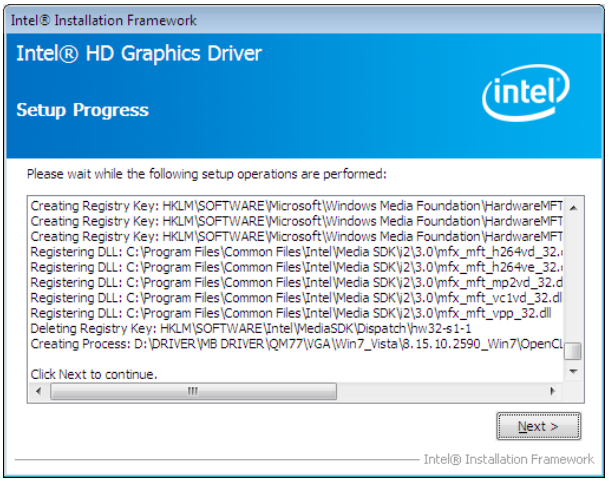
Step 2. Select **Next** to start setup.



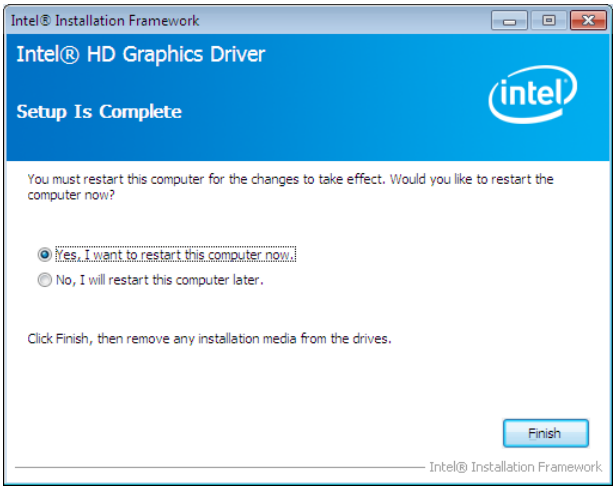
Step 3. Select **Yes** to the next step.



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



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

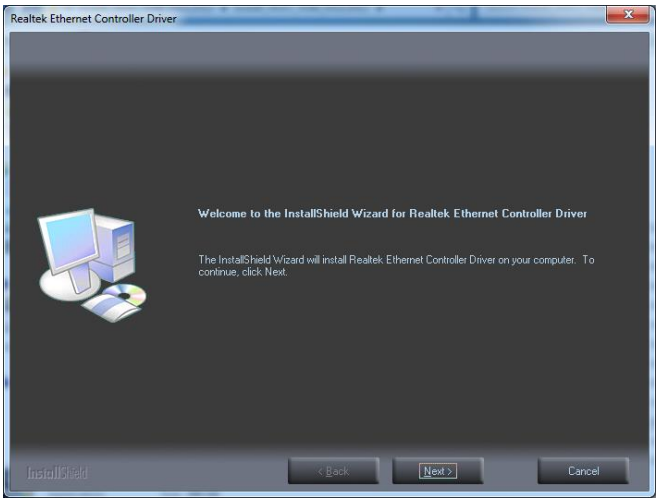


Step 6. Select **Finish** to complete installation.

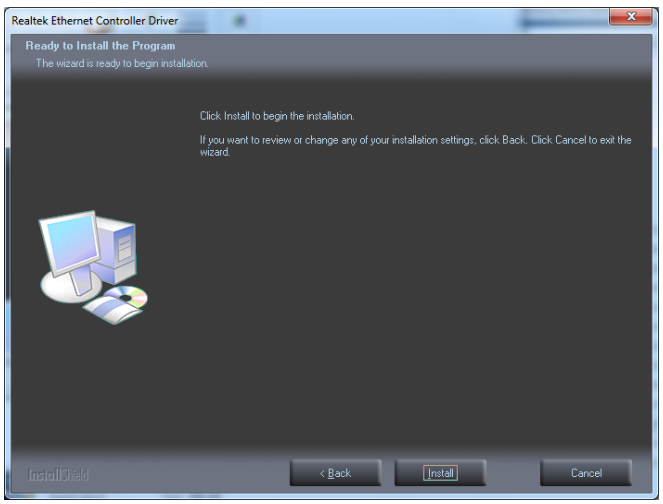
4.3 Install LAN Driver (For Realtek 8111E Gigabit Ethernet)

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_Gigabit\Realtek\RTL8111E\EMX-H61B_LAN.

