

EMX-B75

Intel® Core™ i7/ i5/ i3/ Pentium®/ Celeron® Mini ITX
Motherboard with Intel® B75 Chipset

User's Manual



4th Ed – 13 September 2013

Content

1. Getting Started.....	5
1.1 Safety Precautions.....	5
1.2 Packing List	5
1.3 Document Amendment History.....	6
1.4 Manual Objectives.....	7
1.5 Specifications	8
1.6 Architecture Overview—Block Diagram.....	11
2. Hardware Configuration.....	12
2.1 Product Overview	13
2.2 Installation Procedure.....	14
2.3 Jumper and Connector List	15
2.4 Setting Jumpers & Connectors.....	17
2.4.1 mSATA/Mini PCIe function Jumper (JS1/JS2)	17
2.4.2 Clear CMOS (JBAT)	17
2.4.3 ME update (JME).....	18
2.4.4 Serial port 1/3/4/5/6 – Normal, 5V, 12V PIN 9 selector (JC11/31/41/51/61).....	18
2.4.5 Serial port 2 in RS-422-485 mode (JRS_1)	19
2.4.6 Serial port 10 in RS-422-485 mode (JRS_2)	19
2.4.7 PS/2 keyboard & mouse connector (JKB_MS).....	20
2.4.8 Keyboard power select jumper (JKB)	21
2.4.9 DDR3L using (JDIMM)	21
2.4.10 General Purpose I/O (JGPIO1)	22
2.4.11 VGA connector (JVGA1)	22
2.4.12 Serial port 4~9 connector (COM4~9).....	23
2.4.13 Serial port 2/10 connector (COM2/10).....	23
2.4.14 System Fan connector (SFAN1).....	24
2.4.15 CPU Fan connector (CFAN1).....	24
2.4.16 Printer (JLPT)	25
2.4.17 USB Connector 1/2 - USB2.0 (FUSB1/2)	25
2.4.18 USB Connector 3 - USB3.0 (F_USB3)	26
2.4.19 Front Panel Switches (FPANEL)	26
2.4.20 Sony/Philips Digital Interface (JSPDIF1)	27
2.4.21 Power connector (PWR12V)	27
2.4.22 ATX Power Input Connector (ATXPWR1)	28
2.4.23 Front Panel Audio Connection Header (F_AUDIO)	28

EMX-B75 User's Manual

3.BIOS Setup	29
3.1 Introduction.....	30
3.2 Starting Setup.....	30
3.3 Using Setup.....	31
3.4 Getting Help	32
3.5 In Case of Problems.....	32
3.6 BIOS setup.....	33
3.6.1 Main Menu.....	33
3.6.1.1 System Language	33
3.6.1.2 System Date	33
3.6.1.3 System Time	33
3.6.2 Advanced BIOS settings.....	34
3.6.2.1 ACPI Settings	34
3.6.2.2 CPU Configuration	35
3.6.2.3 PowerManagement Configuration.....	36
3.6.2.4 Onboard Device Configuration.....	37
3.6.2.5 SATA Configuration	38
3.6.2.6 USB Configuration	39
3.6.2.7 F81216 Super IO Configuration	40
3.6.2.8 NCT6106D Super IO Configuration	43
3.6.2.9 HW Monitor	49
3.6.2.10 WatchDog Parameters.....	49
3.6.3 Chipset	50
3.6.3.1 Host bridge	50
3.6.4 Boot settings.....	52
3.6.5 Security	53
3.6.5.1 Administrator Password	53
3.6.5.2 User Password.....	53
3.6.6 Save & Exit.....	54
3.6.6.1 Save Changes and Exit	54
3.6.6.2 Discard Changes and Exit	55
3.6.6.3 Save Changes and Reset	55
3.6.6.4 Discard Changes and Reset	55
3.6.6.5 Save Changes	55
3.6.6.6 Discard Changes	55
3.6.6.7 Restore Defaults	55
3.6.6.8 Save as User Defaults	55
3.6.6.9 Restore as User Defaults.....	55
4. Drivers Installation.....	56
4.1 Install Chipset Driver	57

EMX-B75 User’s Manual

4.2	Install VGA Driver	58
4.3	Install LAN Driver (For Realtek 8111E Gigabit Ethernet)	59
4.4	Install USB 3.0 Driver	60
4.5	Install MEI Driver	61
4.6	Install Audio Driver (For Realtek ALC661 HD Audio)	63
5.	Mechanical Drawing	64

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 Cable X 1
- IO Shield
- COM Cable X 1
- VGA Cable X 1
- Screw X 2
- Motherboard X 1

1.3 Document Amendment History

Revision	Date	By	Comment
1st	November 2012	Avalue	Initial Release
2 nd	January 2013	Avalue	Update Drivers Installation
3 rd	August 2013	Avalue	Update FPANEL Signal
4 th	September 2013	Avalue	Update Part Number

1.4 Manual Objectives

This manual describes in details Avalue Technology EMX-B75 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-B75 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	EMX-B75
Features	Intel Maho bay platform
	2 x 204-pin Dual-Channel DDR3/DDR3L(jumper selectable) 1333/1600 SODIMMs, up to 16 GB
	2 x Realtek Gigabit Ethernet
	DVI-D, HDMI, VGA
	5 x SATA II, 1 x Mini PCI-e, 2 x USB3.0, 8 x USB 2.0, 8 x RS232, 2 x RS422/485
	iAMT 8.0
System	
CPU	Intel Ivy Bridge Desktop LGA1155(Socket H2) (Max. TDP at 65W)
BIOS	AMI uEFI BIOS, 64Mbit SPI Flash ROM
System Chipset	Panther Point (Intel® B75 Chipset)
I/O Chip	Nuvoton NUT6106D Support 6 COMs Fintek F81216AD for 4 COMs
System Memory	2 x 204-pin DDR3/DDR3L(jumper selectable) DIMMs socket Data transfer rates 1333 MT/s and 1600MT/s 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
I/O	
Rear Side External I/O Connector	2 x RJ-45 / dual deck USB 2.0 connectors 1 x DVI-D 1 x HDMI 2 x DB-9 conn. COM1,COM3:RS232 w/ +5V&+12V supported 1 x two deck audio connector for Mic-In and Line-out 1 x KB/MS stack
Internal I/O Connector	Storage: - 5 x SATA II connectors - 1 x mSATA (Mini PCI-e jump switch, SATAIII)

EMX-B75 User's Manual

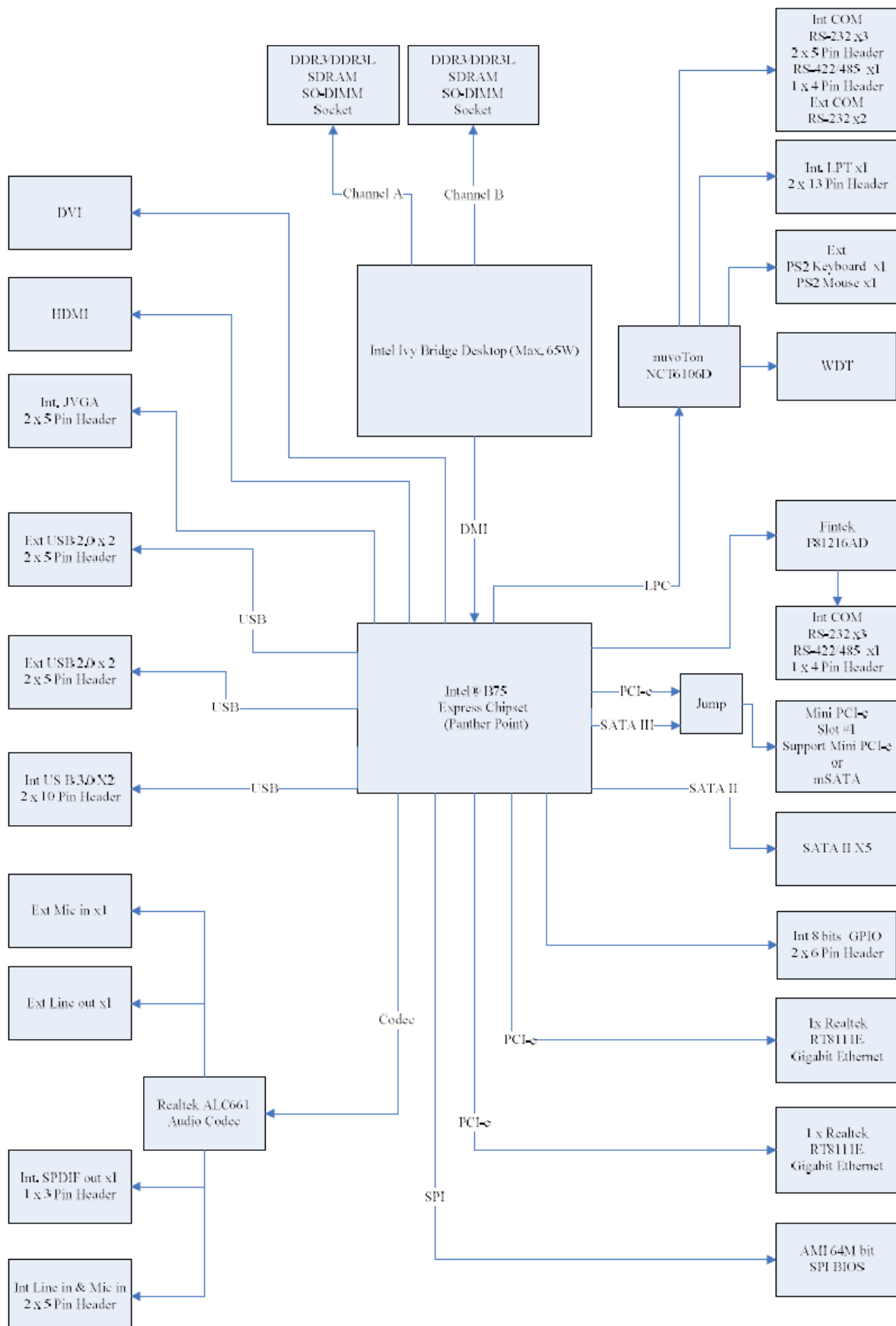
	COM: - COM2&COM10: RS-422/485 - COM4~9: support RS-232 connector, w/ +5V&+12V supported GPIO: 8 bits Audio: 1 x 2 x 5pin, pitch 2.54mm connector for front audio USB: USB2.0 - 2 x 2 x 5 pin, pitch 2.54mm connector USB3.0 - 1 x 2 x 10in, pitch 2.0mm 1 x 2 x 5 pin, pitch 2.54mm JVGA 1 x 2 x 13 pin, pitch 2.54mm connector for printer 1 x 4 pin CPU fan connector with smart fan function supported 1 x 3 pin System fan connector. 1 x 3 pin, pitch 2.54mm SPDIF 1 x horizontal type battery connector 1 x 2 x 8 pin, pitch 2.54mm connector for front panel 1 x 2 x 2 pin ATX power connector for DC +12V input 1 x 20 pin ATX power connector
Display	
Chipset	Intel B75 integrated
Resolution	3 display pipes supported - HDMI: 1080P - VGA: 1920x1200 - DVI-D: 1920x1200
Audio	
Chipset	Realtek ALC661 HD Audio Decoding Controller.
Audio Interface	Mic-In, Line-In
Ethernet	
Chipset	1 x Realtek RTL8111E PCI-Express Gigabit Ethernet 1 x Realtek RTL8111E PCI-Express Gigabit Ethernet
Ethernet Interface	10/100/1000 GbE LAN
Mechanical & Environmental	
Power Requirement	ATX
Power Type	ATX mode
ACPI	Single power ATX Support S0,S1, S3, S4, S5 ACPI 3.0 Compliant
Operating Temp.	0°C ~60°C

EMX-B75 User's Manual

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

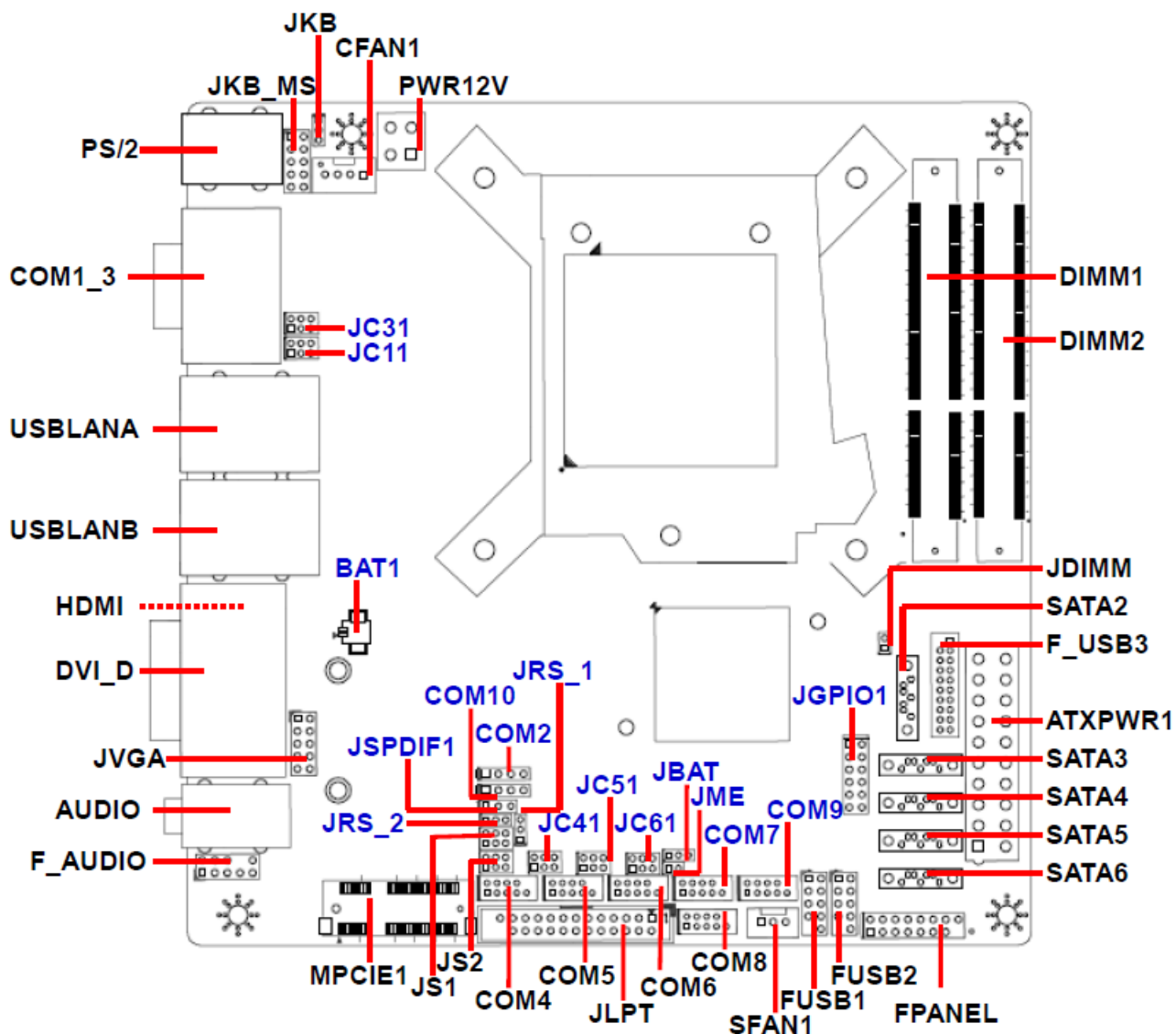
1.6 Architecture Overview—Block Diagram

The following block diagram shows the architecture and main components of EMX-B75.



2. Hardware Configuration

2.1 Product Overview



2.2 Installation Procedure

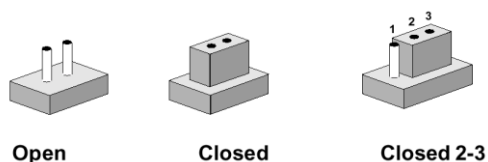
This chapter explains you the instructions of how to setup your system.

