Intel® Huron River QM67 EPIC Module with Intel® QM67 Chipset

User's manual

1st Ed – 16 November 2011

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Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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

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1. Getting Started

1.1 Safety Precautions

Warning!



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

Caution!



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

1.2 Packing List

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

- 1 x Quick Installation Guide for EPI-QM67
- 1 x Cable set contains the followings:
 - 1 x COM port cable (20-pin to 2 x DB9(M))
 - 1 x Serial ATA cable (7-pin, standard)
 - 1 x Serial ATA power cable



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

1.3 Document Amendment History

Revision	Date	Comment
1st	November	Initial Release
	2011	

1.4 Manual Objectives

This manual describes in detail the Avalue Technology EPI-QM67 Single Board.

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

We strongly recommend that you study this manual carefully before attempting to interface with EPI-QM67 series or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

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

1.5 System Specifications

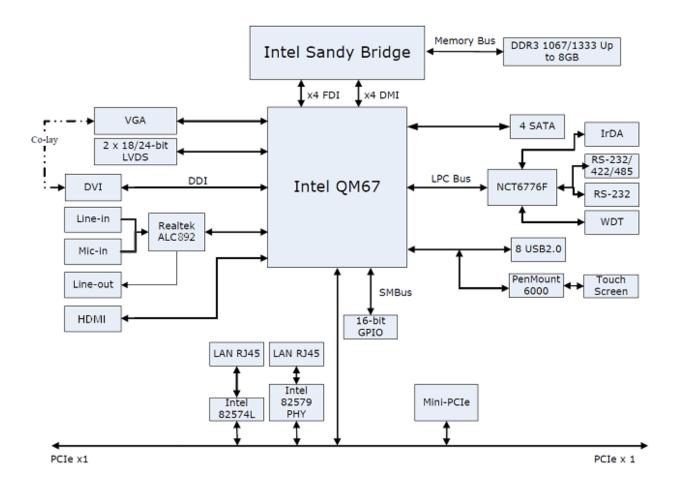
System	
CPU	Intel Sandy Bridge Processor (35W~45W CPU)
BIOS	AMI 8M-bit SPI BIOS
System Chipset Intel Cougar Point-Mbl (QM67)	
I/O Chip	Nuvoton NTC6776F
System Memory	One 204-pin DDR3 SODIMM socket, supports up to 8GB DDR3 1066/1333 SDRAM
SSD	1 x mSATA (from mini-PCIe slot)
Watchdog Timer	Reset: 1 sec.~65535 sec./min. and 1 sec. or 1 min./step
H/W Status	Monitoring system temperature, voltage. Auto trotting control when CPU overheats
Monitor	
Expansion	1 x mini PCIe (Support mSATA)
I/O	0. OATA III. 4. DOOO 4. DOOO 400 405 LDO
MIO	2 x SATA III, 1 x RS232, 1 x RS232/422/485, LPC
USB	10 x USB 2.0 ports (6 for pin header, 4 for edge Connectors)
IrDA Nuvoton NTC6776F (share with COM2)	
DIO	8-bit GPI, 8-bit GPO
Display Chipset	Intel QM67
Display Memory	Share system memory up to 512MB
Display Melliory	DVI mode: 1920 x 1200 at 60Hz
Resolution	LCD/Simultaneous mode: 18 or 24 bits/pixel; Pixel clock 25-112 MHz
	HDMI mode: 1920 x 1200 at 60Hz
Multiple Display	DVI + LVDS, DVI + HDMI, LVDS + HDMI
LCD Interface	Dual channel 18/24-bit LVDS
TV-out	N/A
	One DVI port co-lay with VGA, one for hirose pin header
Built-in Touch	
Screen (Optional)	
Chipset	PenMount 6000
Touch Screen	With 9-pin 2.0mm box header (can be selected to support 4/5/8-wire touch screen)
Interface	
Audio	
AC97 Codec	Realtek ALC892 supports 5.1-CH Audio
Audio Interface	Min In, Line in, Line out (Pin Head 6X2)

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	Oser 5 Marida
Ethernet	
L ANI OLIT	1 x Intel 82574L
LAN Chip	1 x Intel 82579 Gigabit PHY
Ethernet Interface	1000 Base-Tx Gigabit Ethernet compatible
Mechanical &	
Environmental	
Power Requirement	+12V~19V
ACPI	Single power ATX Support S0, S3, S4, S5
ACFI	ACPI 1.0b and 2.0 Compliant
Power Type	AT/ATX
Operating Temp.	32 to 140°F (0 to 60°C)
Operating Humidity	0%~90% relative humidity, non-condensing
Size (L x W)	165mm x 115mm
Weight	TBD

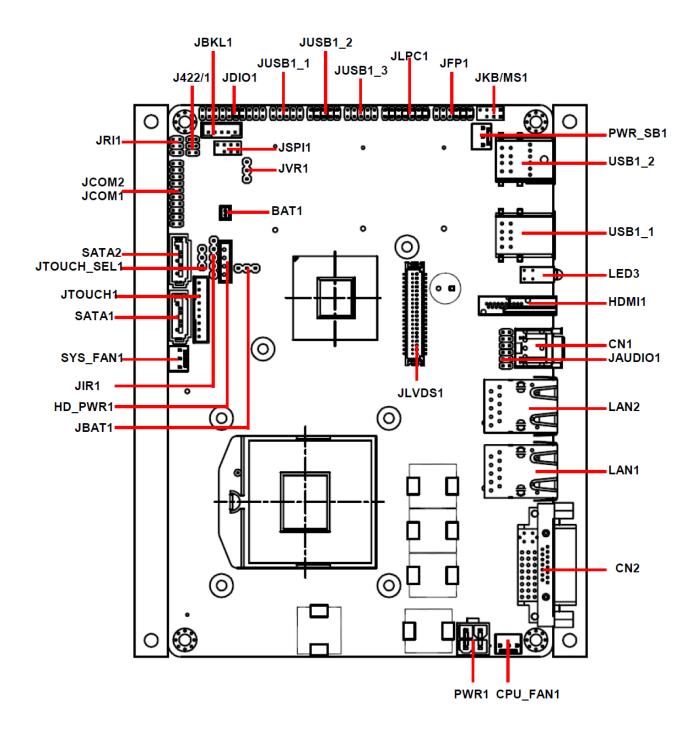
1.6 Architecture Overview – Block Diagram

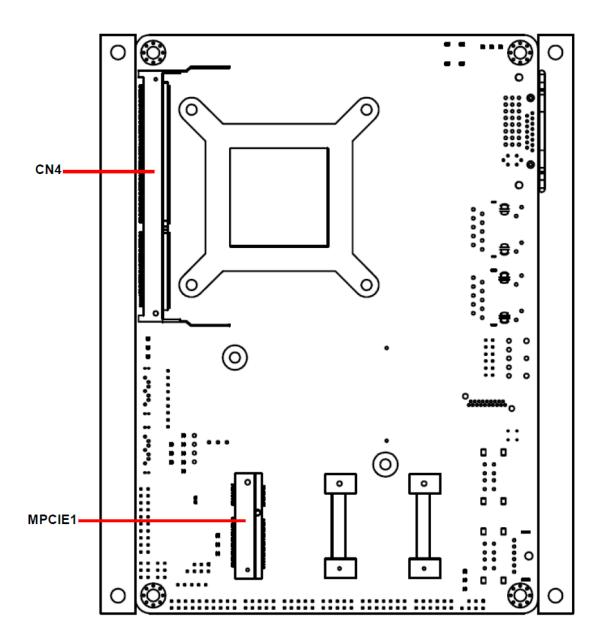
The following block diagram shows the architecture and main components of EPI-QM67.