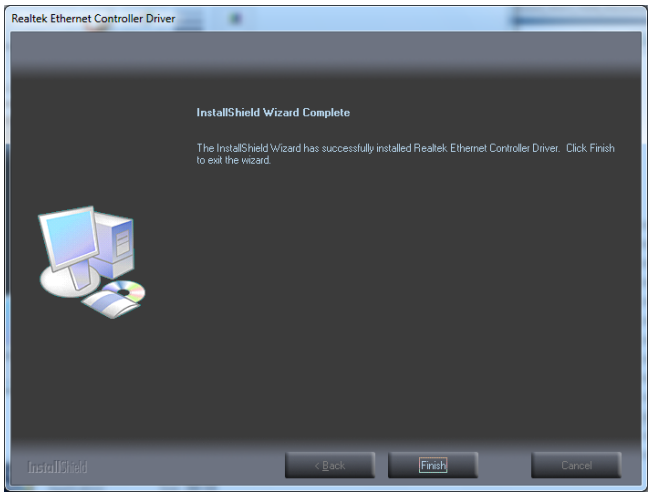
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



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



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



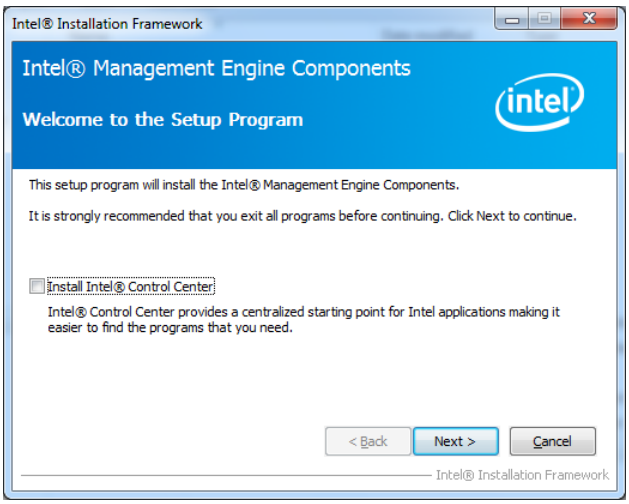
Step 3. Click **Finish** to complete setup.

4.4 Install ME Driver

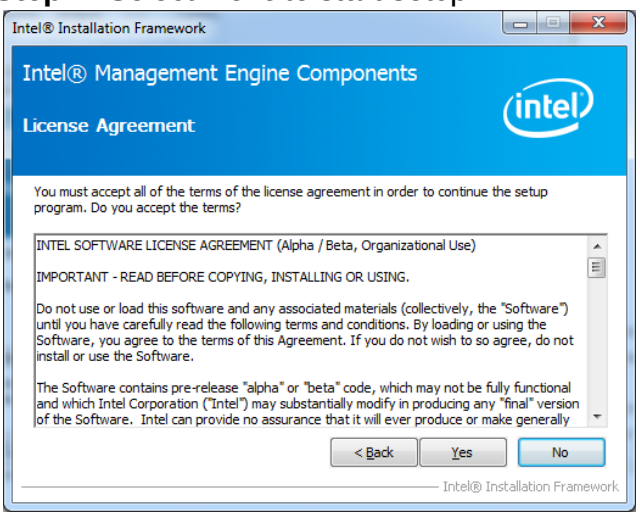
Insert the Supporting DVD-ROM to DVD-ROM drive, click on "start" icon and it should show the index page of Avalue's products automatically. If not, locate the folder HTML and choose the product from the targeted folder.