1. Turn off the power supply.
2. Insert the 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.

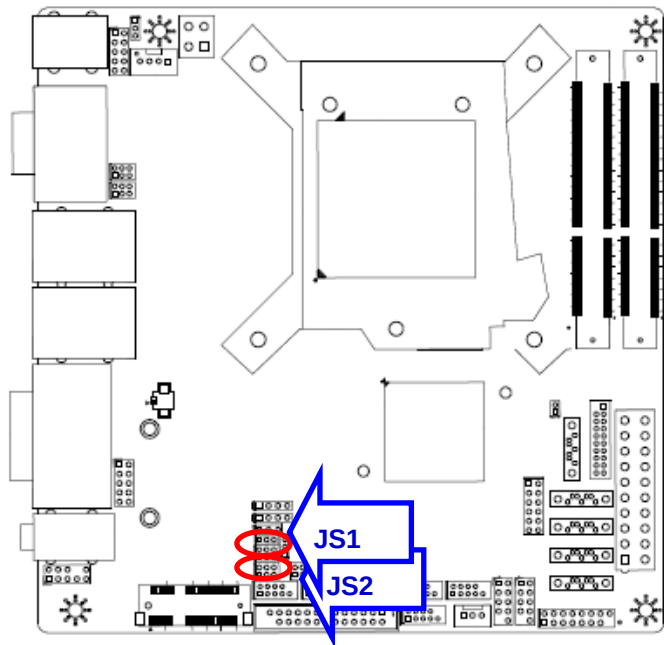
Jumpers

Label	Function	Note
JS1/JS2	mSATA/Mini PCIe function Jumper	3 x 1 header, pitch 2.00 mm
JBAT	Clear CMOS	3 x 1 header, pitch 2.00 mm
JME	ME update	2 x 1 header, pitch 2.00 mm
JC11/31/41/51/61	Serial port 1/3/4/5/6 – Normal, 5V,12V PIN 9 selector	3 x 2 header, pitch 2.00 mm
JRS_1	Serial port 2 in RS-422-485 mode	3 x 1 header, pitch 2.00 mm
JRS_2	Serial port 10 in RS-422-485 mode	3 x 1 header, pitch 2.00 mm
JKB_MS	PS/2 keyboard & mouse connector	5 x 2 header, pitch 2.54 mm
JKB	Keyboard power select jumper	3 x 1 header, pitch 2.00 mm
JDIMM	DDR3L using	2 x 1 header, pitch 2.00 mm

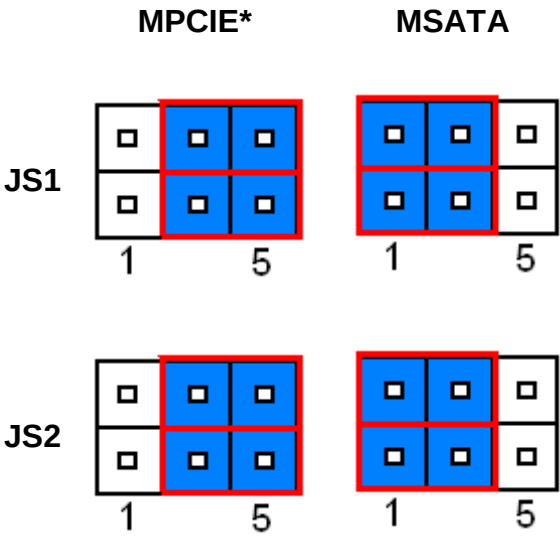
Connectors		
Label	Function	Note
ATXPWR1	ATX Power Input Connector	10 x 2 header, pitch 4.20 mm
PWR12V	Power connector	2 x 2 wafer, pitch 4.20 mm
FPANEL	Front Panel Switches	8 x 2 header, pitch 2.54 mm
JSPDIF1	Sony/Philips Digital Interface	3 x 1 header, pitch 2.54 mm
JLPT	Printer	2 x 13 header, pitch 2.54 mm
HDMI	HDMI connector	
DVI-D	DVI-D connector	
F_AUDIO	Front Panel Audio Connection Header	2 x 5 header, pitch 2.54 mm
AUDIO	Audio connector	
COM1_3	Serial port 1_3 connector	
COM2/10	Serial port 2/10 connector	4 x 1 header, pitch 2.54 mm
COM4~9	Serial port 4~9 connector	5 x 2 header, pitch 2.00 mm
JGPIO1	General Purpose I/O	6 x 2 header, pitch 2.54 mm
USBLANA/B	USB and RJ45LAN Connector A/B	
PS/2	Keyboard and Mouse	
F_USB1/2	USB Connector 1/2 - USB2.0	5 x 2 header, pitch 2.54 mm
F_USB3	USB Connector 3 - USB3.0	10 x 2 header, pitch 2.00 mm
SATA2~6	Serial ATA connector 2~6	
SFAN1	System Fan connector	3 x 1 wafer, pitch 2.54 mm
CFAN1	CPU Fan connector	4 x 1 wafer, pitch 2.54 mm
JVGA	VGA connector	5 x 2 header, pitch 2.54 mm
MPCIE1	Mini-PCIe	
DIMM1	DDR3 SODIMM connector1	
DIMM2	DDR3 SODIMM connector2	

2.4 Setting Jumpers & Connectors

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

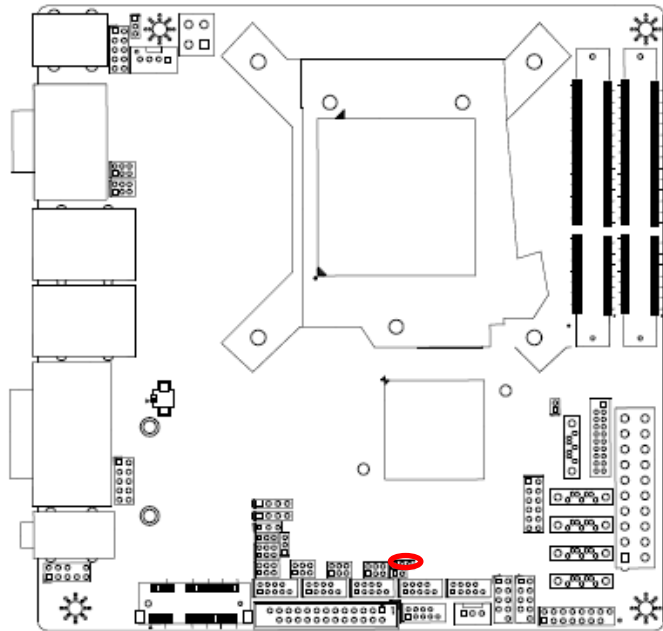


* Default

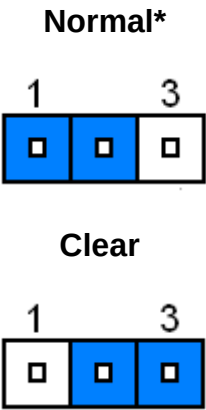


Pin	Pin	Define
1-3	2-4	M-SATA
3-5	4-6	MINIPCIE

2.4.2 Clear CMOS (JBAT)



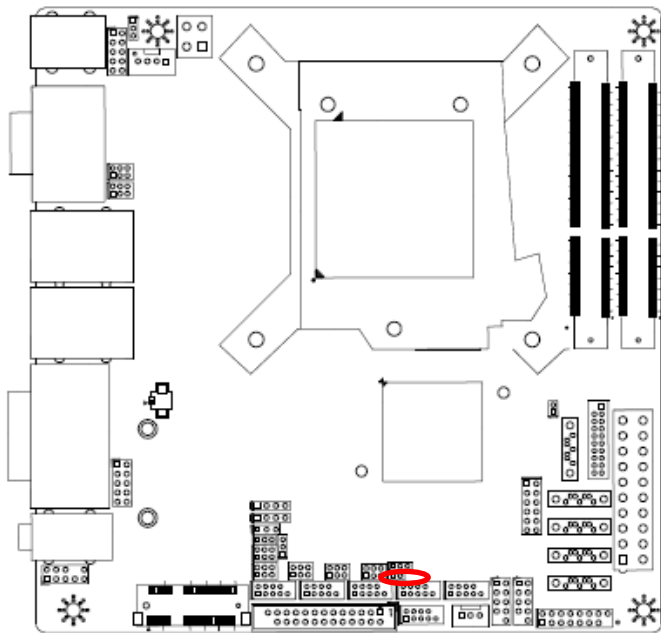
* Default



Pin	Define
1-2	Normal
2-3	Clear

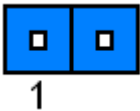
EMX-B75 User’s Manual

2.4.3 ME update (JME)

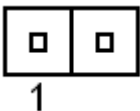


* Default

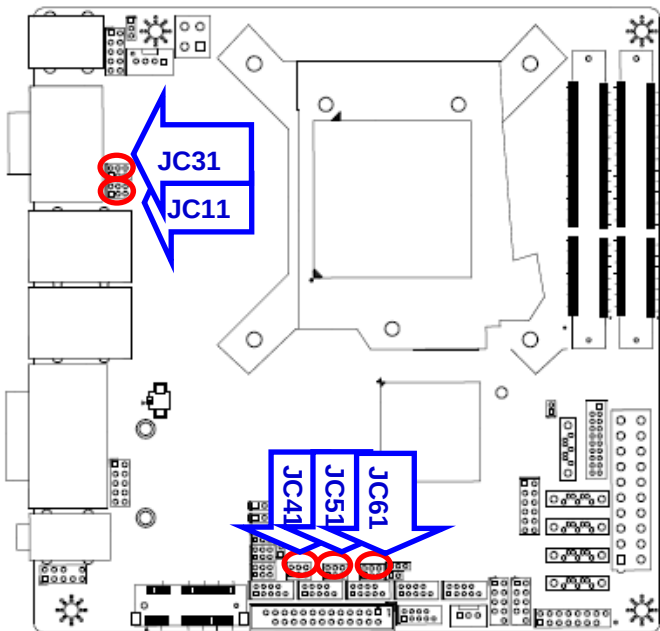
Refresh the ME*



Can't refresh the ME

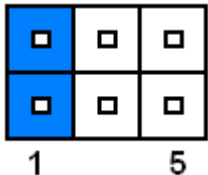


2.4.4 Serial port 1/3/4/5/6 – Normal, 5V, 12V PIN 9 selector (JC11/31/41/51/61)

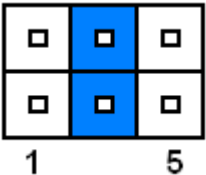


* Default

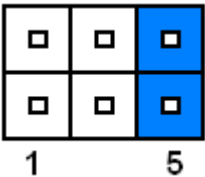
Normal*



5V

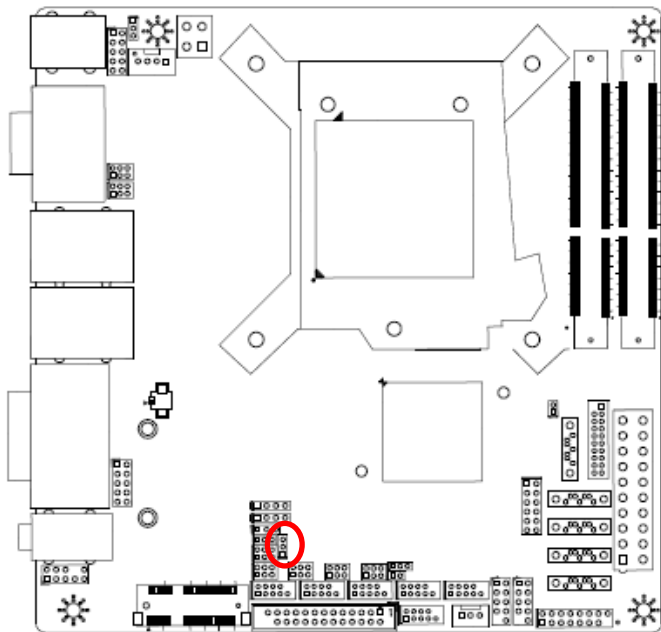


12V



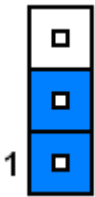
PIN	Define
1-2	Normal
3-4	5V
5-6	12V

2.4.5 Serial port 2 in RS-422-485 mode (JRS_1)

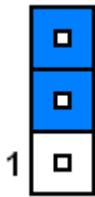


* Default

RS422*

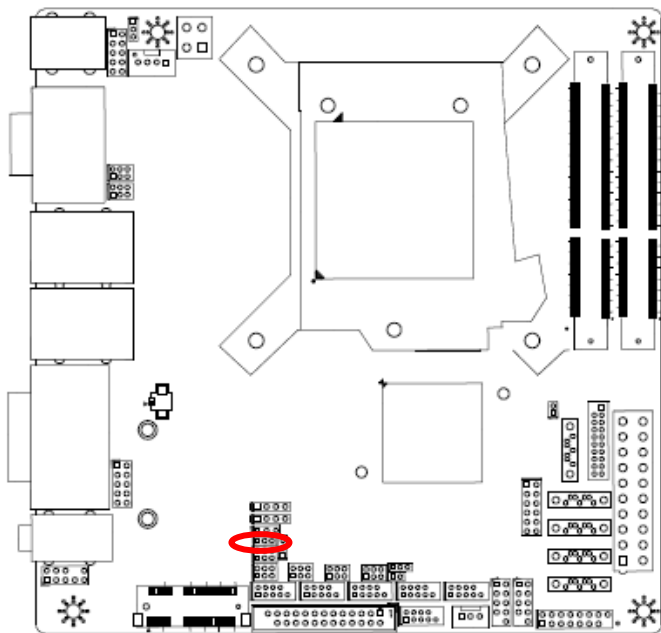


RS485



Pin	Define
1-2	RS422
2-3	RS485

2.4.6 Serial port 10 in RS-422-485 mode (JRS_2)

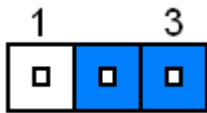


* Default

RS422*

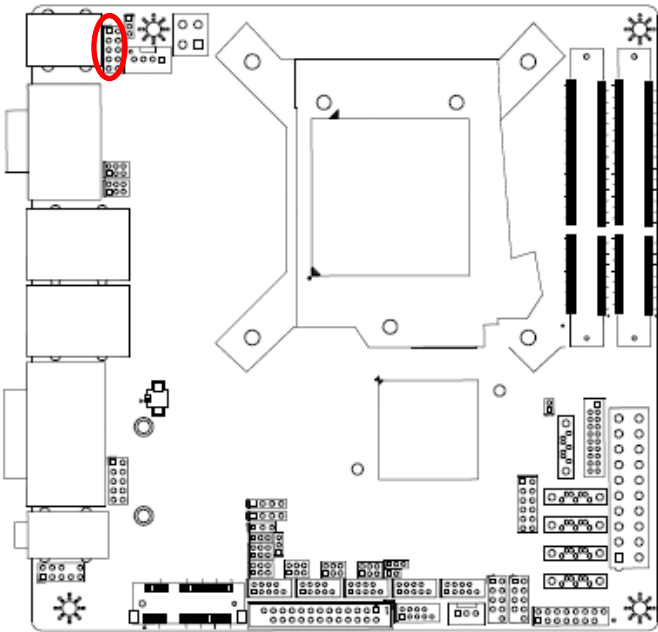


RS485

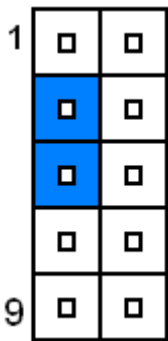


Pin	Define
1-2	RS422
2-3	RS485

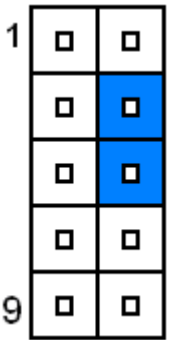
2.4.7 PS/2 keyboard & mouse connector (JKB_MS)



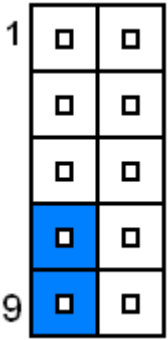
KBCLK



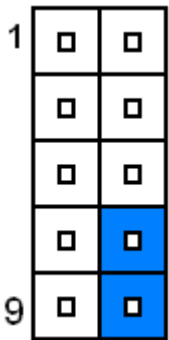
KBDATA



MSCLK



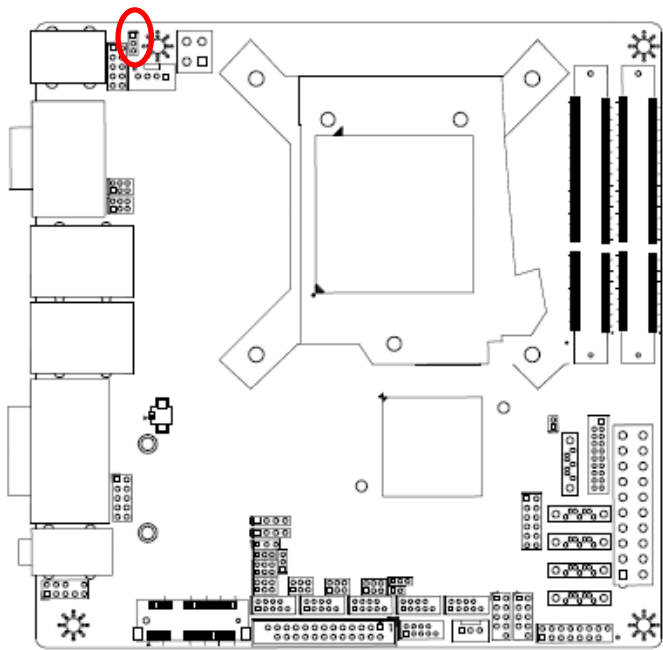
MSDATA



PIN	Define	PIN	Define
1	VCC5V	2	GND
3	KBCLK-	4	KBDATA-
5	KBCLK+	6	KBDATA+
7	MSCLK-	8	MSDATA-
9	MSCLK+	10	MSDATA+

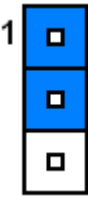
EMX-B75 User's Manual

2.4.8 Keyboard power select jumper (JKB)

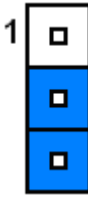


* Default

5V*

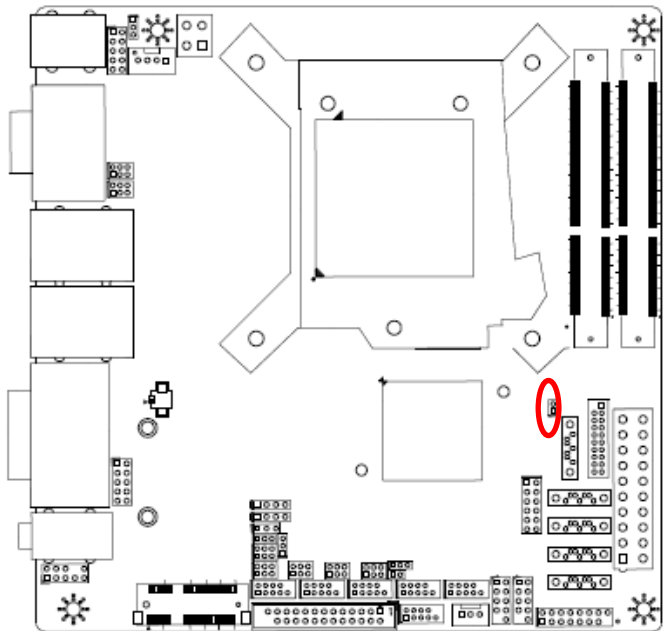


5VSB



Pin	Define
1-2	5V
2-3	5VSB

2.4.9 DDR3L using (JDIMM)



* Default

DDR3*

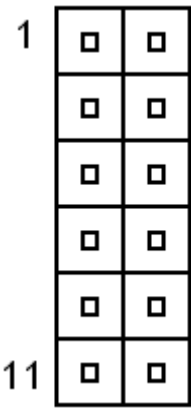
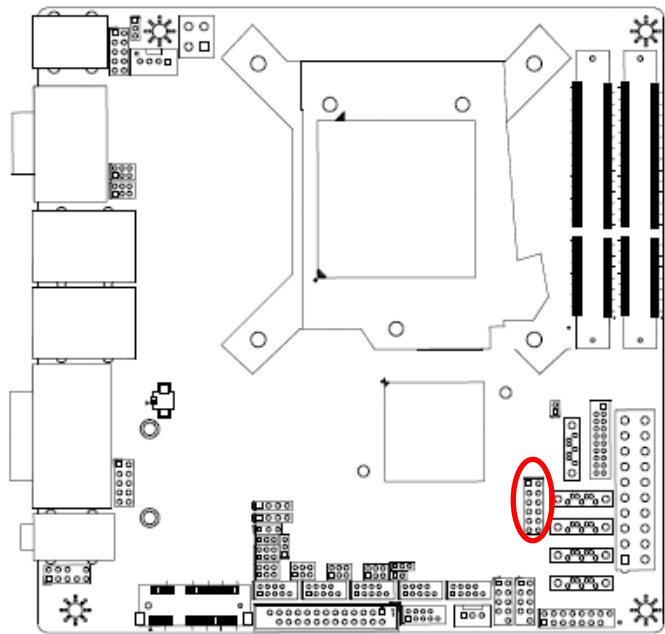