2. Hardware Configuration

2.1 Product Overview





2.2 Installation Procedure

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

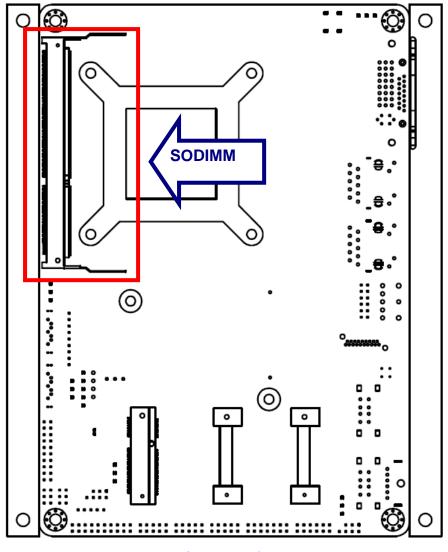
- 1. Turn off the power supply.
- 2. Insert the SODIMM module (be careful with the orientation).
- Insert all external cables for hard disk, floppy, keyboard, mouse, USB etc. except for flat panel. A CRT monitor must be connected in order to change CMOS settings to support flat panel.
- 4. Connect power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



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

2.2.1 **Main Memory**

EPI-QM67 provides one 204-pin DDR3 SODIMM socket, supports up to 8GB DDR3 1066/1333 SDRAM.

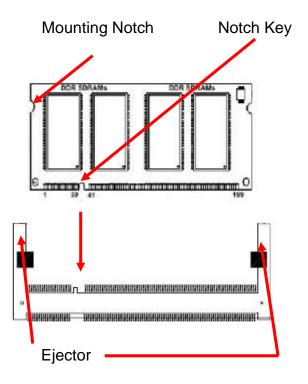


(Rear side)



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

- Locate the SODIMM socket on the board.
- Hold two edges of the SODIMM module carefully. Keep away of touching its connectors.
- Align the notch key on the module with the rib on the slot.
- Firmly press the modules into the socket automatically snaps into the mounting notch. Do not force the SODIMM module in with extra force as the SODIMM module only fit in one direction.



204-pin DDR3 SODIMM

• To remove the SODIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the SODIMM module.



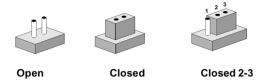
Note:

- (1) Please do not change any DDR3 SDRAM parameter in BIOS setup to increase your system's performance without acquiring technical information in advance.
- (2) Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

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.

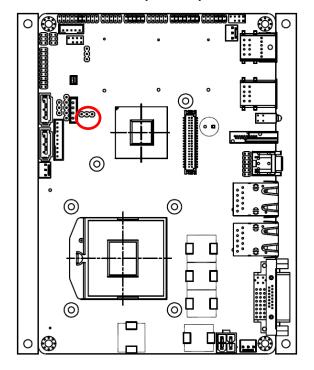
The following tables list the function of each of the board's jumpers and connectors.

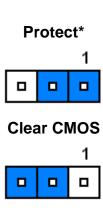
Jumpers		
Label	Function	Note
JBAT1	Clear CMOS	3 x 1 header, pitch 2.54mm
JFP1	AT/ATX mode selector, Front panel & LED settings	6 x 2 header, pitch 2.0mm
JRI1	Serial port 1 - Ring, +5V, +12V power selector	3 x 2 header, pitch 2.54mm
JTOUCH_SEL1	Touch panel connector	3 x 1 header, pitch 2.54mm

Connectors		
Label	Function	Note
BAT1	Battery connector	2 x 1 wafer, pitch 1.25mm
CN1	Audio out connector	Audio jack
CN2	DVI connector	
CN4	204-pin DDR3 SODIMM	
CPU_FAN1	CPU Fan connector	3 x 1 wafer, pitch 2.54mm
HDMI	HDMI connector	
HD_PWR1	HD power connector	4 x 1 wafer, pitch 2.50mm
J422/1	Serial port 2 in RS-422/485 mode	3 x 2 header, pitch 2.0mm
JAUDIO1	Audio Connector	6 x 2 header, pitch 2.0mm
JBKL1	LCD Inverter connector 1	5 x 1 wafer, pitch 2.0mm
JCOM1/2	Serial port 1/2 connector	10 x 2 header, pitch 2.0mm
JDIO1	General purpose I/O connector	10 x 2 header, pitch 2.0mm
JIR1	IrDA connector	5 x 1 header, pitch 2.54mm
JKB/MS1	PS/2 keyboard & mouse connector	4 x 2 header, pitch 2.0mm
JLPC1	(Reversed for BIOS programming)	7 x 2 header, pitch 2.0mm
JLVDS1	LVDS connector	DIN 40-pin wafer, pitch 1.25mm
JSPI1	SPI connector	4 x 2 header, pitch 2.0mm
JTOUCH1	Touch panel connector	9 x 1 wafer, pitch 2.0mm
JUSB1_1	USB connector 4 & 5	5 x 2 header, pitch 2.0mm
JUSB1_2	USB connector 6 & 7	5 x 2 header, pitch 2.0mm
JUSB1_3	USB connector 8 & 9	5 x 2 header, pitch 2.0mm
JVR1	LCD Backlight brightness adjustment	3 x 1 header, pitch 2.54mm
LAN1	RJ-45 Ethernet connector 1	
LAN2	RJ-45 Ethernet connector 2	
LED3	Power & HDD indicator	
MPCIE1	Mini PCIEXPRESS connector	
PWR_SB1	5VSB connector in ATX	3 x 1 wafer, pitch 2.54mm
PWR1	Power connector	2 x 2 wafer, pitch 4.2mm
SATA1	Serial ATA connector 1	
SATA2	Serial ATA connector 2	
SYS_FAN1	System Fan connector	3 x 1 wafer, pitch 2.54mm
USB1_1	USB connector 0&1	
USB1_2	USB connector 2&3	

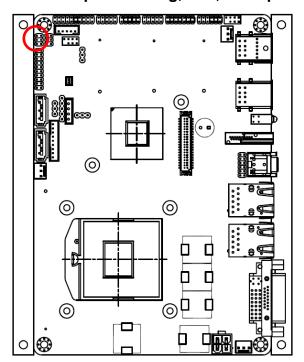
2.4 Setting Jumpers & Connectors

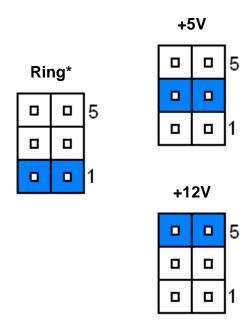
2.4.1 Clear CMOS (JBAT1)





2.4.2 Serial port 1 - Ring, +5V, +12V power selector (JRI1)

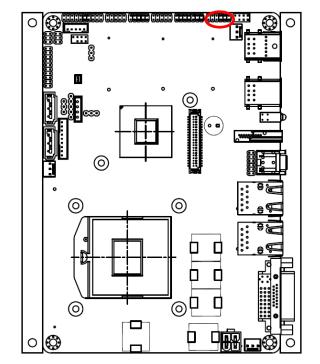




^{*}Default

^{*} Default

2.4.3 AT/ATX mode selector, Front panel & LED settings (JFP1)

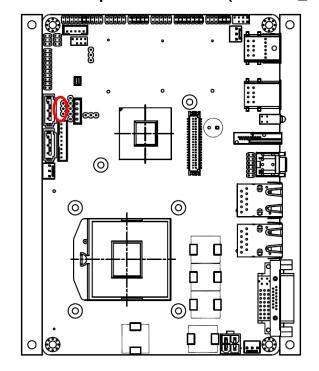


*Default

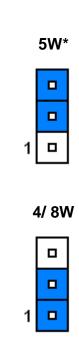
AT*					
11					1
_					
					_
ATX					
11 1					
_					
	0	0	0	0	_