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

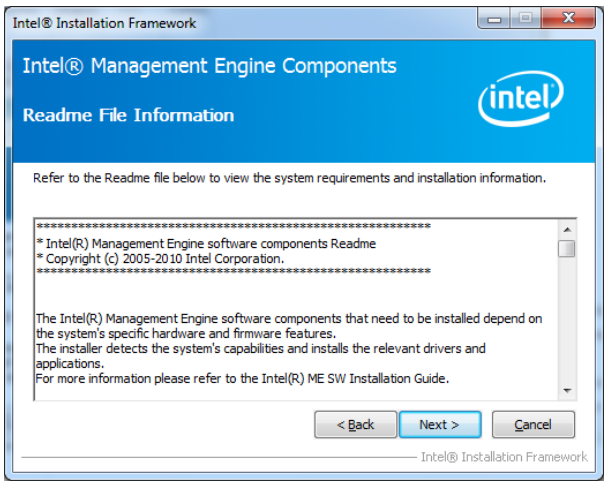
Step 1. Locate 「\Utility\EMX-H61B_ME_5M_Driver_Production」.



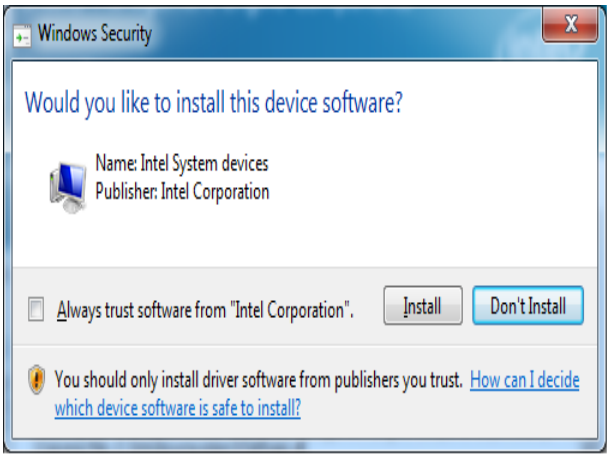
Step 2. Select **Next** to start setup.



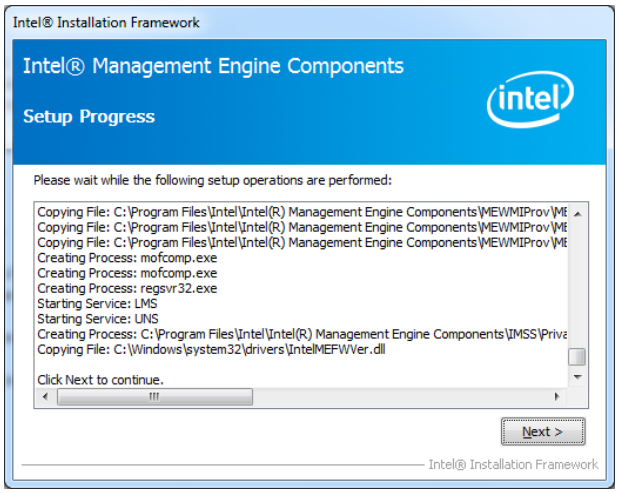
Step 3. Select **Yes** to the next step.



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



Step 5. Select **Install** to continue installation.



Step 6. Select **Next** to continue installation.