DDR3L



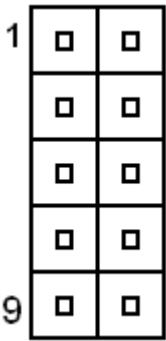
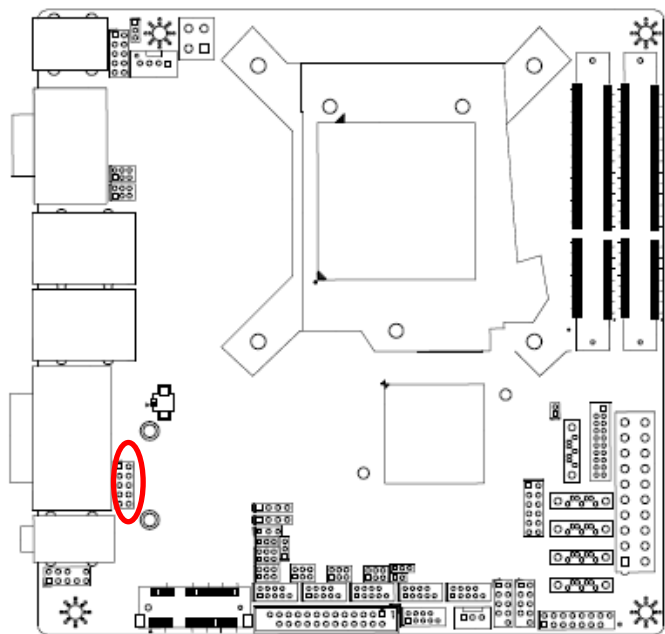
Pin	Define
Open	DDR3L
Close	DDR3

2.4.10 General Purpose I/O (JGPIO1)



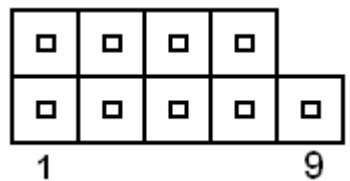
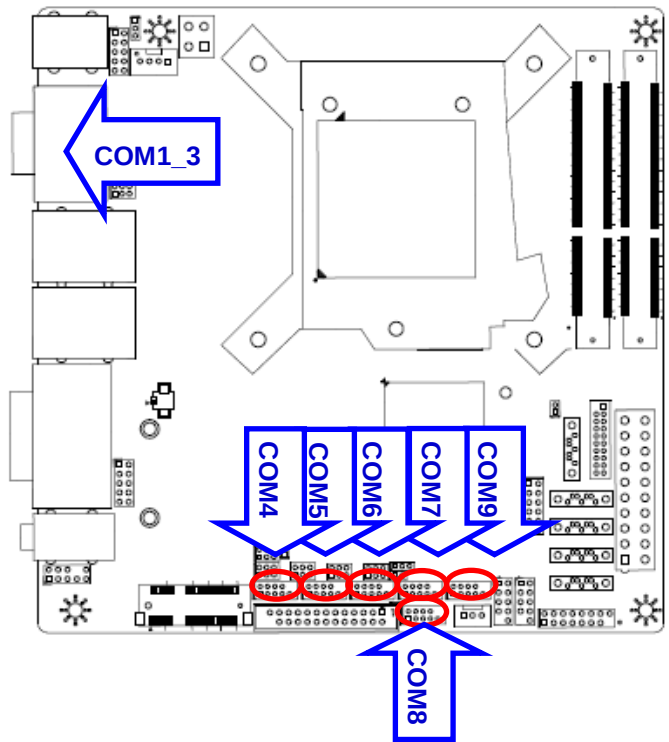
Signal	PIN	PIN	Signal
+5V	1	2	+12V
GPIO	3	4	GPIO
GPIO	5	6	GPIO
GPIO	7	8	GPIO
GPIO	9	10	GPIO
GND	11	12	GND

2.4.11 VGA connector (JVGA1)



Signal	PIN	PIN	Signal
GND	1	2	R
GND	3	4	G
GND	5	6	B
HSYNC	7	8	VSYNC
DDC_DATA	9	10	DDC_CLK

2.4.12 Serial port 4~9 connector (COM4~9)

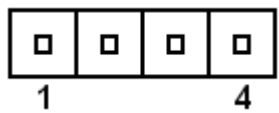
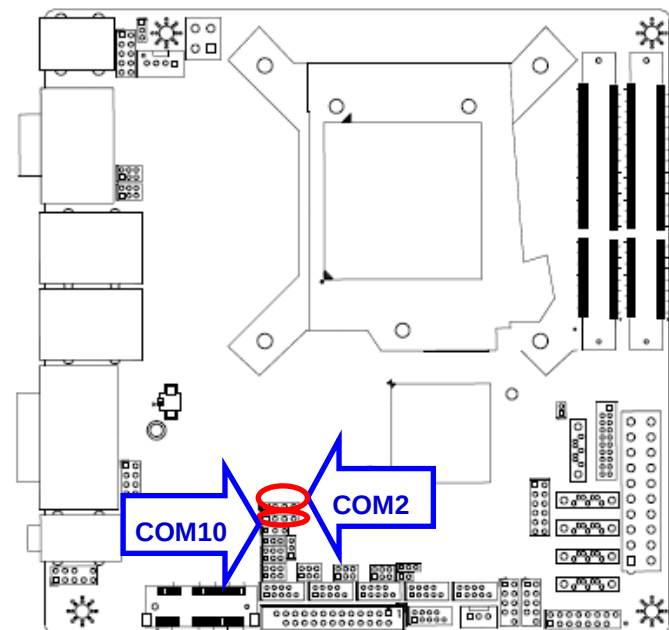


Signal	PIN	PIN	Signal
DCD	1	2	RXD
TXD	3	4	RTD
GND	5	6	DSR
RTS	7	8	CTS
Normal	9		

Note:

Serial Port Function	Serial Port number
RS 232 with 5V/12V	COM1, COM3~COM6
RS 232 without voltage	COM7, COM8, COM9

2.4.13 Serial port 2/10 connector (COM2/10)

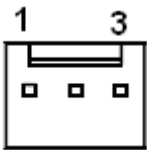
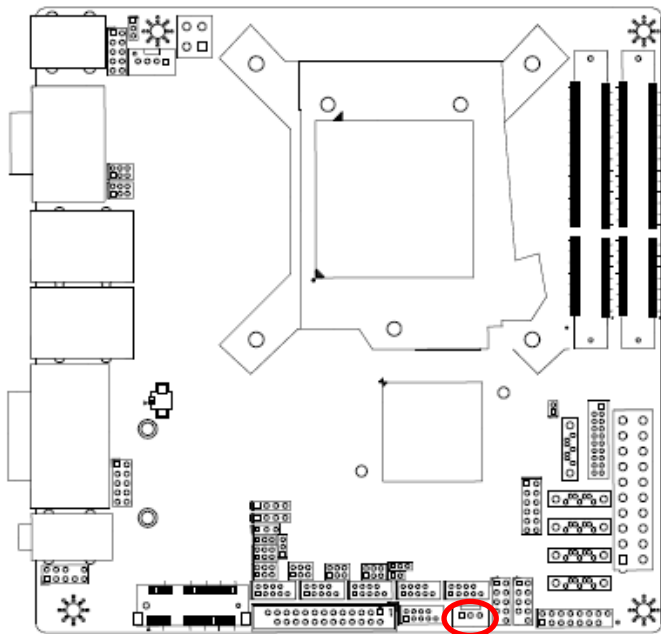


PIN	Signal
1	RS485_TX-
2	RS485_TX+
3	RS422_RX-
4	RS422_RX+

Note:

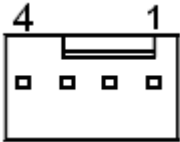
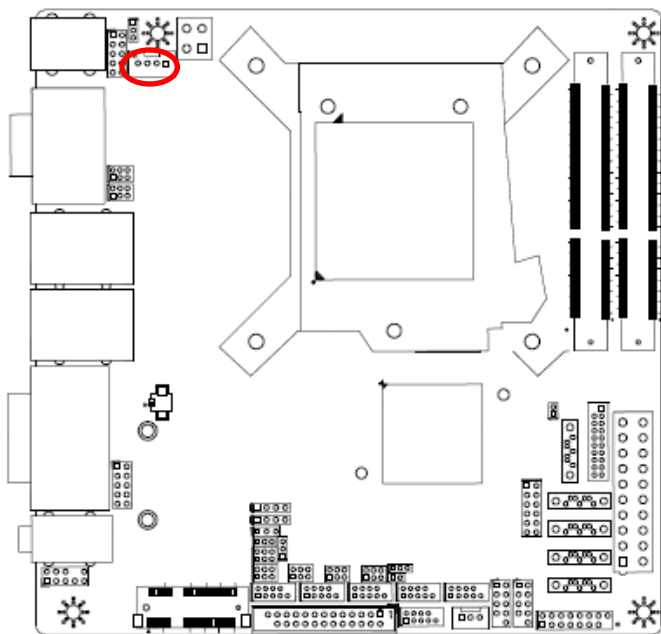
Serial Port Function	Serial Port number
RS 422/485	COM2 , COM10

2.4.14 System Fan connector (SFAN1)



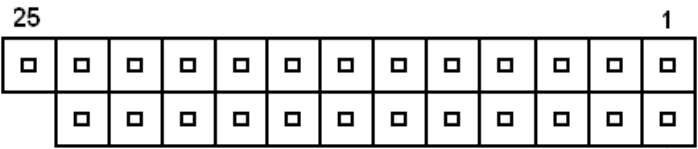
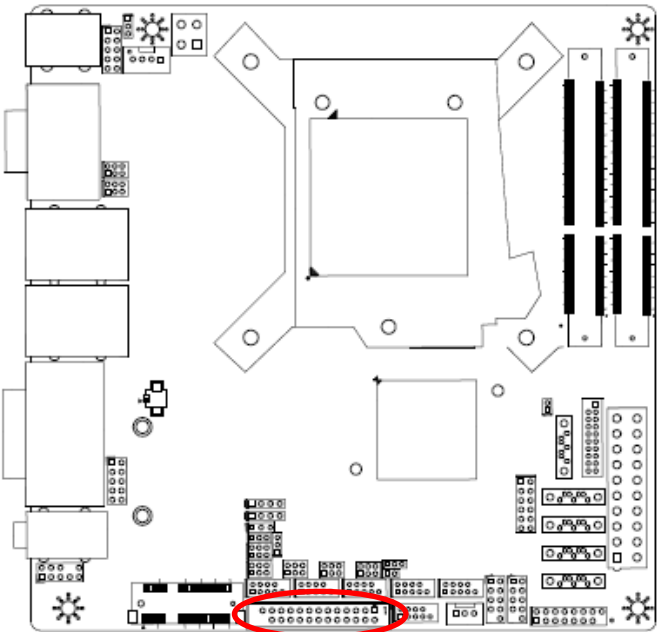
PIN	Signal
1	RPM
2	+12V
3	Ground

2.4.15 CPU Fan connector (CFAN1)



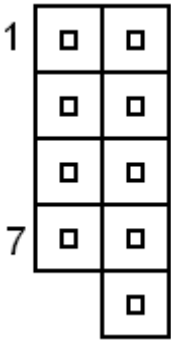
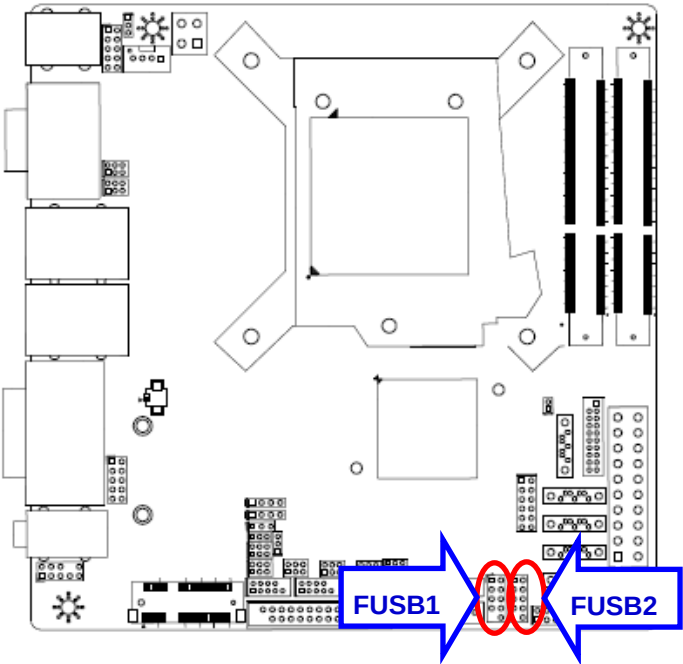
PIN	Signal
1	Ground
2	+12V
3	RPM
4	Control

2.4.16 Printer (JLPT)



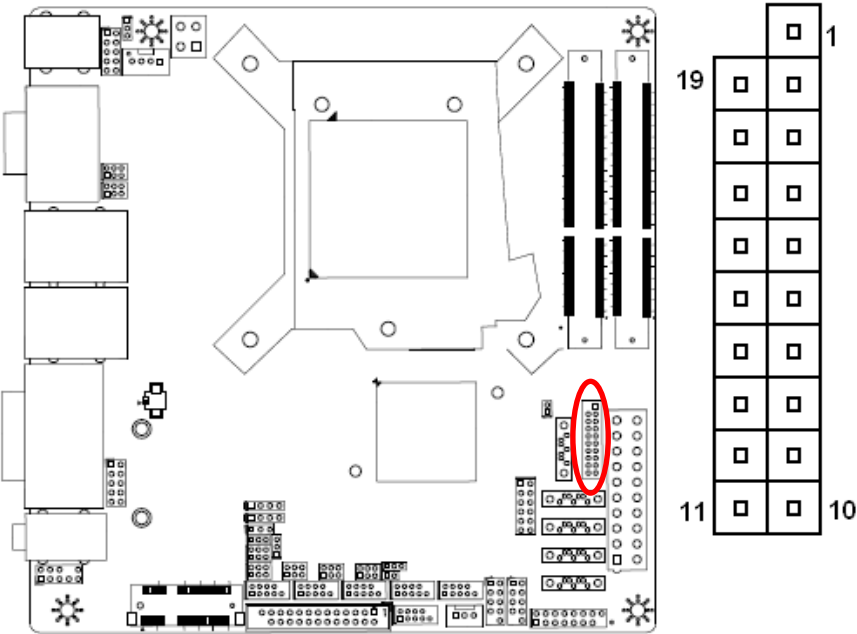
Signal	PIN	PIN	Signal
STB	1	2	AFD
PD0	3	4	ERR
PD1	5	6	INIT
PD2	7	8	SLIN
PD3	9	10	GND
PD4	11	12	GND
PD5	13	14	GND
PD6	15	16	GND
PD7	17	18	GND
ACK	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25		

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



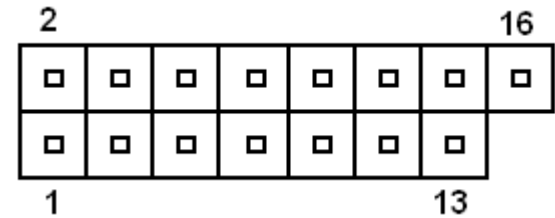
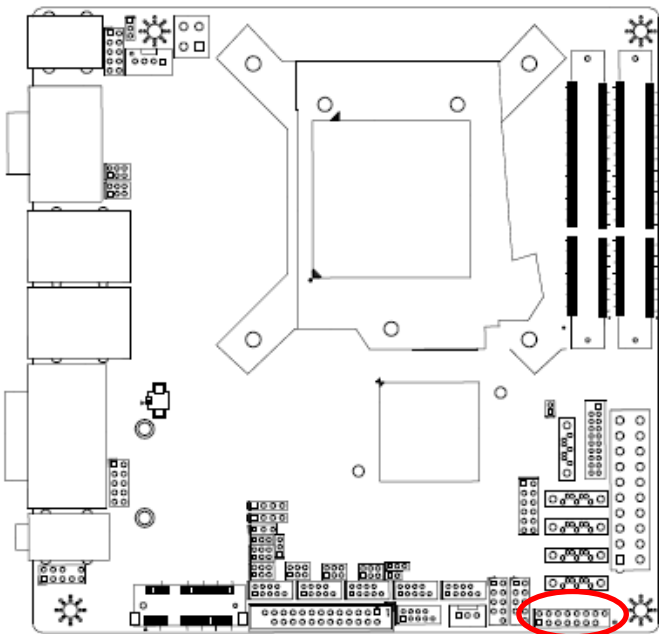
Signal	PIN	PIN	Signal
VCC	1	2	VCC
Data_0-	3	4	Data_1-
DATA_0+	5	6	DATA_1+
GND	7	8	GND
		10	GND