Signal	PIN
PWBT	1, 2
RST#	3, 4
PWR-LED	5, 6
HDD-LED	7, 8
Short: AT MODE	9, 10
Open: ATX MODE	
COPEN#	11, 12

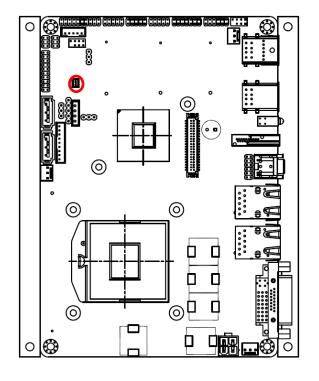
2.4.4 Touch panel connector (JTOUCH_SEL1)



* Default



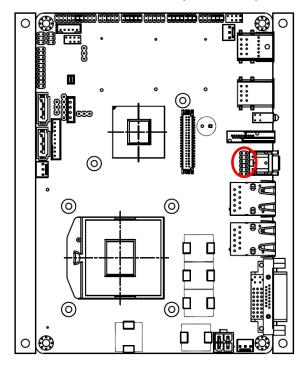
2.4.5 Battery connector (BAT1)

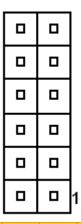




Signal	PIN
GND	2
VBAT	1

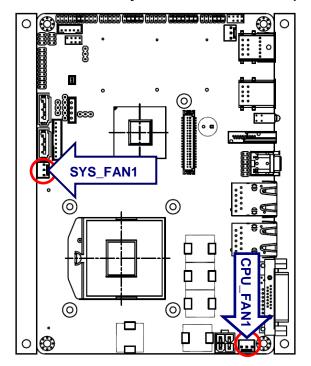
2.4.6 Audio connector (JAUDIO1)





Signal	PIN	PIN	Signal
GND	12	11	MIC1_JD
LINE1_JD	10	9	FRONT_JD
MIC_LIN	8	7	MIC_RIN
LINE_LIN	6	5	LINE_RIN
GND	4	3	GND
LOUT	2	1	ROUT

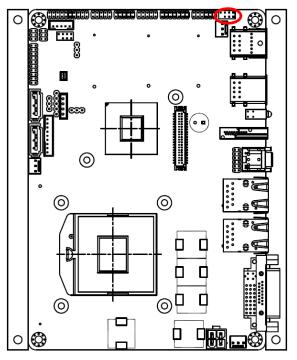
2.4.7 CPU fan / System fan connector (CPU_FAN1/ SYS_FAN1)

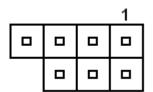




Signal	
GND	1
CPU_FAN_PWR/ SYS_FAN_PWR	2
CPUFANIN/ SYSFANIN	3

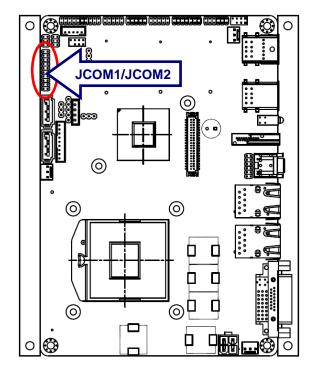
2.4.8 PS/2 keyboard & mouse connector (JKB/MS1)





Signal	PIN	PIN	Signal
		7	NC
MCK	6	5	MDT
VDD	4	3	GND
KCK	2	1	KDT

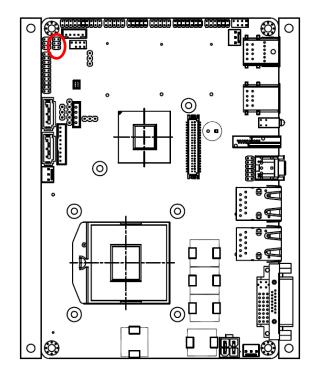
2.4.9 Serial port 1/2 connector (JCOM1/ JCOM2)

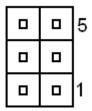


19
1
1
1

Signal	PIN	IN	Signal
NC	20	19	RI2
CTS2	18	17	RST2
DSR2	16	15	GND
DTR2	14	13	TXD2
RXD2	12	11	DCD2
NC	10	9	RI1
CTS1	8	7	RST1
DSR1	6	5	GND
DTR1	4	3	TXD1
RXD1	2	1	DCD1

2.4.10 Serial port 1/2 in RS-422/485 mode connector (J422/1)



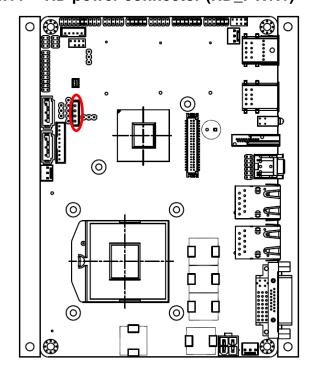


Signal	PIN	PIN	Signal
GND	6	5	+5V
RX+	4	3	TX+
RX-	2	1	TX-

Note: J422/1 is available after

modifying the mode of COM2 in BIOS setting.

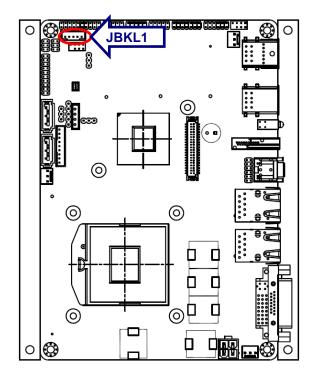
2.4.11 HD power connector (HD_PWR1)





Signal	PIN
+5V	4
+5V	3
GND	2
GND	1

2.4.12 LCD Inverter Connector 1 (JBKL1)



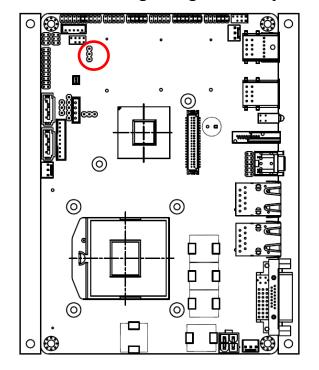


Signal	PIN
+5V	5
BRIGHT	4
BLK_ON	3
GND	2
+12V	1

2.3.12.1 Signal Description – LCD Inverter Connector (JBKL1)

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

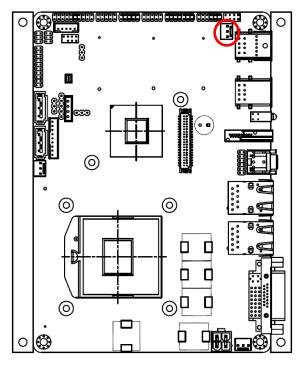
2.4.13 LCD Backlight brightness adjustment (JVR1)





Signal	PIN
GND	3
BRIGHT	2
+5V	1

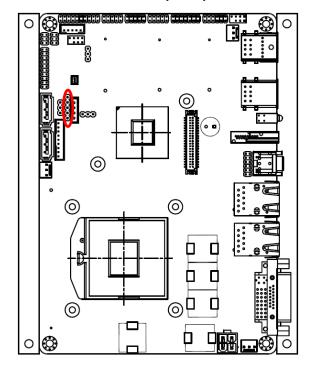
2.4.14 5VSB connector in ATX (PWR_SB1)

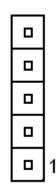




Signal	PIN
ATX5VSB	3
GND	2
PS_ON#	1

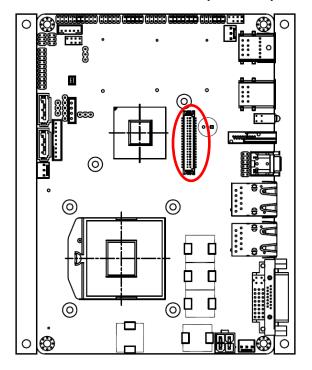
2.4.15 IrDA connector (JIR1)