Step 7. Select **Finish** to complete installation

4.5 Install Audio Driver (For Realtek ALC661 HD Audio)

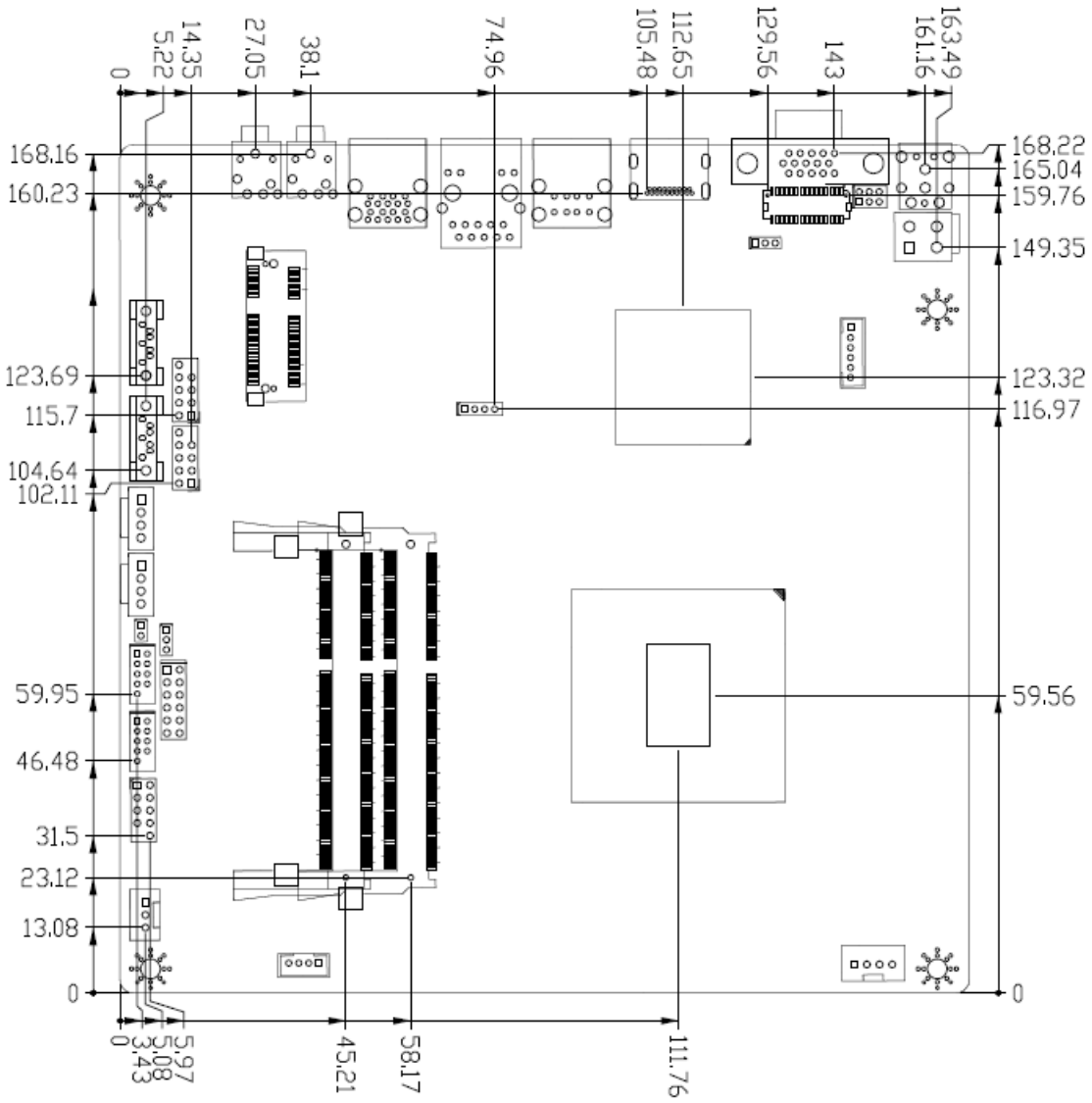
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Driver_Audio\EMX-H61B_Audio\R2.66