2.4.18 USB Connector 3 - USB3.0 (F_USB3)



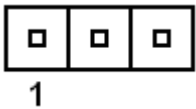
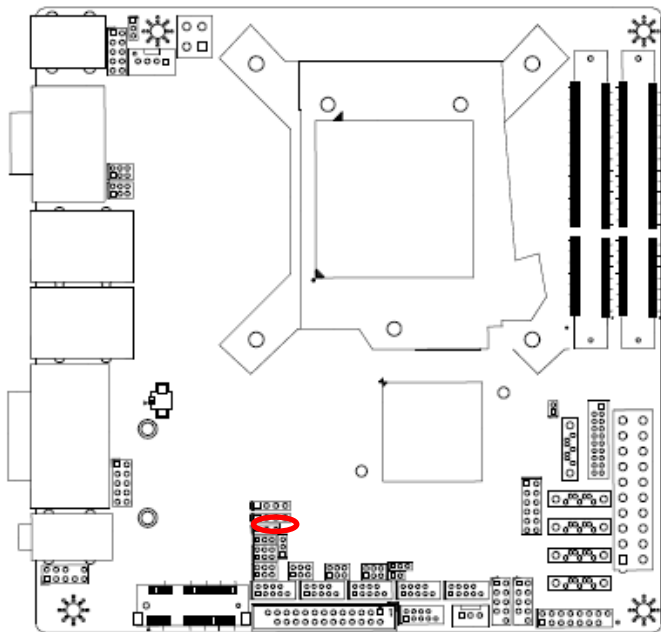
Signal	PIN	PIN	Signal
		1	VCC
VCC	19	2	SSRX-
SSRX-	18	3	SSRX+
SSRX+	17	4	GND
GND	16	5	SSTX-
SSTX-	15	6	SSTX+
SSTX+	14	7	GND
GND	13	8	D-
D-	12	9	D+
D+	11	10	ID

2.4.19 Front Panel Switches (FPANEL)



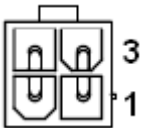
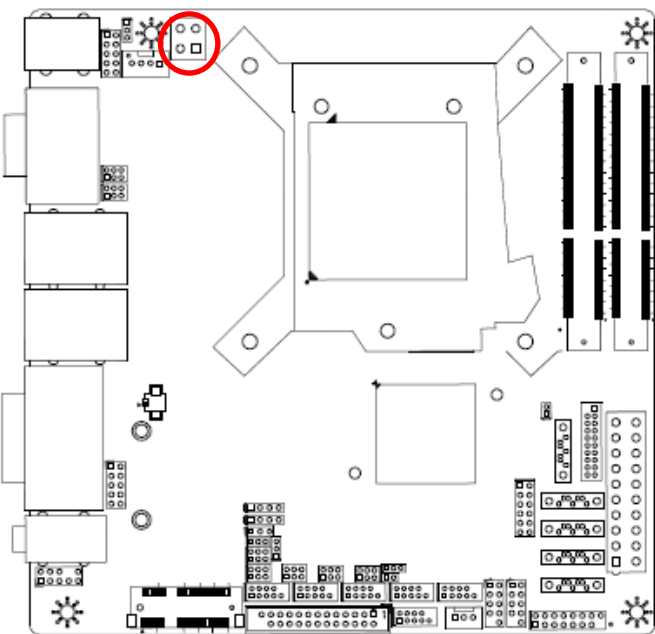
Signal	PIN	PIN	Signal
5VSB	1	2	+HD_LED
+P_LED	3	4	-HD_LED
-P_LED	5	6	PS_ON
+SPEAK	7	8	-PS_ON
NC	9	10	RESET
NC	11	12	-RESET
-SPEAK	13	14	+SLPLED
		16	-SLPLED

2.4.20 Sony/Philips Digital Interface (JSPDIF1)



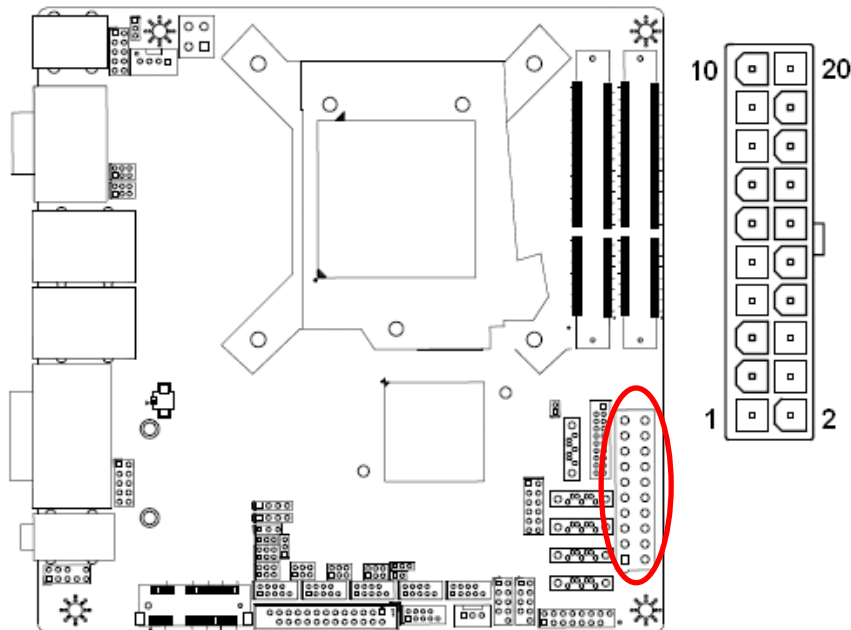
PIN	Signal
1	VCC5V
2	OUT
3	GND

2.4.21 Power connector (PWR12V)



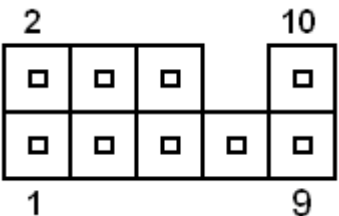
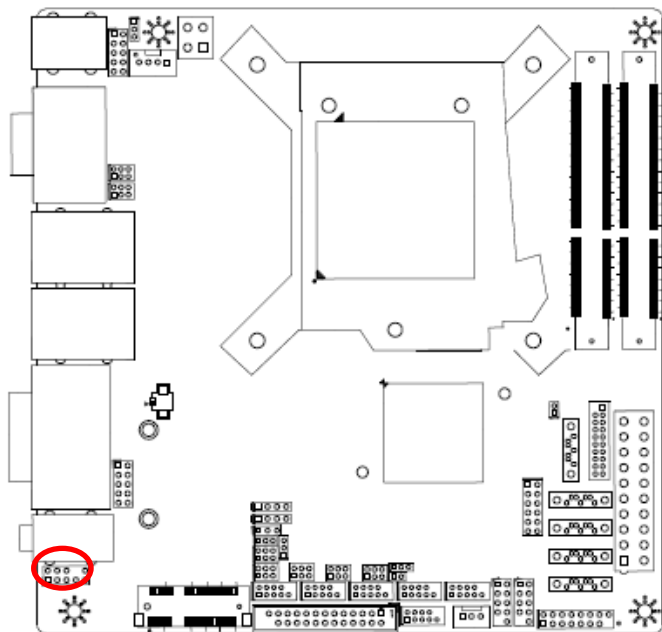
Signal	PIN	PIN	Signal
+12V	4	3	+12V
GND	2	1	GND

2.4.22 ATX Power Input Connector (ATXPWR1)



Signal	PIN	PIN	Signal
+12V	10	20	+5V
+5VSB	9	19	+5V
PWR_OK	8	18	-5V
GND	7	17	GND
+5V	6	16	GND
GND	5	15	GND
+5V	4	14	PS-ON
GND	3	13	GND
+3.3V	2	12	-12V
+3.3V	1	11	+3.3V

2.4.23 Front Panel Audio Connection Header (F_AUDIO)



Signal	PIN	PIN	Signal
FRONT_MIC	1	2	GND
VREF_OUT	3	4	5V
FRONT_OUT_R	5	6	AUD_RET_R
GND	7		
FRONT_OUT_L	9	10	AUD_RET_L

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 immediately after switching the system on, or

By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter setup, 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.

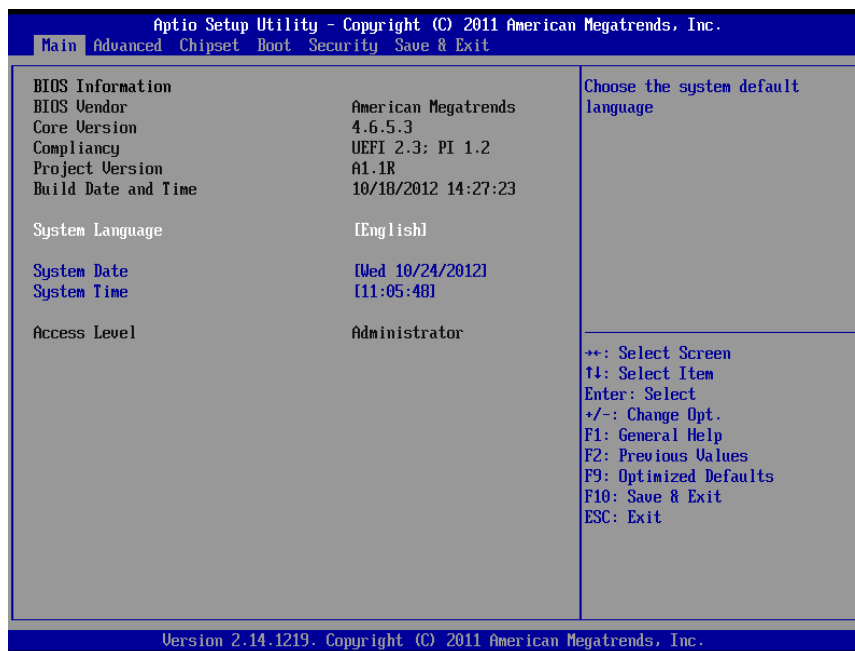
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your systems manufacturer to provide the absolute maximum performance and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

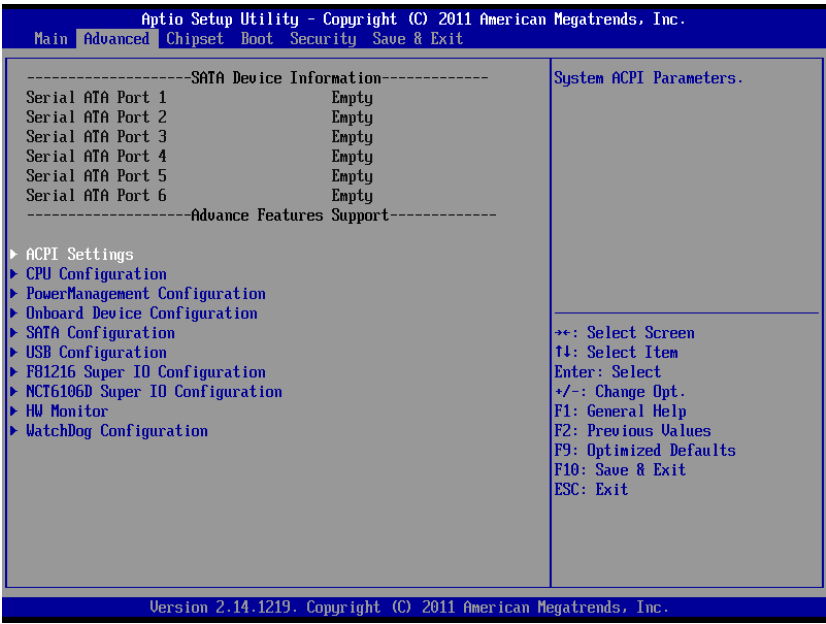
Use the system time option to set the system time. Manually enter the hours, minutes and seconds.



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.

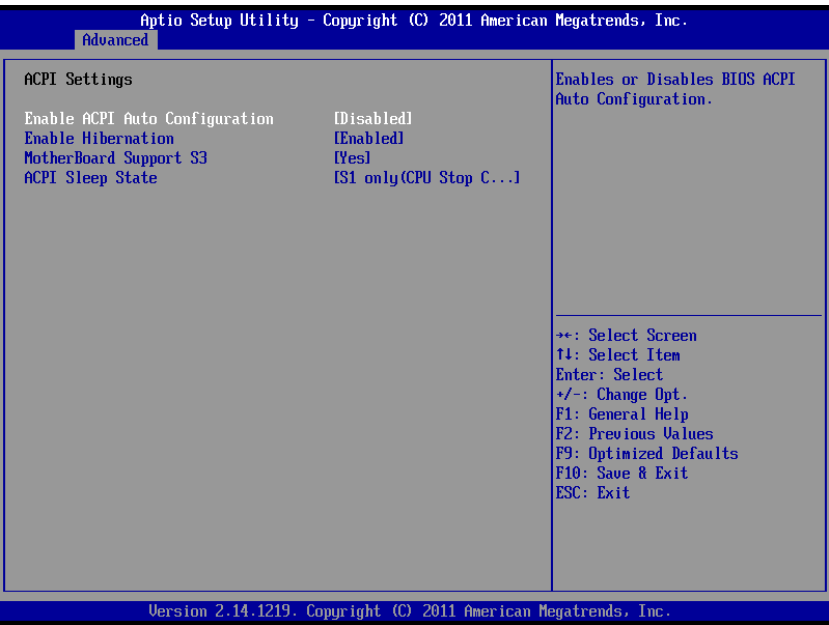
3.6.2 Advanced BIOS settings

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



3.6.2.1 ACPI Settings

You can use this item to set up ACPI Configuration.



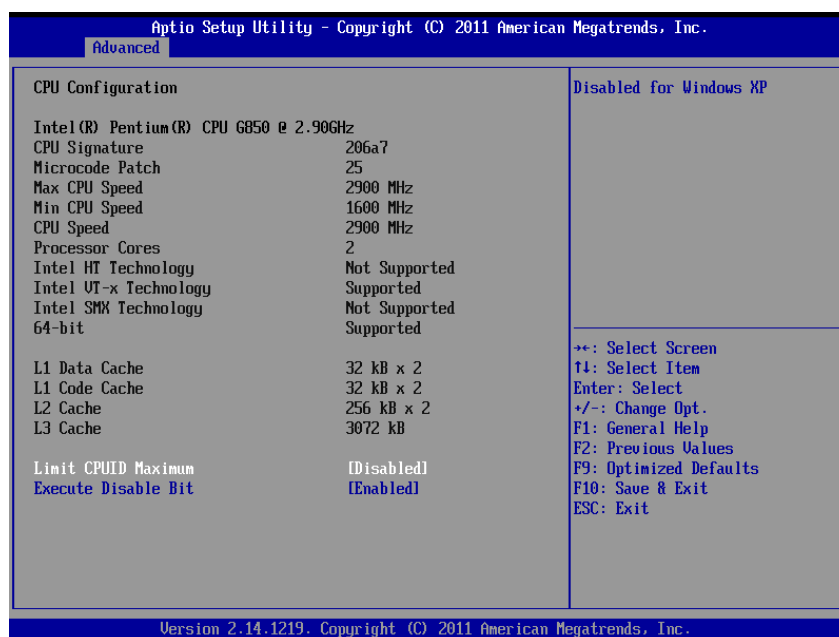
Item	Options	Description
Enable ACPI Auto Configuration	Disabled[Default] , Enabled	Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation	Disabled, Enabled[Default]	Enables or Disables System ability to Hibernate (OS/S4 Sleep

EMX-B75 User's Manual

		State). This option may be not effective with some OS.
MotherBoard Support S3	No Yes[Default]	Support S3 Yes or No.
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.

3.6.2.2 CPU Configuration

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



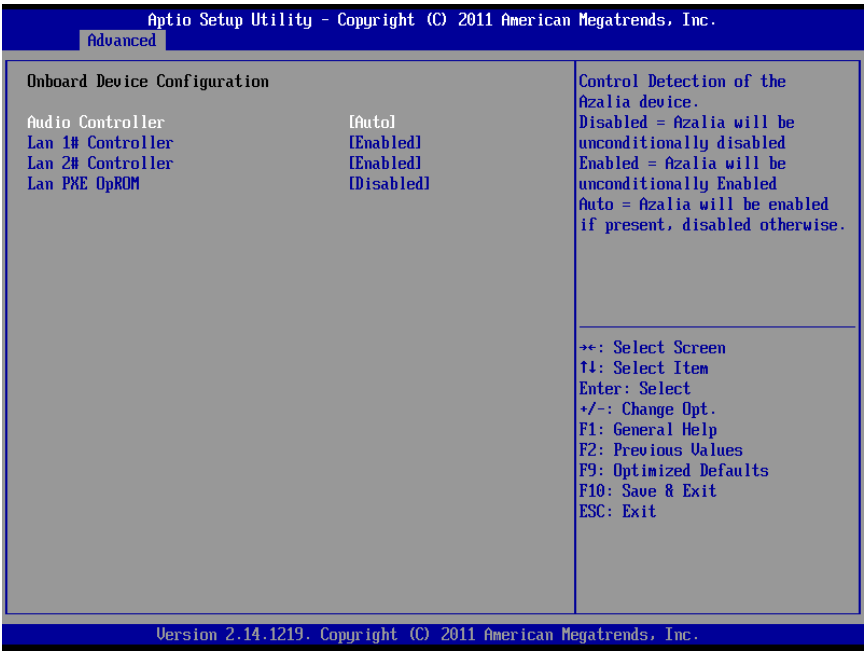
Item	Options	Description
Limit CPUID Maximum	Disabled[Default], Enabled	Disabled for Windows XP
Execute Disable Bit	Disabled Enabled[Default],	XD can prevent certain classed of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2,SuSE Linux 9.2,RedHat Enterprise 3 Update 3).