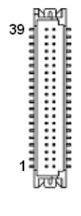




Signal	PIN
TX	5
GND	4
RX	3
NC	2
+5V	1

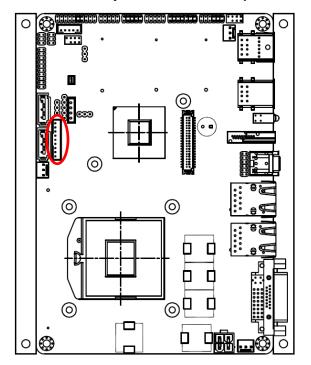
2.4.16 LVDS connector (JLVDS1)





Signal	PIN	PIN	Signal
+12V	39	40	+12V
GND	37	38	GND
CLK2M	35	36	CLK1M
CLK2P	33	34	CLK1P
GND	31	32	GND
YA7M	29	30	YA6M
YA7P	27	28	YA6P
GND	25	26	GND
YA5M	23	24	YA4M
YA5P	21	22	YA4P
GND	19	20	GND
YA3M	17	18	YA2M
YA3P	15	16	YA2P
GND	13	14	GND
YA1M	11	12	YA0M
YA1P	9	10	YA0P
GND	7	8	GND
SPCLK	5	6	SPDATA
+3.3V	3	4	+5V
+3.3V	1	2	+5V

2.4.17 Touch panel connector (JTOUCH1)

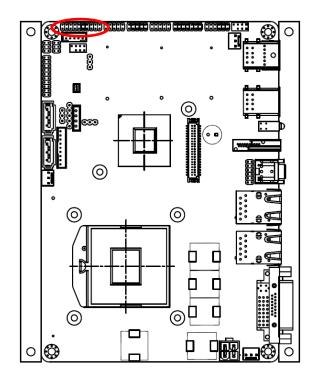


Signal	PIN
TOUCH_GND	9
Υ-	8
Y+	7
Χ-	6
X+	5
SENSE	4
Y+	3
Χ-	2
X+	1



PIN	4-WIRE	5-WIRE	8-WIRE
9	GND	GND	GND
8	Тор	UL	Top Excite
7	Bottom	UR	Bottom Excite
6	Left	LL	Left Excite
5	Right	LR	Right Excite
4	N/A	Sense	Top Sense
3	N/A	N/A	Bottom Sense
2	N/A	N/A	Left Sense
1	N/A	N/A	Right Sense

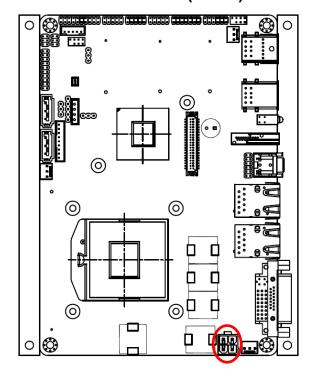
2.4.18 General purpose I/O connector (JDIO1)



19								1
	_	0	_	_		_	_	0

Signal	PIN	PIN	Signal
+5V	20	19	GND
SMBDATA_MAIN	18	17	SMBCLK_MAIN
DIO_GP17	16	15	DIO_GP27
DIO_GP16	14	13	DIO_GP26
DIO_GP15	12	11	DIO_GP25
DIO_GP14	10	9	DIO_GP24
DIO_GP13	8	7	DIO_GP23
DIO_GP12	6	5	DIO_GP22
DIO_GP11	4	3	DIO_GP21
DIO_GP10	2	1	DIO_GP20

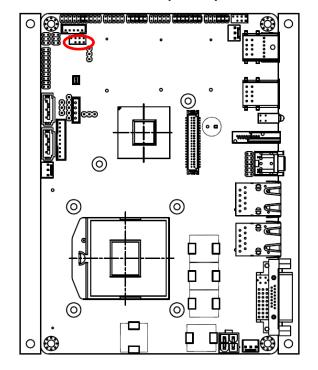
2.4.19 Power connector (PWR1)

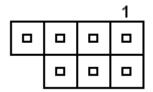




Signal	PIN	PIN	Signal
VIN	4	3	VIN
GND	2	1	GND

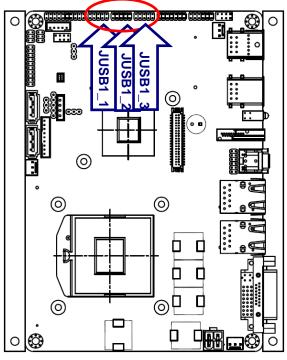
SPI connector (JSPI1) 2.4.20

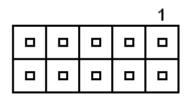




Signal	PIN	PIN	Signal
		7	HOLD#
SPI_SI	6	5	SPI_SO
SPI_CLK	4	3	SPI_CS#0
GND	2	1	+3.3V

USB connector 4&5/ 6&7/ 8&9 (JUSB1_1/ JUSB1_2/ JUSB1_3) 2.4.21





Signal	PIN	PIN	Signal
+5V	1	2	GND
USB_DN4/6/8	3	4	GND
USB_DP4/6/8	5	6	USB_DP5/7/9
GND	7	8	USB_DN5/7/9
GND	9	10	+5V

Note: Wrong USB cable configuration with

USB devices might damage USB devices.

3. BIOS Setup

3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

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

While the BIOS is in control, the Setup program can be activated in one of two ways: By pressing immediately after switching the system on, or By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

Press F1 to Continue, DEL to enter SETUP

3.3 Using Setup

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

Button	Description
↑	Move to previous item
\downarrow	Move to next item
←	Move to the item in the left hand
\rightarrow	Move to the item in the right hand
Esc key	Main Menu Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

• Navigating Through The Menu Bar

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



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

• To Display a Sub Menu

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

3.4 Getting Help

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

3.5 In Case of Problems

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

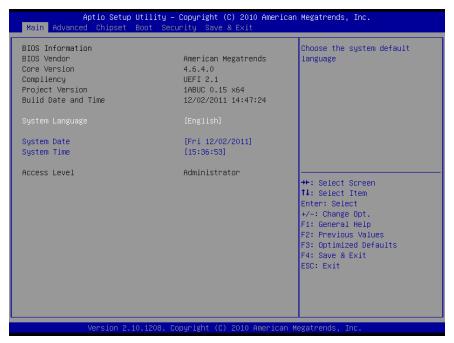
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and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

3.6 BIOS setup

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

3.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.



3.6.1.1 System Language

This option allows choosing the system default language.

3.6.1.2 System Date

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

3.6.1.3 System Time

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



Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

Visit the Avalue website (<u>www.avalue.com.tw</u>) to download the latest product and BIOS information.

3.6.2 Advanced Menu

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



3.6.2.1 PCI subsystem Settings



Item	Options	Description
PCI ROM Priority	Legacy ROM, EFI Compatible ROM	In case of multiple Optional ROMs (Legacy and EFI Compatible), specifies what PCI
		Option ROM to launch.