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

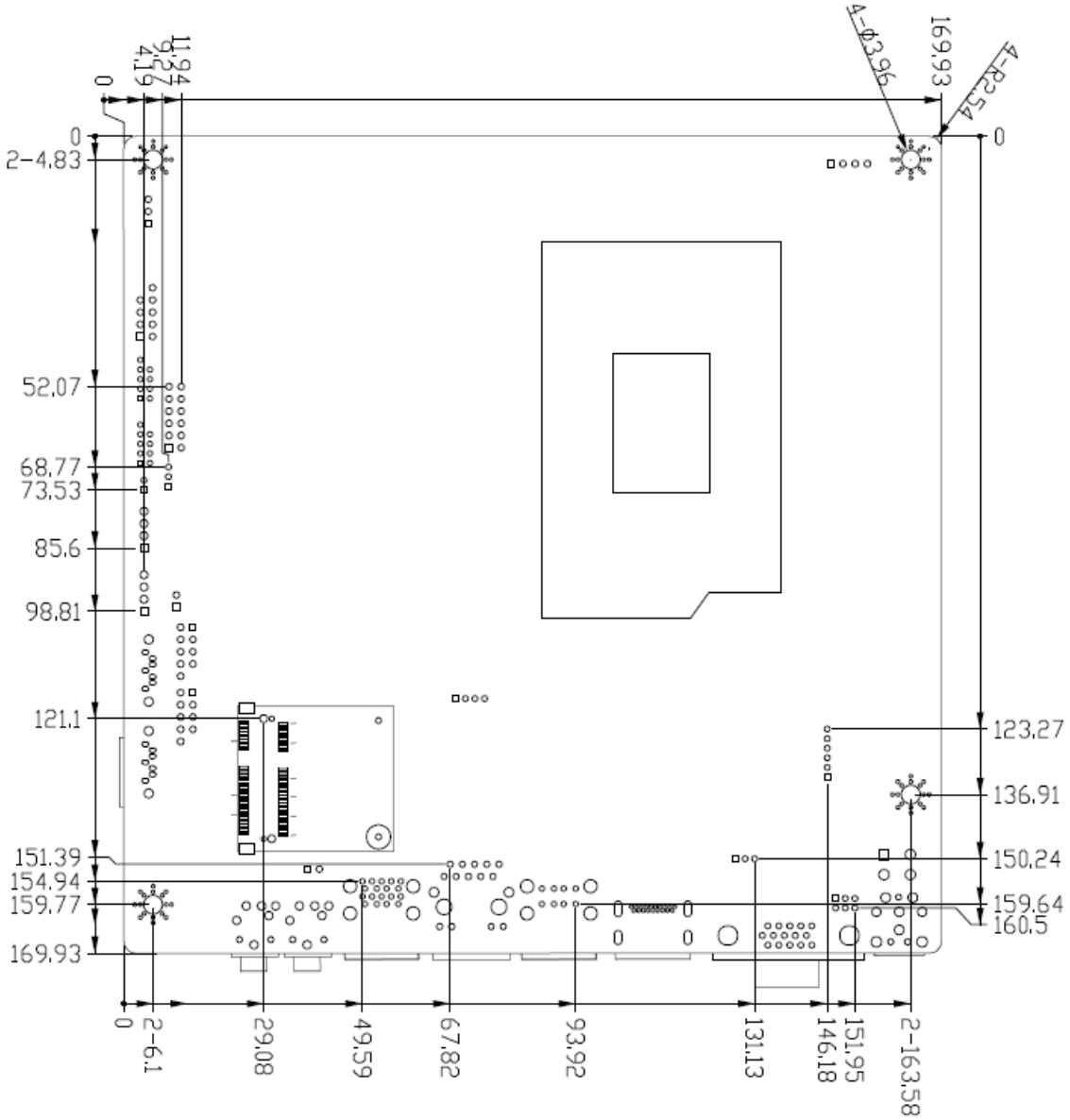
Step1. Click **Next** to Install..

Step 2. Select **Finish** to complete Installation.