3.6.2.3 PowerManagement Configuration



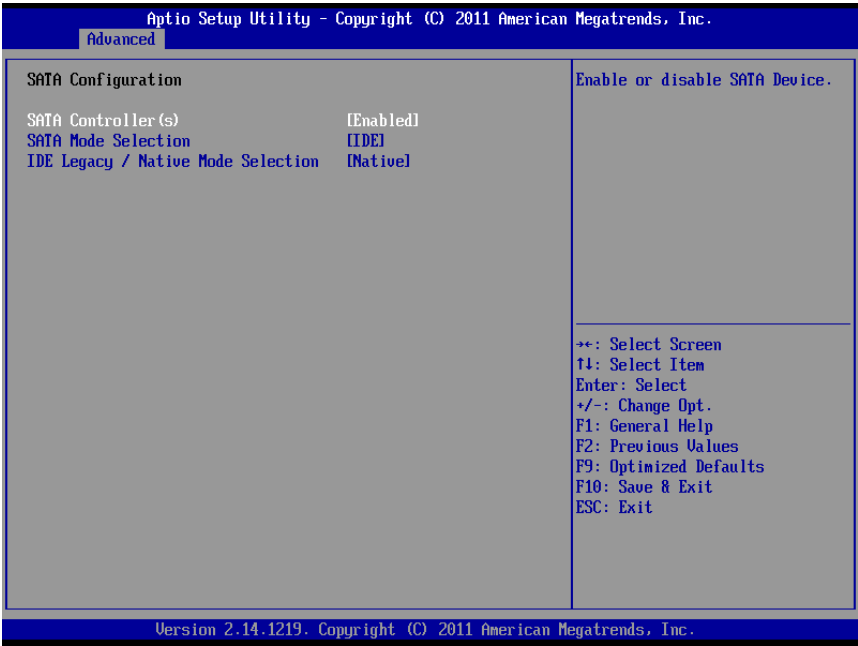
Item	Options	Description
PS/2 Keyboard Wakeup from S3/S4/S5	Disabled[Default] Anykey Password	Setting PS/2 Keyboard Wakeup function.
PS/2 Mouse Wakeup from S4/S5	Enabled Disabled[Default]	Setting PS/2 Mouse Wakeup function.
PME Wakeup	Enabled Disabled[Default]	Wakeup from S1/S3/S4/S5 by lan.
Power-Loss State	Always off[Default] Always on Keep last state	Control the status when Power loss occurs.
Wake system with Fixed Time	Enabled Disabled[Default]	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified.
Wake system with Dynamic Time	Enabled Disabled[Default]	Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s).

3.6.2.4 Onboard Device Configuration



Item	Options	Description
Audio Controller	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.
Lan 1/2# Controller	Enabled [Default] Disabled	Enable/Disable Lan 1/2#.
Lan PXE OpROM	Enabled Disabled [Default]	Controls the execution of UEFI and Legacy PXE OpROM.

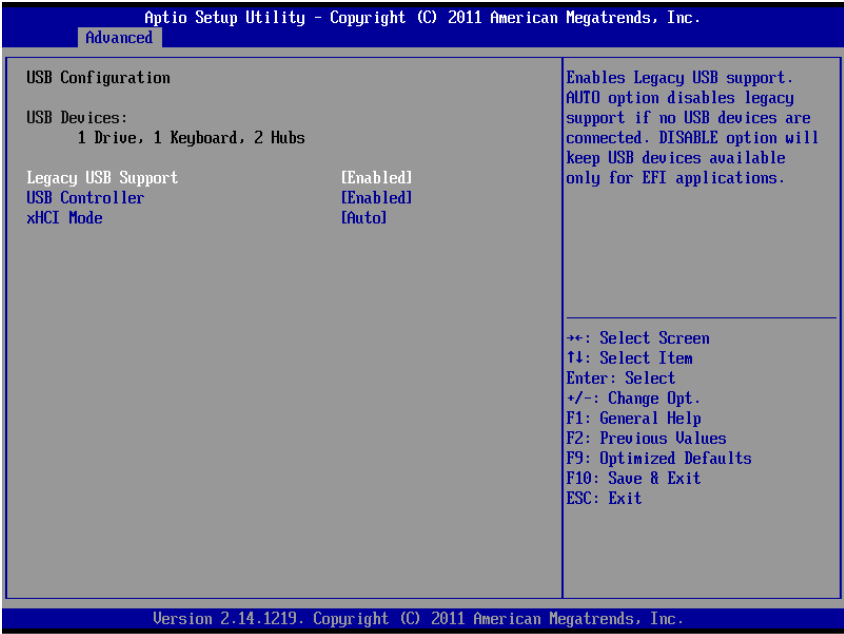
3.6.2.5 SATA Configuration



Item	Options	Description
SATA Controller(s)	Enabled[Default] Disabled	Enable or disable SATA Device.
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.

3.6.2.6 USB Configuration

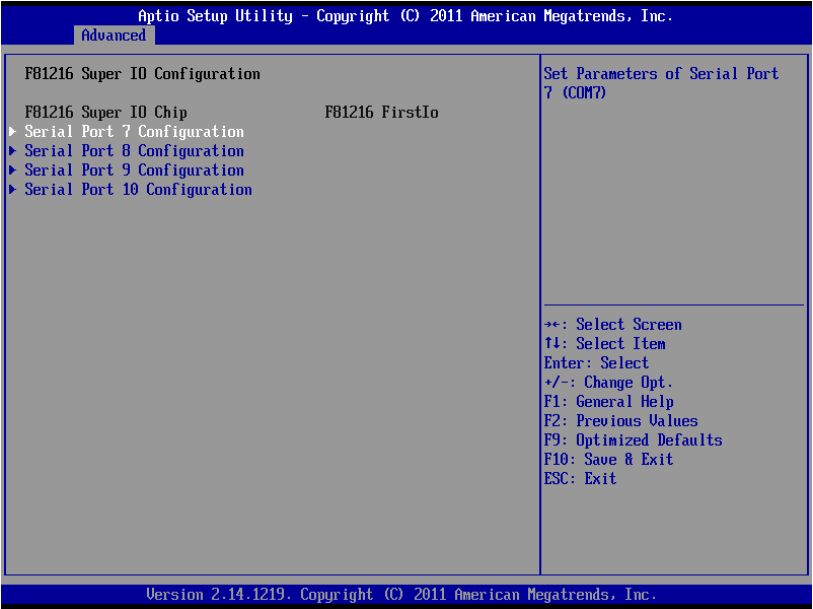
The USB configuration menu is used to read USB configuration information and configure USB.



Item	Options	Description
Legacy USB Support	Enabled[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.
USB Controller	Enabled[Default] Disabled	Enable/Disable all usb port.
xHCI Mode	Auto[Default] Enabled Disabled	Mode of operation of xHCI controller.

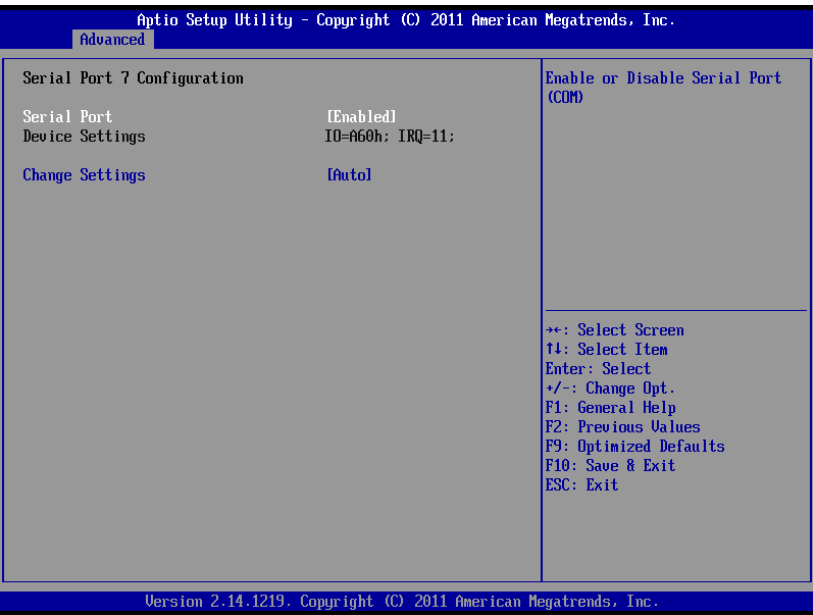
3.6.2.7 F81216 Super IO Configuration

You can use this item to set up or change the F81216 Super IO configuration for FDD controllers, parallel ports and serial ports.



Item	Description
Serial Port 7 Configuration	Set Parameters of Serial Port 7 (COM7).
Serial Port 8 Configuration	Set Parameters of Serial Port 8 (COM8).
Serial Port 9 Configuration	Set Parameters of Serial Port 9 (COM9).
Serial Port 10 Configuration	Set Parameters of Serial Port 10 (COM10).

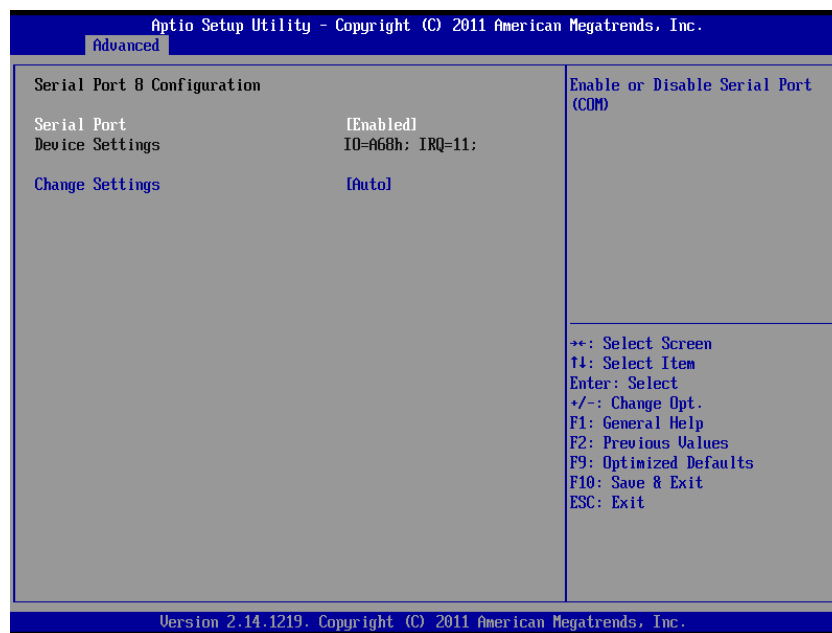
3.6.2.7.1 Serial Port 7 Configuration



EMX-B75 User's Manual

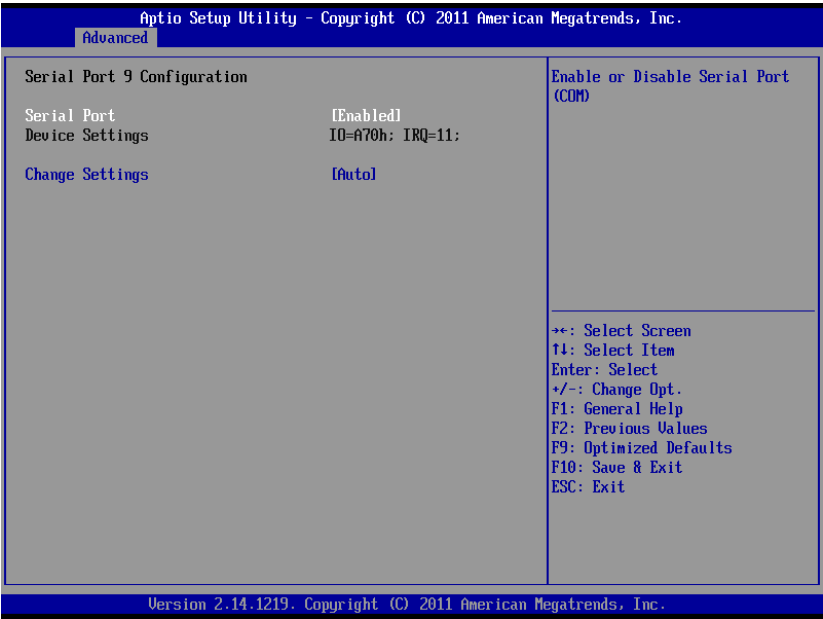
Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=A60h; IRQ=11; IO=A60h; IRQ=10,11; IO=A68h; IRQ=10,11; IO=A70h; IRQ=10,11; IO=A58h; IRQ=10,11;	Select an optimal setting for Super IO device.

3.6.2.7.2 Serial Port 8 Configuration



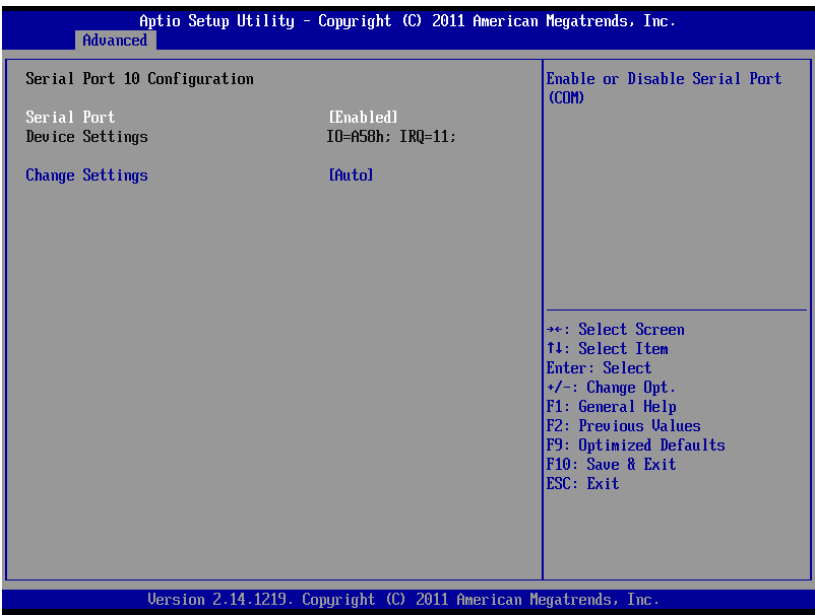
Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=A68h; IRQ=11; IO=A60h; IRQ=10,11; IO=A68h; IRQ=10,11; IO=A70h; IRQ=10,11; IO=A58h; IRQ=10,11;	Select an optimal setting for Super IO device.

3.6.2.7.3 Serial Port 9 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=A70h; IRQ=11; IO=A60h; IRQ=10,11; IO=A68h; IRQ=10,11; IO=A70h; IRQ=10,11; IO=A58h; IRQ=10,11;	Select an optimal setting for Super IO device.

3.6.2.7.4 Serial Port 10 Configuration

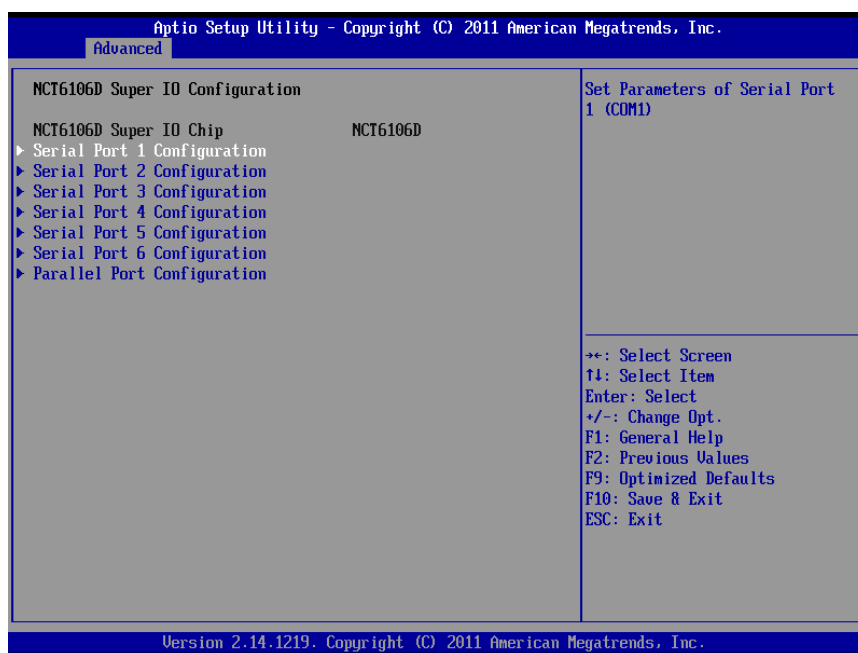


EMX-B75 User's Manual

Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=A58h; IRQ=11; IO=A60h; IRQ=10,11; IO=A68h; IRQ=10,11; IO=A70h; IRQ=10,11; IO=A58h; IRQ=10,11;	Select an optimal setting for Super IO device.

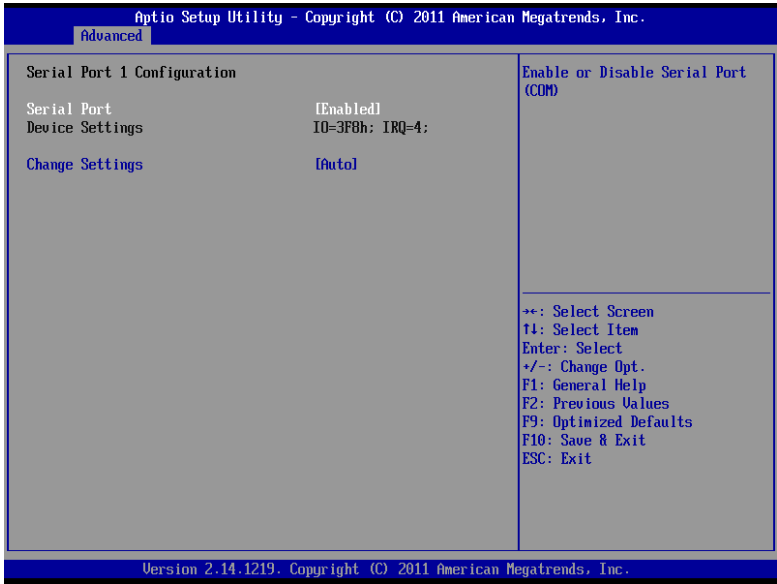
3.6.2.8 NCT6106D Super IO Configuration

You can use this item to set up or change the NCT6106D Super IO configuration for FDD controllers, parallel ports and serial ports.