	32 PCI Bus Clocks,	
	64 PCI Bus Clocks,	
	96 PCI Bus Clocks,	
PCI Latency Timer	128 PCI Bus Clocks,	Value to be programmed into PCI Latency
	160 PCI Bus Clocks,	Register.
	192 PCI Bus Clocks,	
	224 PCI Bus Clocks,	
	248 PCI Bus Clocks	
VGA Palette Snoop		Enable or Disable VGA Palette Registers Snooping.
PERR# Generation		If ENABLED allows generation of Extended
1 ERR# Generation		Synchronization patterns.
SERR# Generation		Enables or Disables PCI Devices to Generate
3LKK# Generation	Enabled,	SERR#.
Relaxed Ordering	Disabled	Enables or Disables PCI Express Device
Relaxed Ordering		Relaxed Ordering.
Extended Tag		If ENABLED allows Devices to use 8-bit Tag
Extended rag		field as a requester.
No Snoop		Enables or Disables PCI Express Devices No
то споор		Snoop option.
	Auto	
	128 Bytes,	
	256 Bytes,	Set Maximum Payload of PCI Express Device
Maximum Payload	512 Bytes,	or allow System BIOS to select the value.
	1024 Bytes,	, , , , , , , , , , , , , , , , , , , ,
	2048 Bytes,	
	4096 Bytes	
	Auto	
	128 Bytes,	0.4 Marian as Basel Base and 0' as 4.50'
	256 Bytes,	Set Maximum Read Request Size of PCI
Maximum Read Request	512 Bytes,	Express Device or allow System BIOS to
	1024 Bytes,	select the value.
	2048 Bytes,	
	4096 Bytes	0.441. 40041
ACDM Common and	Disable,	Set the ASPM Level: Force L0 – Force all links
ASPM Support	Auto,	to L0 State: Auto – BIOS auto configure:
	Force L0	DISABLE – Disables ASPM
Extended Synch	Enable,	If ENABLED allows generation of Extended
,	Disable	Synchronization patterns.

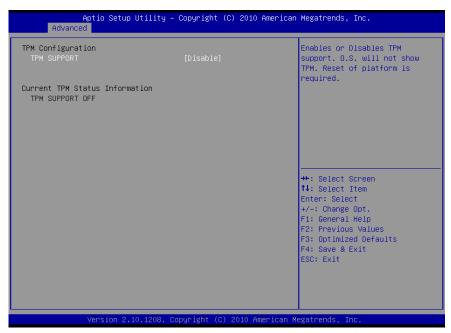
3.6.2.2 ACPI Settings

You can use this item to set up ACPI Configuration.



Item	Options	Description
Enable ACPI Auto Configuration	Dischlad	Enables or Disables BIOS ACPI Auto
Enable Act i Auto comiguration		Configuration.
Enable Hibernation	Disabled, Enabled	Enables or Disables System ability to
	Enabled	Hibernate (OS/S4 Sleep State). This option
		may be not effective with some OS.
	Suspend Disable,	Select the highest ACPI sleep state the
ACPI Sleep State	S1 (CUP Stop Clock),	system will enter, when the SUSPEND button
	S3 (Suspend to RAM)	is pressed.
Lock Legacy Resources	Disabled,	Enables or Disables lock of legacy resources
Deep S5	Enabled	Deep S5 for power saving

3.6.2.3 Trusted Computing



Item	Options	Description
TPM SUPPORT	Disabled,	Enables or Disables TPM support. O.S will not
	Enabled	show TPM. Reset of platform is required.
Current TPM Status Information	Displays the TPM status information [No TPM Hardware]	

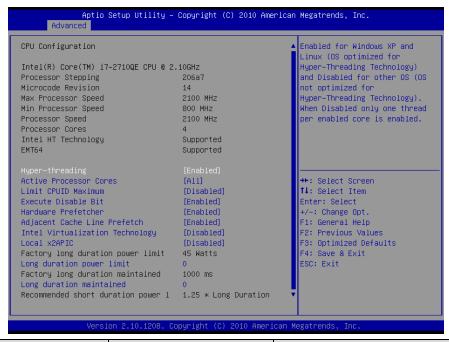
3.6.2.4 S5 RTC Wake settings



Item	Options	Description
Wake system with Fixed Time	Disabled,	Enables or disables system wake on alarm event. When enabled, System will wake on the hr::min::sec specified
Wake system with Dynamic Time	Enabled	Enables or disables system wake on alarm event. When enabled, System will wake on the current time + Increase minutes (s)

3.6.2.5 CPU Configuration

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



Item	Options	Description
Hyper-threading	Disabled Enabled	Enabled for Windows XP and Linux (OS optimized for hyper-threading technology) and disabled for other OS (OS not optimized for hyper-threading technology). When disabled only one thread per enabled core is enabled.
Active Processor Cores	All 1/2/3	Number of cores to enable in each processor package
Limit CPUID Maximum		Disabled for Windows XP
Execute Disable Bit		XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)
Hardware Prefetcher	Disabled Enabled	To turn on/off the Mid Level cache (L2) streamer prefetcher.
Adjacent Cache Line Prefetch		To turn on/off prefetching of adjacent cache lines
Intel Virtualization Technology		When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool technology.
Local x2APIC		Enables Local x2APIC. Some OSes do not support this function
Long duration power limit	Long duration power limit in Watts	
Long duration maintained	Time window which the long duration power is maintained	
Short duration power limit	Short duration power limit in Watts	
1-2-3-4-5-6-7-8-Core Ratio Limit	This limit is for 1 core active. 0 means using the factory-configured value.	

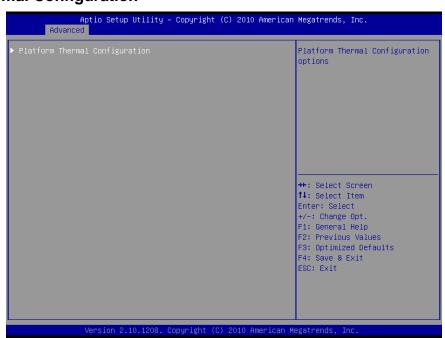
3.6.2.6 SATA Configuration

It allows you to select the operation mode for SATA controller.



ltem	Options	Description
CATA Controllon(s)	Enabled	Enables or Disables SATA Device
SATA Controller(s)	Disabled	Enables or Disables SATA Device
	IDE	
SATA Mode Selection	AHCI	Determines how SATA controller (s) operate
	RAID	
SATA Took Mode	Enabled	Enghlag or Dischlag Toot Made
SATA Test Mode	Disabled	Enables or Disables Test Mode

3.6.2.7 Thermal Configuration

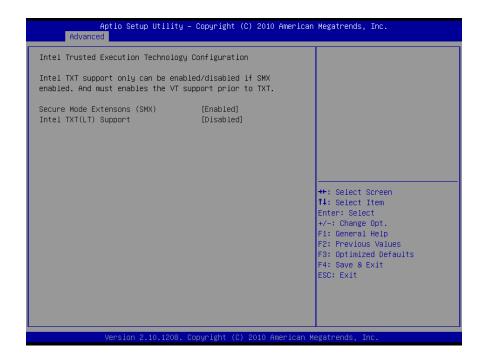


Platform Thermal Configuration		▲ This value controls the
Critical Trip Point	[POR]	temperature of the ACPI Critical Trip Point – the
Active Trip Point Hi Fan Speed	[71 C]	point in which the OS will
Active Trip Point Of Fan Speed	100	shut the system off.
Active Trip Point O Fan Speed		NOTE: 100C is the Plan Of
Active Trip Point 1 Fan Speed	75	Record (POR) for all Intel
Passive Trip Point	[95 C]	mobile processors.
Passive TC1 Value	1	mobile processors.
Passive TC2 Value	5	
Passive TSP Value	10	
ME SMBus Thermal Reporting	[Enabled]	
SMBus Buffer Length	[20]	→+: Select Screen
Thermal Reporting EC PEC	[Disabled]	↑↓: Select Item
DIMM1 TS READ	[Disabled]	Enter: Select
DIMM2 TS READ	[Disabled]	+/-: Change Opt.
DIMM3 TS READ	[Disabled]	F1: General Help
DIMM4 TS READ	[Disabled]	F2: Previous Values
		F3: Optimized Defaults
PCH Thermal Device	[Disabled]	F4: Save & Exit
MCH Temp Read	[Enabled]	ESC: Exit
PCH Temp Read	[Enabled]	
CPU Energy Read	[Enabled]	
CPU Temp Read	[Enabled]	▼