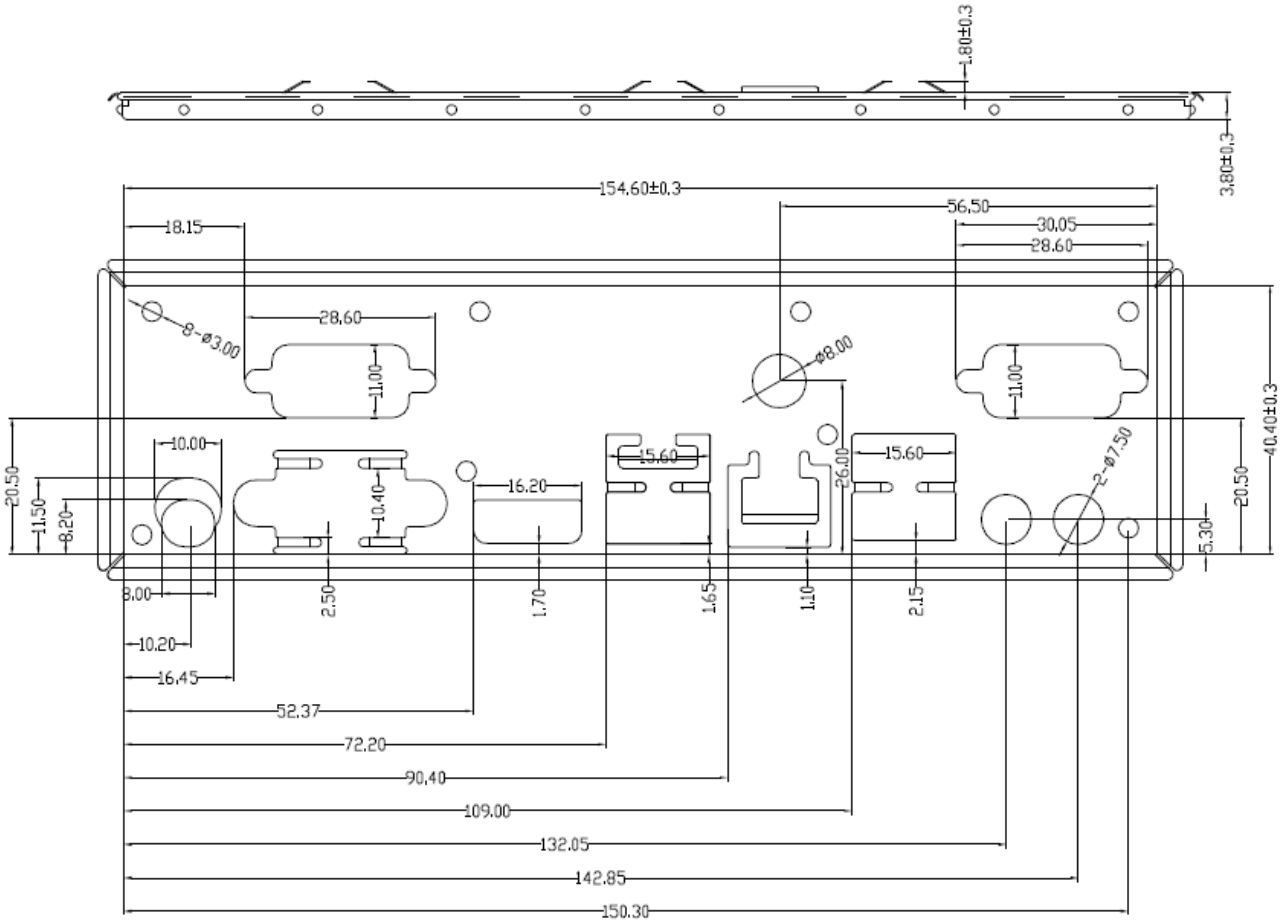
5. Mechanical Drawing


0
5.22
14.35
27.05
38.1
74.96
105.48
112.65
129.56
143
161.16
163.49
168.16
160.23
123.69
115.7
104.64
102.11
59.95
46.48
31.5
23.12
13.08
0
168.22
165.04
159.76
149.35
123.32
116.97
59.56
0
0
3.43
5.08
5.97
45.21
58.17
111.76

Unit: mm


4-Ø3.96
169.93
4-R2.54
0
11.94
9.27
4.19
0
2-4.83
52.07
68.77
73.53
85.6
98.81
121.1
151.39
154.94
159.77
169.93
0
123.27
136.91
150.24
159.64
160.5
0
2-6.1
29.08
49.59
67.82
93.92
131.13
146.18
151.95
2-163.58

Unit: mm


1.80±0.3
3.80±0.3
154.60±0.3
56.50
30.05
28.60
18.15
28.60
8-Ø3.00
11.00
Ø8.00
11.00
40.40±0.3
10.00
15.60
26.00
15.60
2-Ø7.50
20.50
11.50
8.20
10.40
16.20
20.50
5.30
8.00
2.50
1.70
1.65
1.10
2.15
10.20
16.45
52.37
72.20
90.40
109.00
132.05
142.85
150.30

Unit: mm