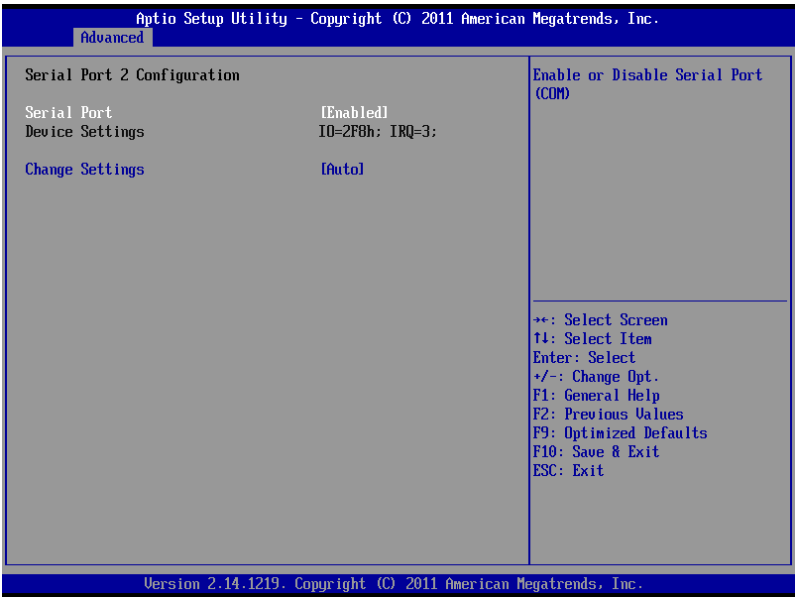
Item	Description
Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COM1).
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COM2).
Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COM3).
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COM4).
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COM5).
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COM6).
Parallel Port Configuration	Set Parameters of Parallel Port (LPT/LPTE).

3.6.2.8.1 Serial Port 1 Configuration



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=3,4,5,6,7,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO device.

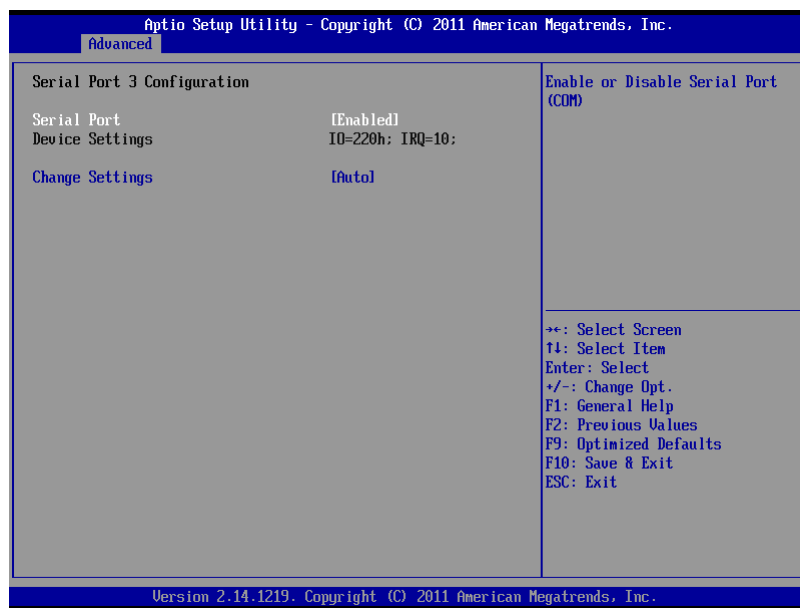
3.6.2.8.2 Serial Port 2 Configuration



EMX-B75 User's Manual

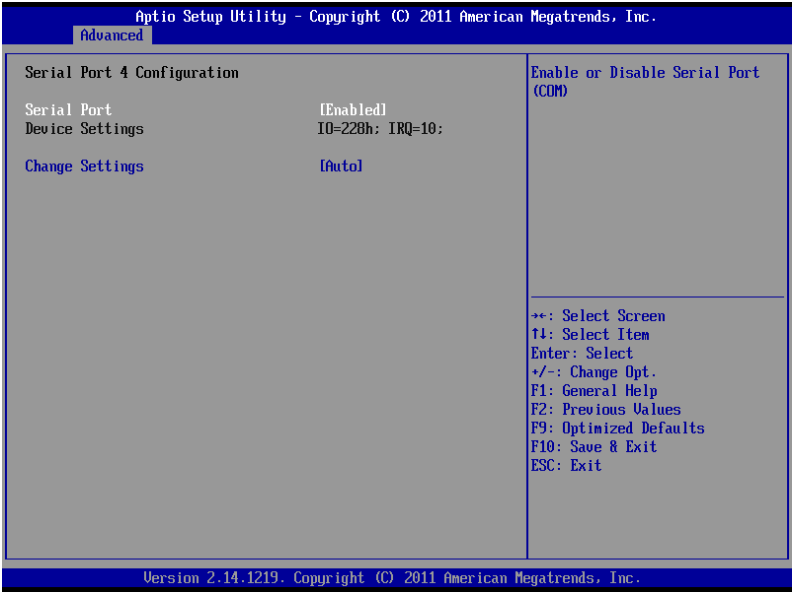
Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting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

3.6.2.8.3 Serial Port 3 Configuration



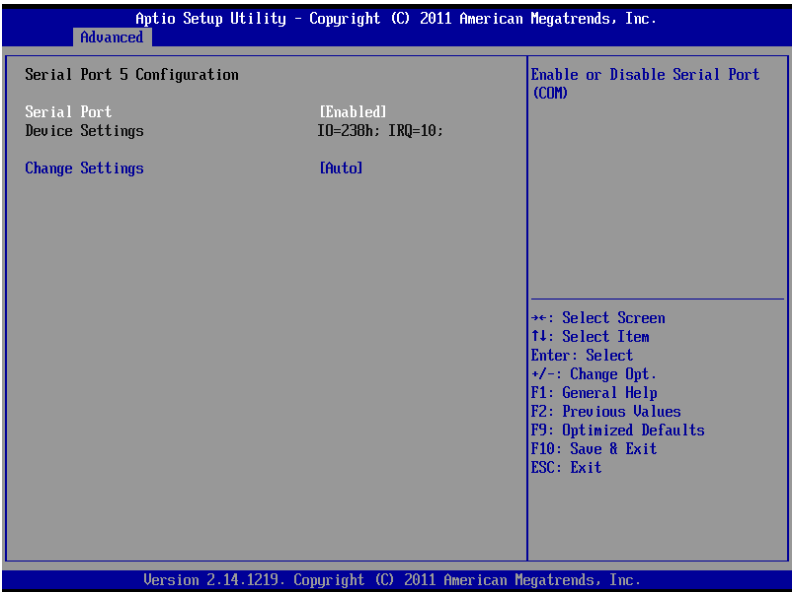
Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=220h; IRQ=10; IO=220h; IRQ=3,4,5,6,7,10,11,12; IO=228h; IRQ=3,4,5,6,7,10,11,12; IO=238h; IRQ=3,4,5,6,7,10,11,12; IO=338h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO device.

3.6.2.8.4 Serial Port 4 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=228h; IRQ=10; IO=220h; IRQ=3,4,5,6,7,10,11,12; IO=228h; IRQ=3,4,5,6,7,10,11,12; IO=238h; IRQ=3,4,5,6,7,10,11,12; IO=338h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO device.

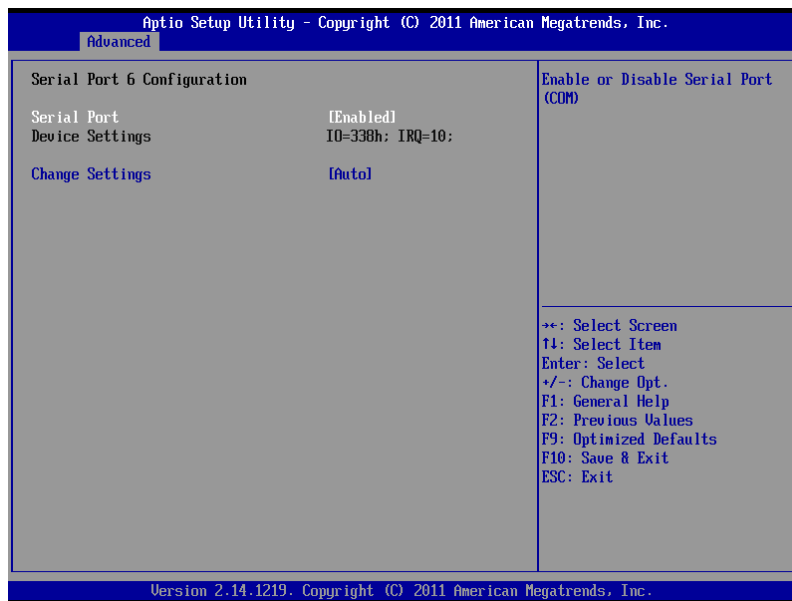
3.6.2.8.5 Serial Port 5 Configuration



EMX-B75 User's Manual

Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=238h; IRQ=10; IO=220h; IRQ=3,4,5,6,7,10,11,12; IO=228h; IRQ=3,4,5,6,7,10,11,12; IO=238h; IRQ=3,4,5,6,7,10,11,12; IO=338h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO device.

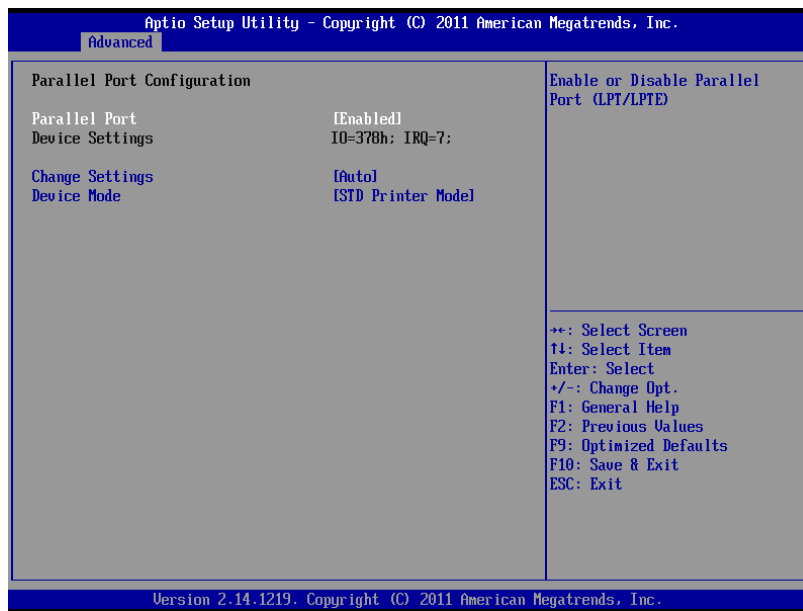
3.6.2.8.6 Serial Port 6 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled[Default]	Enable or Disable Serial Port (COM).
Change Settings	Auto[Default] IO=338h; IRQ=10; IO=220h; IRQ=3,4,5,6,7,10,11,12; IO=228h; IRQ=3,4,5,6,7,10,11,12; IO=238h; IRQ=3,4,5,6,7,10,11,12; IO=338h; IRQ=3,4,5,6,7,10,11,12;	Select an optimal setting for Super IO device.

EMX-B75 User's Manual

3.6.2.8.7 Parallel Port Configuration

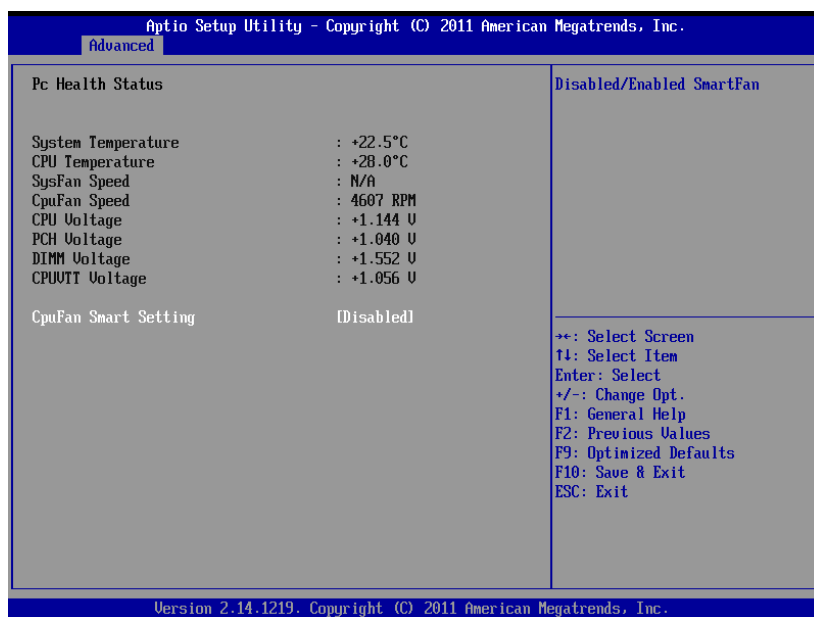


Item	Option	Description
Parallel Port	Enabled, Disabled [Default]	Enable or Disable Parallel Port (LPT/LPTE).
Change Settings	Auto [Default] IO=378h; IRQ=7; IO=378h; IRQ=6,7,10,11,12; IO=278h; IRQ=6,7,10,11,12; IO=3BCh; IRQ=6,7,10,11,12;	Select an optimal setting for Super IO device.
Device Mode	STD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

EMX-B75 User's Manual

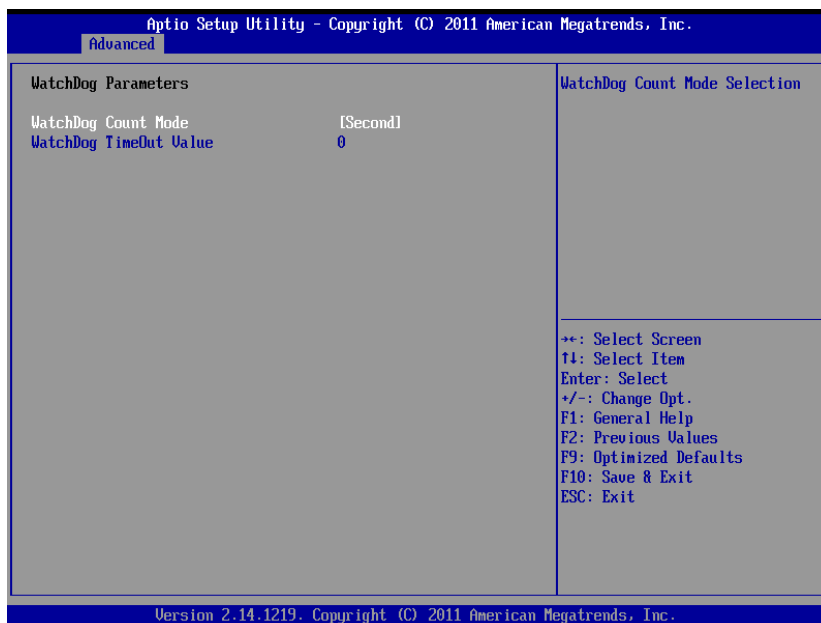
3.6.2.9 HW Monitor

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



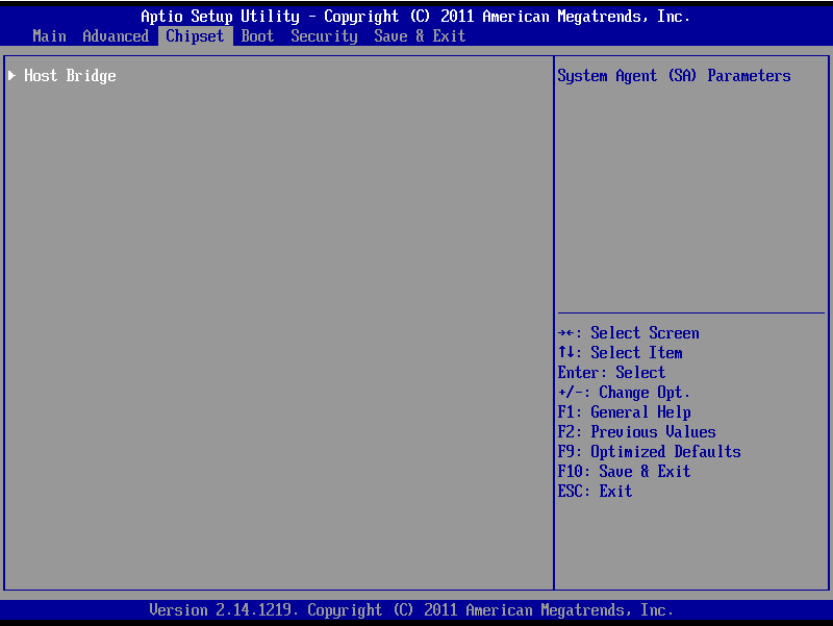
Item	Options	Description
CpuFan Smart Setting	Disabled[Default] Enabled	Disabled/Enabled SmartFan.

3.6.2.10 WatchDog Parameters



Item	Options	Description
WatchDog Count Mode	Second[Default] Minute	WatchDog Count Mode Selection.
WatchDog TimeOut Value	0	Fill WatchDog TimerOut Value,0 means disabled.