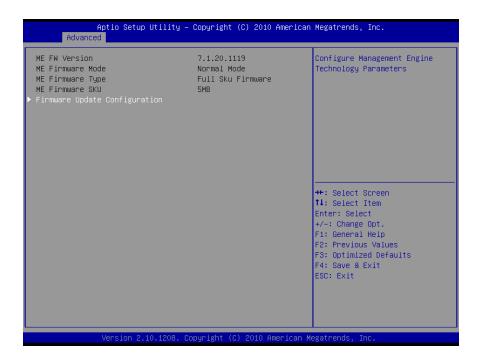
Item	Options	Description
Critical Trip Point	POR 15/23/31/39/47/55/63/71/ 79/87/95/103/111/119C	This value controls the temperature of the ACPI critical Trip Point- the point in which the OS will shut the system off. NOTE: 100C is the Plan Of Record (POR) for all Intel mobile processors.
Active Trip Point Hi Fan Speed	Disabled 15/23/31/39/47/55/63/71/ 79/87/95/103/111/119C	This value controls the temperature of the ACPI Active Trip Point- the point in which the OS will turn the processor fan high.
Active Trip Point 0 Fan Speed	0 ~ 100	Active Trip Point 0 Fan Speed in percentage. Value must be between 0 (Fan off) -100 (Max fan speed). This is the speed at which fan will run when Active Trip Point 0 is crossed.
Active Trip Point Lo Fan Speed	Disabled 15/23/31/39/47/55/63/71/ 79/87/95/103/111/119C	This value controls the temperature of the ACPI Active Trip Point- the point in which the OS will turn the processor fan on low
Active Trip Point 1 Fan Speed	0 ~ 100	Active Trip Point 1Fan speed in percentage. Value must be between 0 (Fan off) – 100 (Max fan speed). This value must be less than Active Trip Point 0 Fan speed. This is the speed at which fan will run when Active Trip 1 is crossed.
Passive Trip Point	Disabled 15/23/31/39/47/55/63/71/ 79/87/95/103/111/119C	This value controls the temperature of the ACPI Passive Trip Point- the point in which the OS will begin throttling the processor
Passive TC1 / TC2 Value	1-16	This value sets the TC1 value for the ACPI Passive Cooling Formula. Range 1-16
Passive TSP Value	2 ~ 32	This item sets the TSP value for the ACPI Passive Cooling Formula. It represents in tenths of a second how often the OS will read the temperature when passive cooling in enabled. Range 2- 32
ME SMBus Thermal Reporting	Disabled, Enabled	Enable/ Disable ME SMBus Thermal Reporting Configuration.
SMBus Buffer Length	1/2/5/9/10/14/20	SMBus Block Read message length for EC.
Thermal Reporting EC PEC	Disabled, Enabled	Enable Packet Error Checking (PEC) for SMBus Block Read.

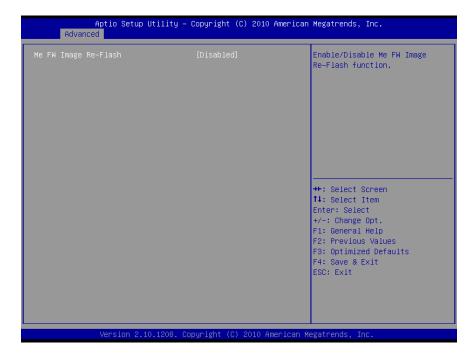
DIMM1/2/3/4 TS READ		DIMM1/2/3/4 Thermal Sensor Read Enable
PCH Thermal Device		Enable or Disable PCH Thermal Device (D31:F6)
MCH Temp Read		MCH Temperature Read Enable
PCH Temp Read	Disabled,	PCH Temperature Read Enable
CPU Energy Read	Enabled	CPU Energy Read Enable
CPU Temp Read		CPU Temperature Read Enable
Alert Enable Lock		Lock all Alert Enable settings
PCH Alert		PCH Alert pin enable
DIMM Alert		DIMM Alert pin enable
PCH Hot Level Select	PCHHOT#: this signal is used to indicate a PCH temperature out of bounds condition to an external EC, when PCH temperature is greater than value programmed by BIOS. An external pull-up resistor is required in this signal.	

3.6.2.8 Intel TXT (LT) Configuration



3.6.2.9 PCH-FW Configuration





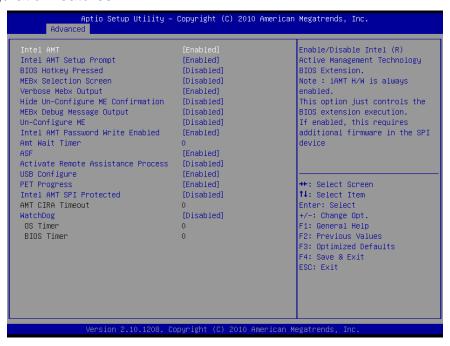
3.6.2.10 Intel Anti-Theft Technology Configuration



Item	Options	Description
Intel Aut: Theft Technology	Enabled	Enable/Disable Intel AT in BIOS for testing
Intel Anti-Theft Technology	Disabled	only
Intel Anti-Theft Technology	1 ~ 64	Set the number of times Recovery attempts
Recovery	1 ~ 04	will be allowed
Enter Intel AT Suspend Mode	Enabled	Paguage that platform to enter Intel AT Made
Enter Intel AT Suspend Mode	Disabled	Request that platform to enter Intel AT Mode

3.6.2.11 AMT Configuration

Intel AMT allows hardware-based remote management, security, power-management, and remote-configuration features.



Item	Options	Description
		Enable/Disable Intel ® Active Management
		Technology BIOS Extension. Note: iAMT H/W
Intel AMT		is always enabled. This option just controls the
		BIOS extension execution. If Enabled, this
		requires additional firmware in the SPI device
Intel AMT Setup Prompt		Enable/Disable Intel AMT Setup Prompt to
inter Aim i Setup Frompt		wait for hot-key to enter setup.
BIOS Hotkey Pressed	Disabled	Enable/Disable BIOS Hotkey Pressed
MEBx Selection Screen	Enabled	Enable/Disable MEBx Selection Screen
Verbose MEBx Output		Enable/Disable Verbose MEBx Output
Hide Un-configure ME		Hide Un-configure ME without password
Configuration		Confirmation Prompt.
MEBx Debug Message Output		Enable MEBx Debug Message Output
Un-configure ME		Un-configure ME without password
Intel AMT Password Write		Enable/Disable Intel AMT Password Write.
Enable		Password is writable when set to Enable
AMT Wait time	Set time to wait before sen	ding ASF_GET_BOOT_OPTIONS.
ASF		Enabled/Disabled alert specification Format.
Active Remote Assistance		Trigger CIRA boot.
Process		Higger CIRA boot.
USB Configure	Disabled	Enabled/Disabled USB configure function.
PET progress	Enabled	User can Enabled/Disabled PET Events
PET progress		progress to receive PET events or not
Intel AMT SPI Protected		Enabled/Disabled Intel AMT SPI write protect.
WatchDog Timer		Enable/Disable Watchdog Timer.

3.6.2.12 USB Configuration

The USB Configuration menu helps read USB information and configures USB settings.



Item	Options	Description
USB Device	Display how many devices are connected.	
Legacy USB Support	Enabled 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 Enabled	This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
USB transfer time-out	1 sec 5 sec 10 sec 20 sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 sec 20 sec 30 sec 40 sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device Power-up delay	Auto Manual	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken form Hub descriptor.
Mass Storage Devices	Auto Floppy Forced FDD Hard Disk CD-ROM	Mass storage device emulation type."AUTO" enumerates devices according to their media format. Optical drives are emulated as "CDROM", drives with no media will be emulated according to a drive type.

3.6.2.13 Super IO Configuration

You can use this item to set up or change the Super IO configuration for FDD controllers, parallel ports and serial ports. Please refer to 3.5.2.13.1 and 3.5.2.13.2 for more information.