3.6.3 Chipset



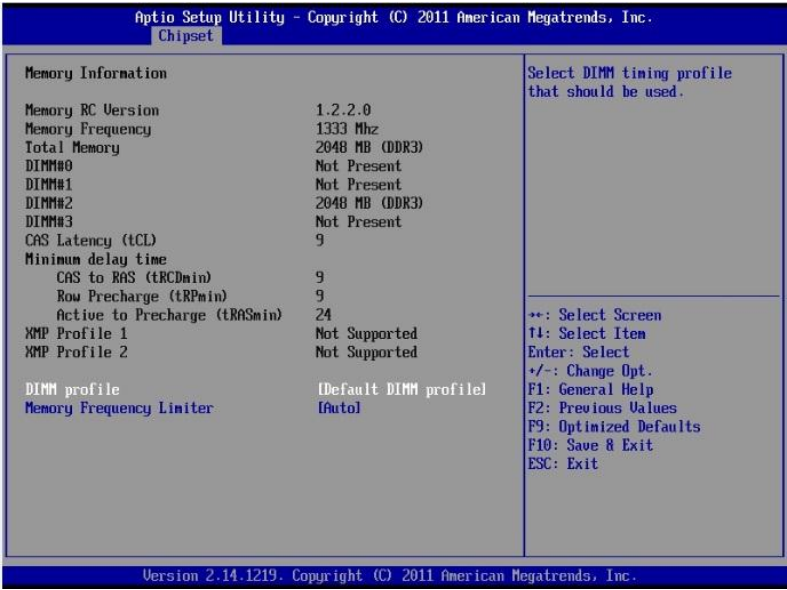
Item	Description
Host Bridge	System Agent (SA) Parameters.

3.6.3.1 Host bridge



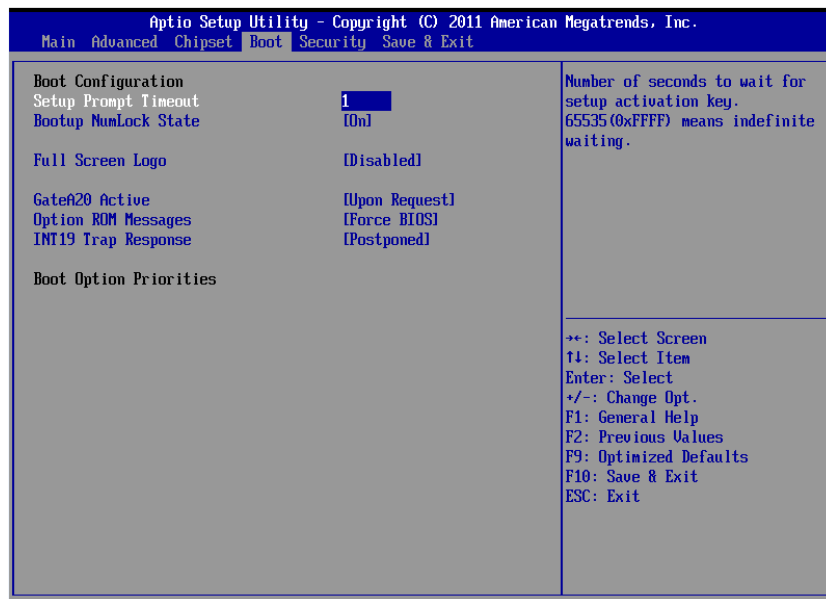
Item	Options	Description
Memory Configuration		Memory Configuration Parameters.

3.6.3.1.1 Memory Configuration



Item	Option	Description
DIMM profile	Default DIMM profile[Default] Custom Profile XMP Profile 1 XMP Profile 2	Select DIMM timing profile that should be used.
Memory Frequency Limiter	Auto[Default] 1067 1333 1600 1867 2133 2400 2667	Maximum Memory Frequency Selections in Mhz.

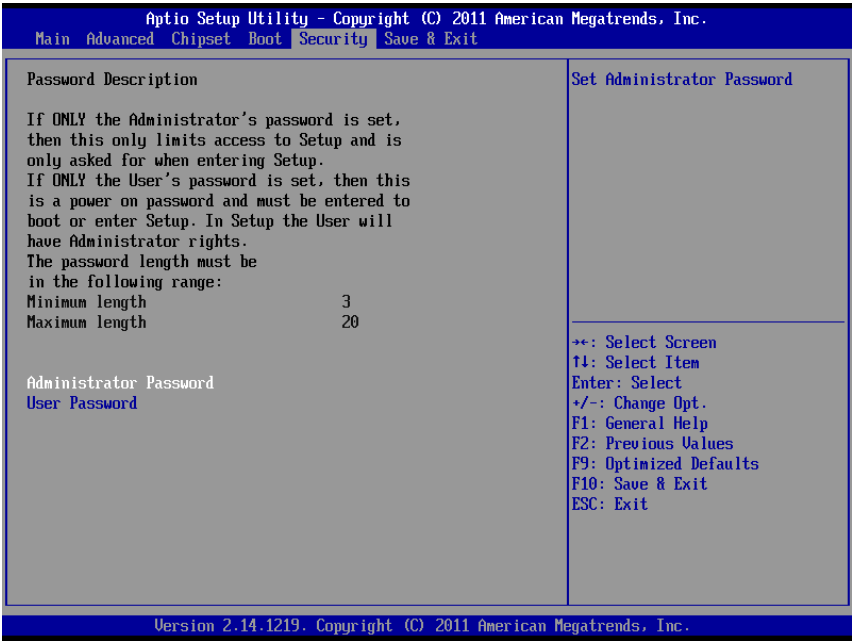
3.6.4 Boot settings



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 Screen Logo	Disabled[Default] Enabled	Enables or disables Quiet Boot option.
GateA20 Active	Upon Request[Default] Always	UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Option ROM Messages	Force BIOS[Default] Keep Current	Set display mode for Option ROM.
INT19 Trap Response	Immediate Postponed[Default]	BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.

3.6.5 Security

Use the Security menu to set system and user password.



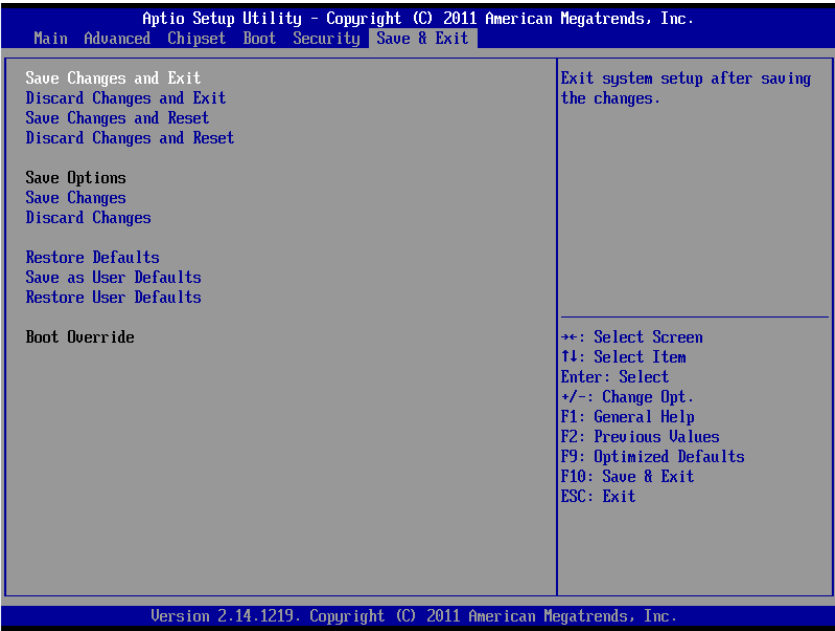
3.6.5.1 Administrator Password

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 Exit

Use the save changes and reset option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

EMX-B75 User's Manual

3.6.6.2 *Discard Changes and Exit*

Use the Discard changes and Exit option to exit the system without saving the changes made to the BIOS configuration setup program.

3.6.6.3 *Save Changes and Reset*

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

3.6.6.4 *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.

3.6.6.5 *Save Changes*

Changes made to BIOS settings during this session are committed to NVRAM. The setup program remains active, allowing further changes.

3.6.6.6 *Discard Changes*

Any changes made to BIOS settings during this session of the BIOS setup program are discarded. The BIOS setup continues to be active.

3.6.6.7 *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.

3.6.6.8 *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.

3.6.6.9 *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 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

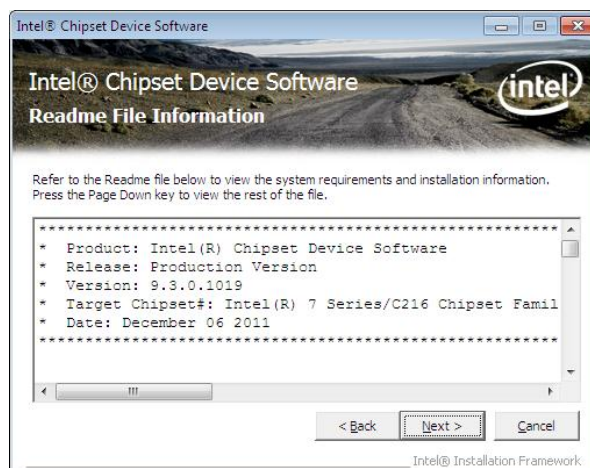
「\Driver_Audio\EMX-B75_Audio」.



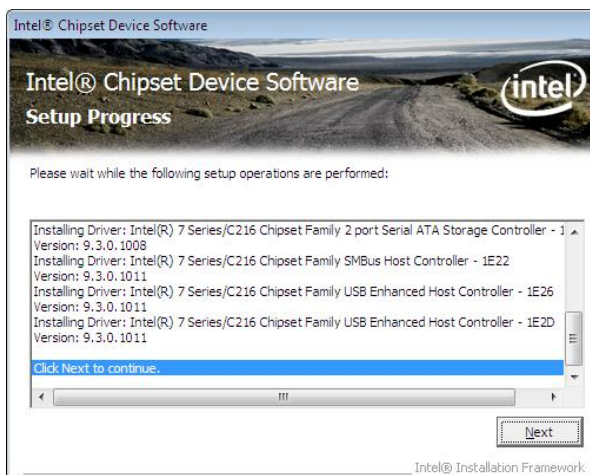
Step 2. Select Next to start setup.



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.

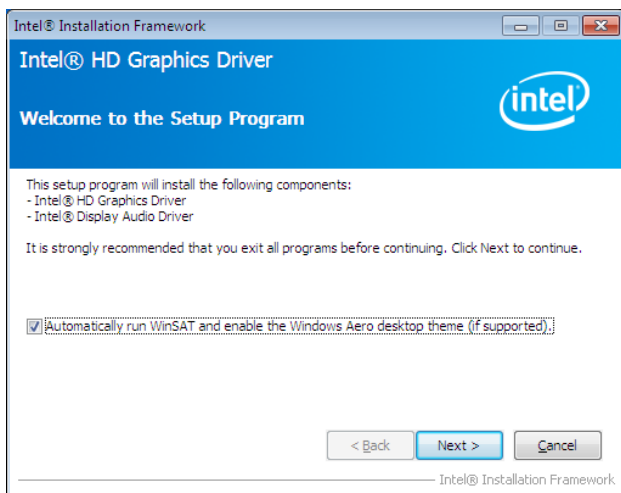
4.2 Install VGA Driver

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-B75_VGA」.



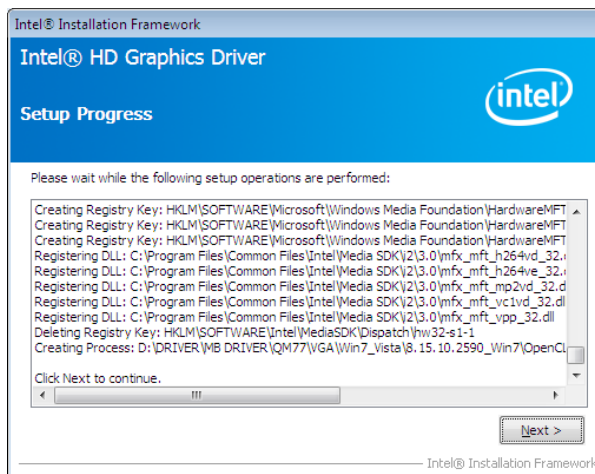
Step 2. Select **Next** to start setup.



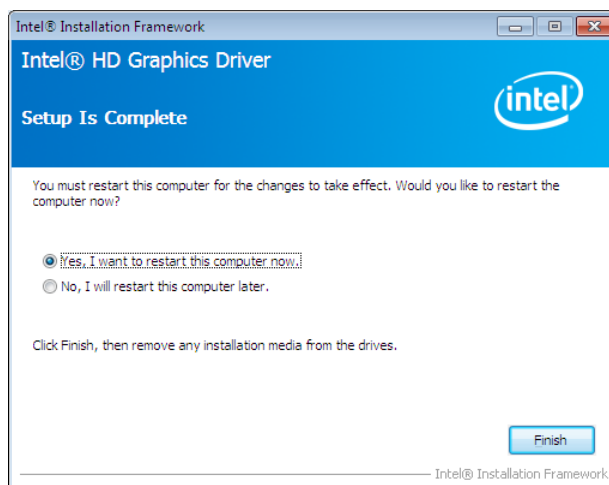
Step 3. Select **Yes** to the next step.



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



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



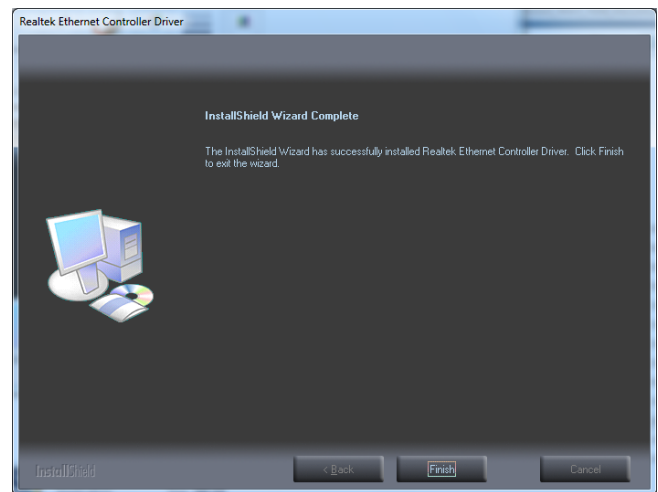
Step 6. Select **Finish** to complete installation.

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

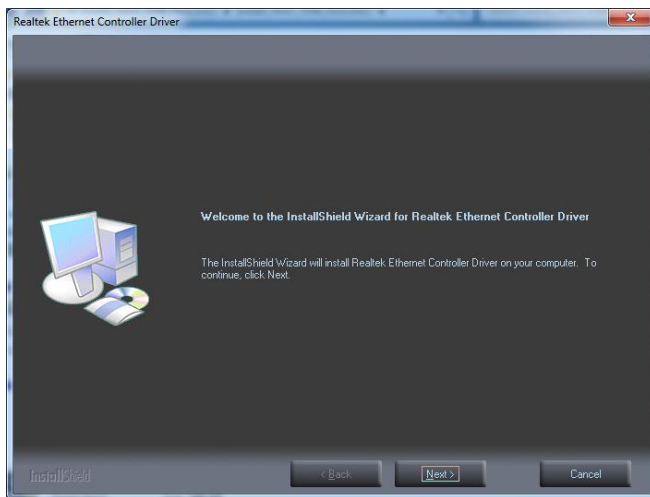
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\\Driver_Network\\EMX-B75_LAN**.



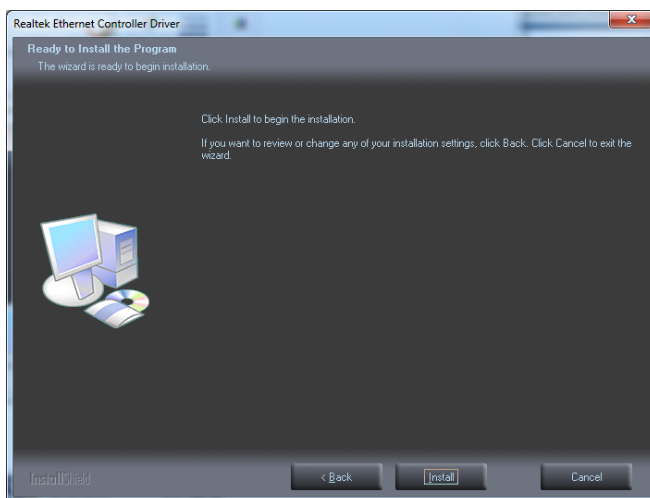
Note: The installation procedures and screen shots in this section are based on Windows 7 operation system.



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



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



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

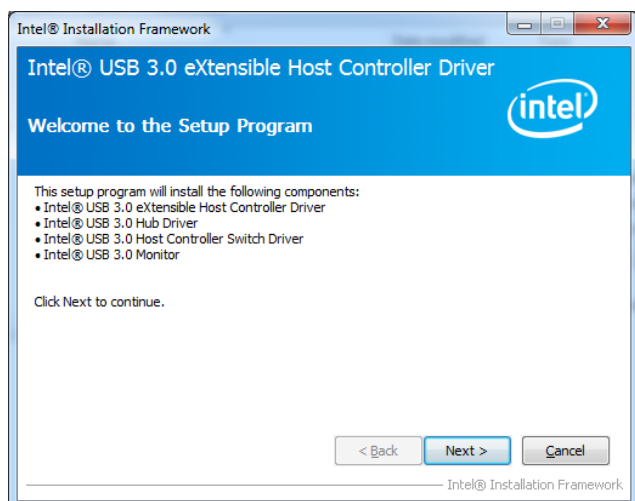
4.4 Install USB 3.0 Driver

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.

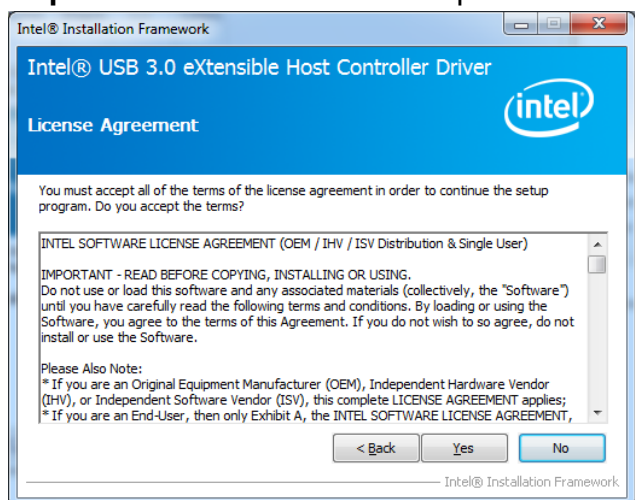


Note: The installation procedures and screen shots in this section are based on Windows 7 operating system.

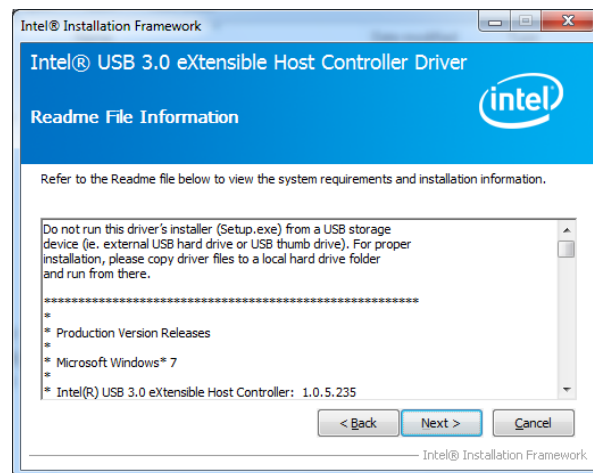
Step 1. Locate 「\Utility\USB3.0」.



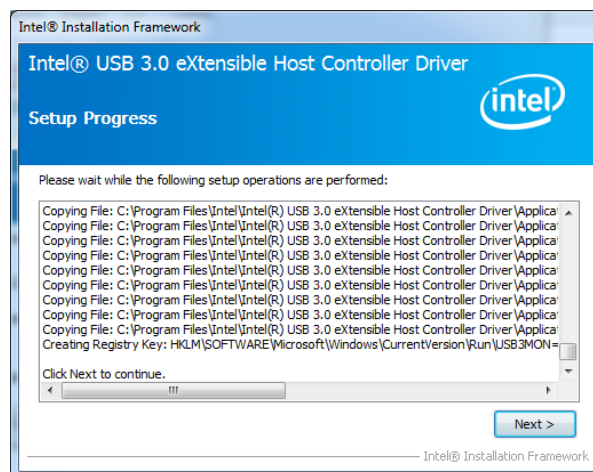
Step 2. Select **Next** to start setup.



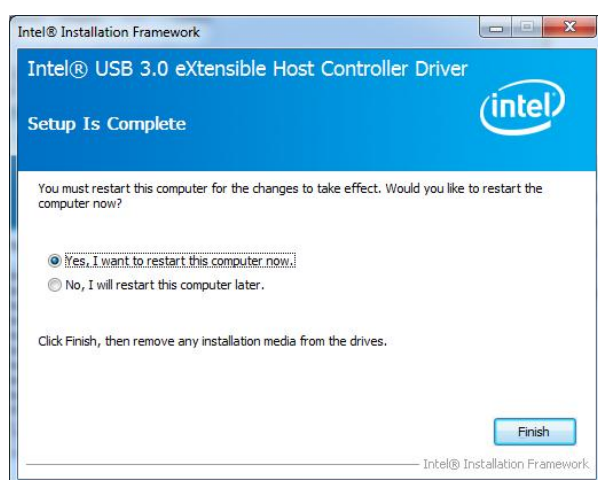
Step 3. Select **Yes** to the next step.



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



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



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

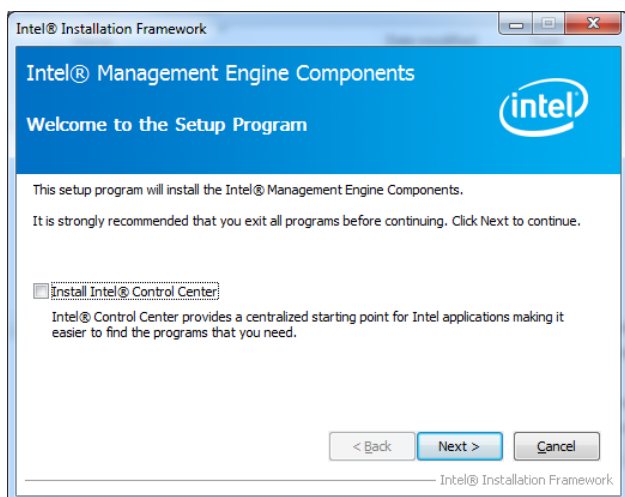
4.5 Install MEI Driver

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.

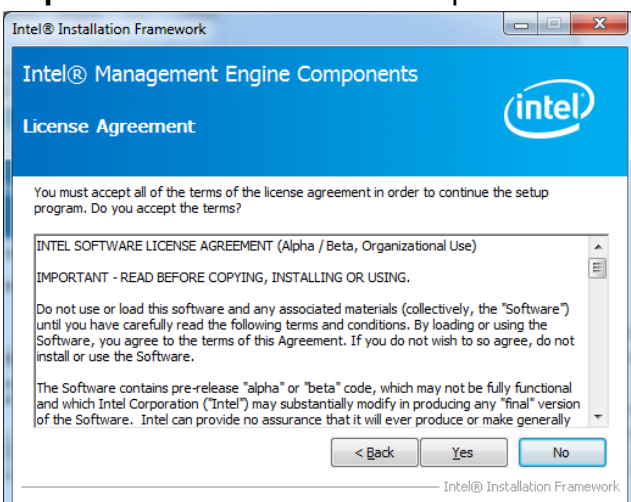


Note: The installation procedures and screen shots in this section are based on Windows 7 operating system.

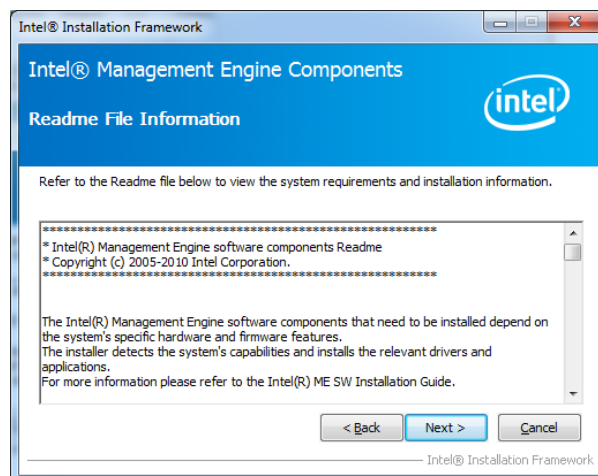
Step 1. Locate 「\Utility\MEI」.



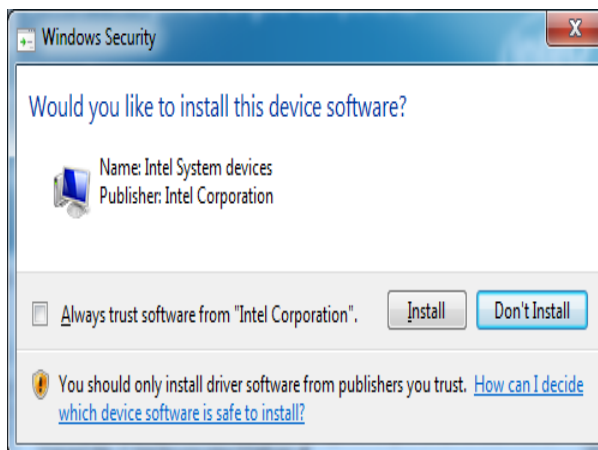
Step 2. Select **Next** to start setup.



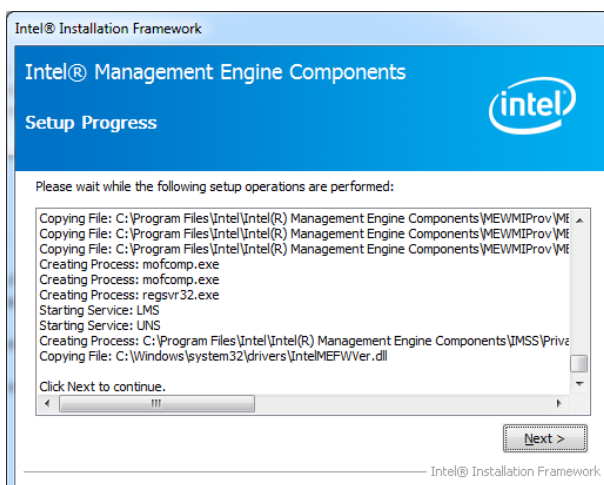
Step 3. Select **Yes** to the next step.



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

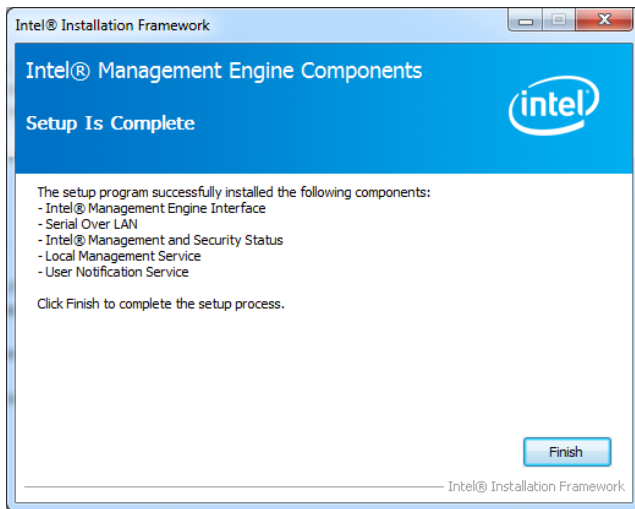


Step 5. Select **Install** to continue installation.



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

EMX-B75 User's Manual



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

4.6 Install Audio Driver (For Realtek ALC661 HD Audio)

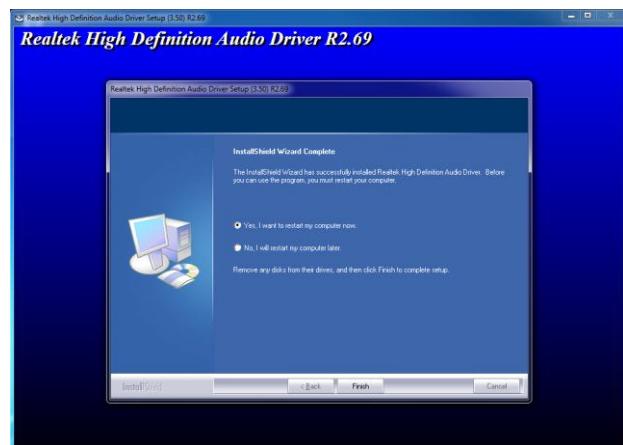
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **Driver_Audio\EMX-B75_Audio**



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.



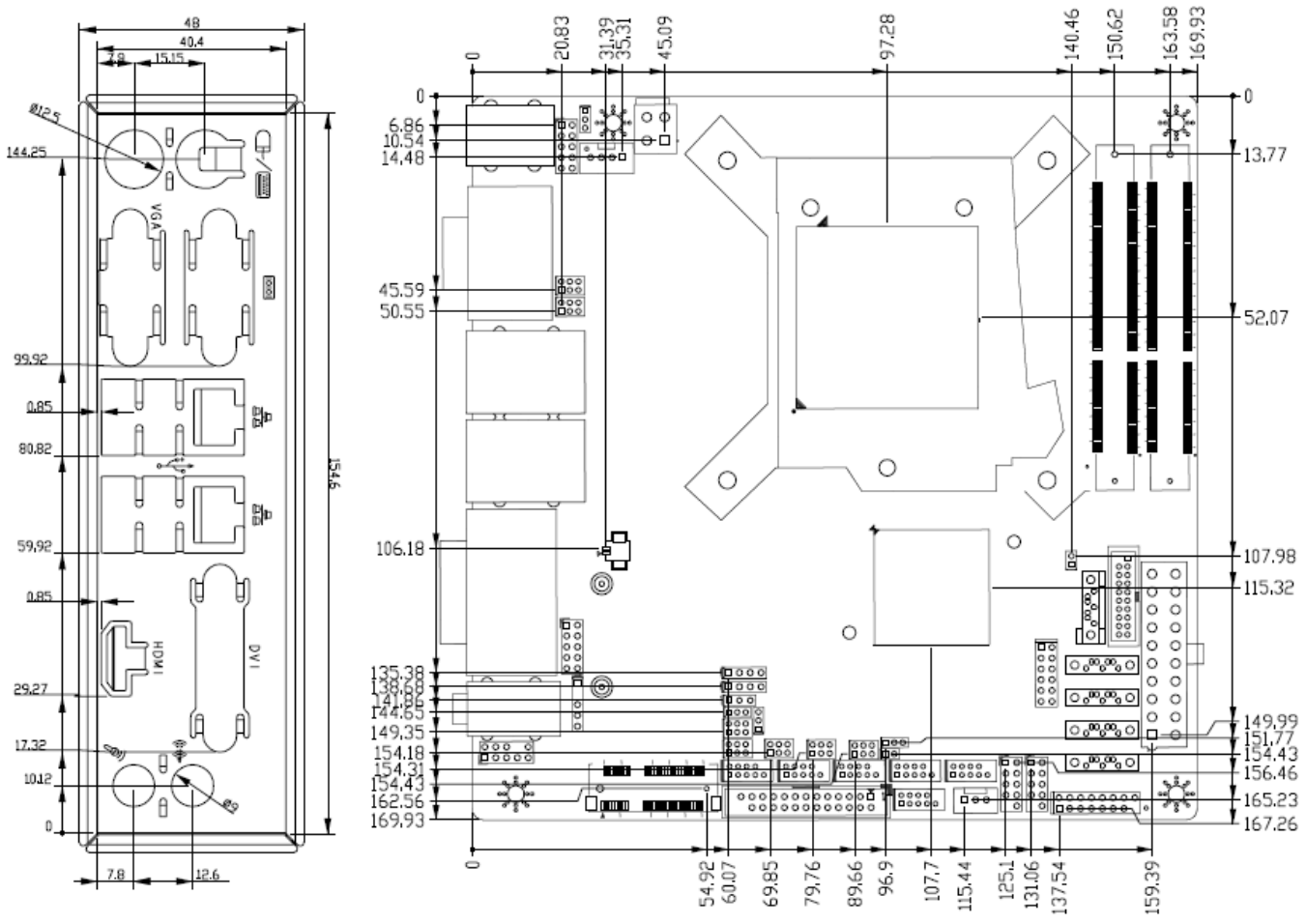
Step1. Click **Next** to Install..



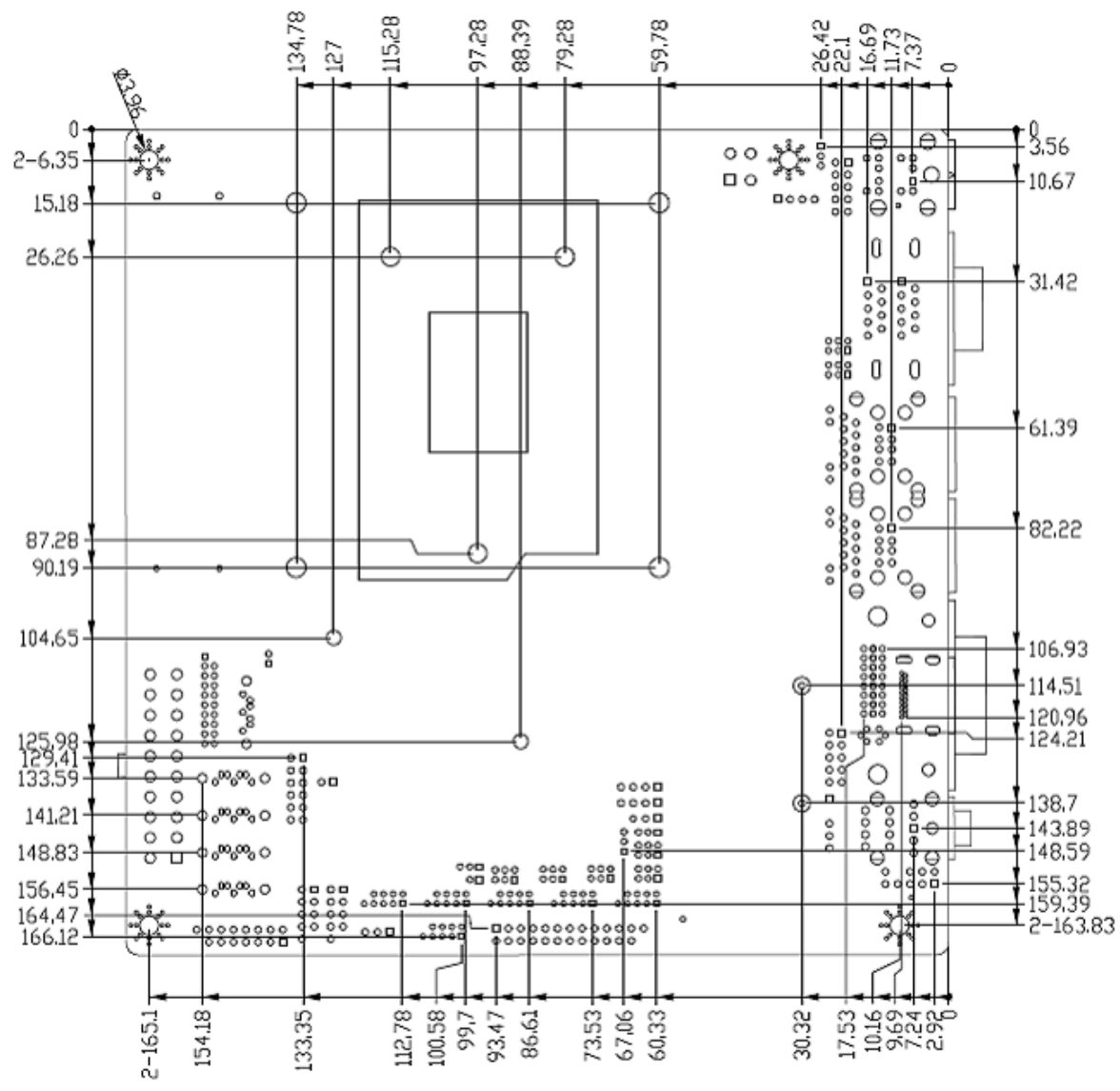
Step 2. Select **Finish** to complete Installation.

5. Mechanical Drawing





Unit: mm



Unit: mm