Item	Options	Description
Restore AC Power Loss	Power Off	Specify what state to go when power is
Restore AC Power Loss	Power On	re-applied after a power failure (G3 state)
	Disabled	
	30 sec	
Watch Dog	40 sec	
	50 sec	Set SIO wetchded timer
	60 sec	Set SIO watchdog timer
	2 min	
	10 min	
	30 min	

3.6.2.13.1 Serial Port 0 Configuration



Item	Option	Description
Serial Port	Enabled,	Use the Serial port option to
Serial Port	Disabled	enable or disable the serial port.
Device Settings	IO=3F8h; IRQ=4,	Enable or Disable Serial Port
Device Settings		(COM)
	Auto	
Ohan aa Cattin aa	IO=3F8h; IRQ=4,	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12	Select an optimal setting for super
Change Settings	IO=2F8h; IRQ=3,4,5,6,7,10,11,12	IO Device.
	IO=3E8h; IRQ=3,4,5,6,7,10,11,12	
	IO=2E8h; IRQ=3,4,5,6,7,10,11,12	
UART 232 422 485	UART 232,	Change the Sorial Port as PS222/
	UART 422,	Change the Serial Port as RS232/ 422/485
	UART485	422/ 400

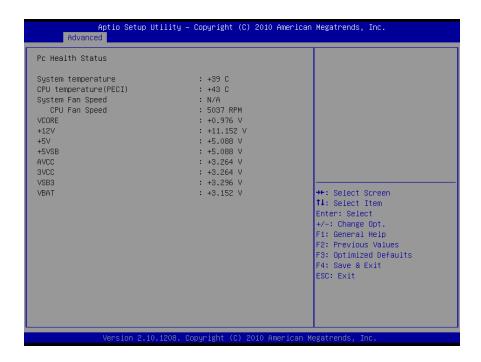
3.6.2.13.2Serial Port 1 Configuration



Item	Option	Description
Serial Port	Enabled, Disabled	Enable or Disable Serial Port
Device Settings	IO=2F8h; IRQ=3	(COM)
Change Settings	Auto IO=2F8h; IRQ=3 IO=3F8h; IRQ=3,4,5,6,7,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Select an optimal setting for super IO Device.
Device mode	Standard Serial Port Mode IrDA 1.0 (HP SIR) Mode ASKIR Mode	Change the Serial Port mode. Select <high speed=""> or <normal mode=""> mode.</normal></high>

3.6.2.14 Hardware Monitor

Displays system health status



The following system temperature, fan speed and voltage are monitored.

Temperature:

- System Temperature
- CPU Temperature

Fan Speed:

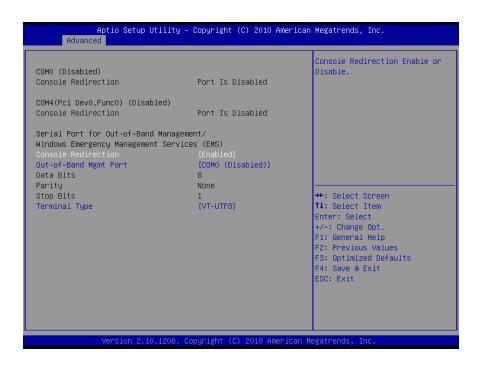
- System Fan Speed
- CPU Fan speed

Voltage:

- VCORE
- +12V
- +5V
- +5VSB
- AVCC
- 3VCC
- VSB3
- VBAT

3.6.2.15 Serial port Console Redirection

Displays COM console information.



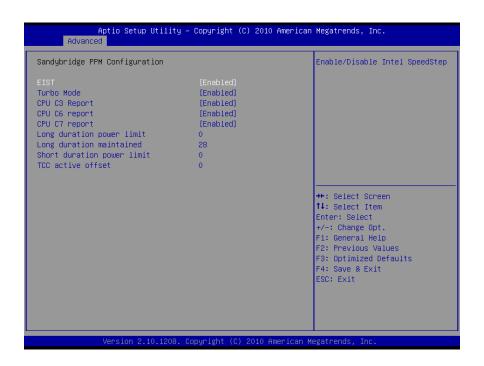
Item	Option	Description
Console Redirection	Enabled	Console Redirection Enable or
Console Redirection	Disabled	Disable.
		Microsoft Windows Emergency
	COM0	Management Services (EMS)
Out-of-Band Mgmt Port	COM4	allows for remote management of
		a Windows Server OS through a
		serial port.
		VT-UTF8 is the preferred terminal
	VT100	type for out-of-band management.
	VT100+	The next best choice is VT100+
Terminal Type	VT-UTF8	and then VT100. See above, in
	ANSI	Console Redirection settings
		page, for more Help with Terminal
		Type/ Emulation.

3.6.2.16 Intel ICC

This Integrated Clock Control option.

Item	Option	Description
		Enable Watchdog Timer
		operation for ICC. If enabled,
Use Watchdog Timer for ICC		watchdog Timer will be started
[Disable]		after ICC-related changes. This
		timer detects platform instability
	Disabled	caused by wrong clock settings.
	Enabled	Disabled: all clocks turned on:
Turn off unused PCI/PCIe		clocks for empty PCI/PCIe slots
clocks [Enable]		will be turned off to save power.
		Platform must be powered off for
		changes to take effect.
		All registers: all ICC registers will
Lock ICC registers[Static only]	All registers	be locked.
	Static only	Static only: only static ICC
		registers will be locked

3.6.2.17 Sandybridge PPM Configuration



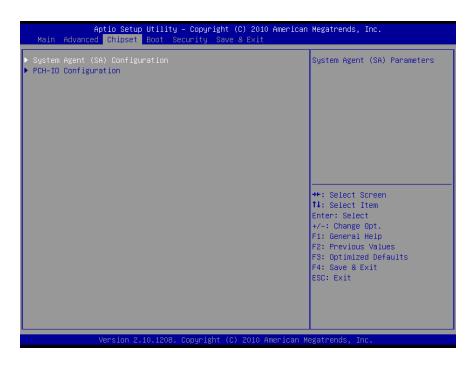
Item	Option	Description
EIST		Enable or Disable Intel
EIST		Speedstep.
Turbo Mode	Disabled	Enable or Disable Intel Turbo
i urbo iviode	Enabled	Mode.
CPU C3/6/7 Report		Enable or Disable CPU C3/6/7
		report to SO.
Long Duration power limit	Long duration power limit in watts, 0 means use factory default.	
Long Duration maintained	Time window which long duration power is maintained.	
Short Duration power limit	Short duration power limit in watts, 0 means use factory default.	
TCC active offset	Offset from the factory TCC activation temperature.	

3.6.2.18 Sandybridge DTS Configuration



Item	Option	Description
		Disabled: ACPI thermal
		management uses EC reported
		temperature values.
		Enabled: ACPI thermal
	Disabled	management uses DTS SMM
CDU DTC	Enabled	mechanism to obtain CPU
CPU DTS		temperature values.
		Out of spec: ACPI Thermal
		management uses EC reported
		temperature values and DTS
		SMM is used to handle Out of
		spec condition.

3.6.3 Chipset

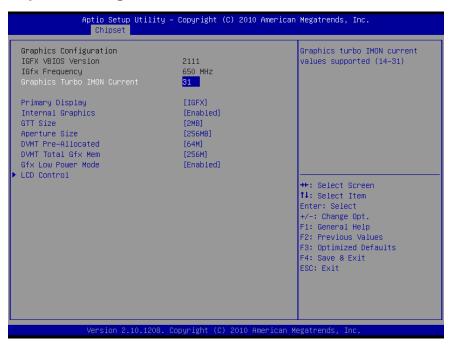


3.6.3.1 System Agent (SA) Configuration



Item	Option	Description
System Agent RC version	Display System Agent RC information.	
VT-d	Disabled	Check to enable VT-d function on
VI-d	Enabled	MCH.
OUAR Resident (Ro R7 50)		Enable or Disable SA CHAP
CHAP Device (B0:D7:F0)		Device.
Thermal Davies (D0-D4-F0)	Disabled	Enable or Disable SA Thermal
Thermal Device (B0:D4:F0)	Enabled	Device.
Enchic NR CRID		Enable or Disable NB CRID
Enable NB CRID		workaround.

3.6.3.1.1 Graphics Configuration



Item	Option	Description
Graphics Turbo IMON Current		Graphics turbo IMON current
Grapines ruibe infort current	14 ~31	values (14 -31)
	Auto	Select which of IGFX/PEG/PCI
Primary Display	IGFX	Graphics device should be
Filliary Display	PEG	Primary Display Or select SG for
	PCI	Switchable Gfx.
	Auto	Keen ICD anabled based on the
Internal Graphics	Disabled	Keep IGD enabled based on the
	Enabled	setup options.
OTT 0:	1MB	Select the GTT size
GTT Size	2MB	Select the GTT size
Aperture Size	[128MB] [256MB] [512MB]	Select Aperture Size
DVMT Pre-Allocated	[0][32M] [64M] [96M] [128M]	Select DVMT 5.0 Pre-Allocated
	[160M] [192M] [224M] [256M]	(Fixed) Graphics Memory size
	[288M] [320M] [352M] [384M]	used by the Internal Graphics
	[416M] [448M] [480M] [512M]	Device.

		Select DVMT5.0 total graphic
DVMT Total Gfx Mem	[128MB][256MB] [MAX]	memory size used by the internal
		Graphics Device.
Cfy Law Bawar Mada	Disabled	This option is applicable for SFF
Gfx Low Power Mode	Enabled	only.

3.6.3.1.1.1 LCD Control



Item	Option	Description
	VBIOS Default	Select the video Device which will be activated during POST. This
		_
	CRT	has no effect if external graphics
Primary IGFX Boot Display	DVI	present. Secondary boot display
	LVDS	selection will appear based on
	HDMI	your selection. VGA modes will be
		supported only on primary
		display.
	VBIOS Default	
	[640x480]	
	[800x600 LVDS][1024x768 LVDS]	
	[1280x1024 LVDS]	
	[1400x1050 LVDS1]	
	[1400x1050 LVDS2]	
	[1600x1200 LVDS]	Select LCD panel used by Internal
LCD Panel Type	[1366x768 LVDS]	Graphics Device by selecting the
	[1920x1080 LVDS]	appropriate setup item
	[1440x900 LVDS]	
	[1600x900 LVDS]	
	[1280x800 LVDS]	
	[1680x1050 LVDS]	
	[1920x1080 LVDS]	
	[2048x1536 LVDS]	

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Panel Scaling	[Auto] [Off] [Force Scaling]	Select the LCD panel scaling option used by the Internal Graphics Device.
ВІА	[Auto] [Disabled] [Level 1] [Level 2] [Level 3] [Level 4] [Level 5]	Auto: GMCH use VBT Default Level n: Enabled with selected Aggressiveness level.
Spread Spectrum clock Chip	[Off] [Hardware] [Software]	Hardware: Spectrum is controlled by Chip. Software: Spectrum is controlled by BIOS.
ALS Support	[Disabled] [Enabled]	Valid only for ACPI.
Active LFP	[No LVDS] [Int-LVDS] [eDP Port-A] [eDP Port-D]	Select the active LFP configuration. No LVDS: VBIOS does not enable LVDS. Int-LVDS: VBIOS enables LVDS driver by Integrated encoder. SDVO LVDS: VBIOS enables LVDS driver by SDVO encoder. eDP Port A:LFP Driven by Int-DisplayPort encoder from Port-A. eDP Port-D: LFP Driven by Int-DisplayPort encoder from Port-O: LFP Driven by Int-DisplayPort encoder from Port-D (through PCH).
Panel Color Depth	[18 Bit] [24 Bit]	Select the LFP panel color depth
LVDS back light mode	PWM DC	Select LVDS back light mode
LVDS DC/PWM	00% 25% 50% 75% 100%	Select LVDS backlight DC/PWM duty

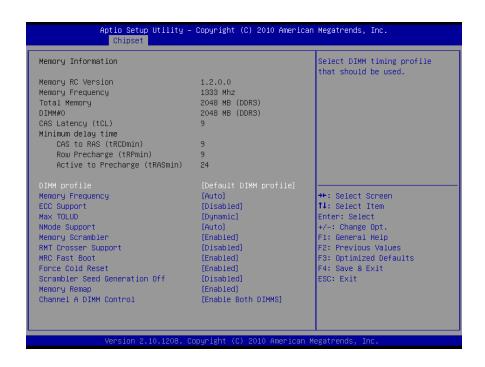
3.6.3.1.2 DMI Configuration



Item	Option	Description
DMI Vc1 Control		Enable or Disable DMI Vc1
DMI Vcp Control	Enabled	Enable or Disable DMI Vcp
DMI Vcm Control	Disabled	Enable or Disable DMI Vcm
DMI Link ASPM Control	Disabled L0s L1 L0sL1	Enable or Disable the control of Active State Power Management on SA side of the DMI Link.
DMI Extended Synch Control	Enabled	Enable or Disable Extended Synchronization
DMI Gen 2	Disabled	Enable or Disable DMI Gen 2

3.6.3.1.3 **Memory Configuration**

Displays system memory information



Item	Option	Description
DIMM profile	[Default DIMM profile] [XMP profile 1] [XMP profile 2]	Select DIMM timing profile that should be used.
Memory Frequency	[Auto] [1067] [1333] [1600] [1867] [2133]	Select Memory Frequency in Mhz.
ECC Support	[Disabled] [Enabled]	Enable or Disable DDR Ecc Support
Max TOLUD NMode Support	[Dynamic] [1 GB] [1.25 GB][1.5 GB] [1.75 GB] [2 GB] [2.25 GB] [2.5 GB] [2.75 GB] [3 GB] [Auto] [1N Mode]	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller. NMode support Option.
Memory Scrambler	[2N Mode]	Enable or Disable Memory Scrambler support.
RMT Crosser Support	[Disabled] [Enabled]	Enable or Disable RMT Crosser Support.

MRC Fast Boot		Enable or Disable MRC fast boot.
		Force cold reset or choose MRC
		cold reset mode, when cold boot
Force Cold Reset		is required during MRC execution.
		Note: If ME 5.0MB is present,
		Force cold reset is required!
Scrambler Seed Generation Off	[Disabled]	Control Memory Scrambler Seed
	[Enabled]	Generation. Enable- do not
		generation scrambler seed.
		Disable-Generation scrambler
		seed always.
Memory Remap		Enable or disable memory remap
		above 4G.
Channel A DIMM Control	Enable both DIMMS	
	Enable DIMM0	Enable or Disable DIMMs on
	Enable DIMM1	channel A.
	Disable both DIMMS	

3.6.3.1.4 Memory Thermal Configuration



Item	Option	Description
Manager Thomas I Manager		Enable or Disable Memory
Memory Thermal Management		Thermal Management
		Enable or Disable memory
PECI Injected Temperature		temperature to be injected to the
		processor vie PECI
		Enable or Disable routing
EVITO# wis TO an Board	Enabled	TS-on-Board's ALERT# and
EXTTS# via TS-on-Board	Disabled	THERM# to EXTTS# pins on the
		PCH.
		Enable or Disable routing
EXTTS# via TS-on-DIMM		TS-on-DIMM's ALERT# to
		EXTTS# pin on the PCH
Virtual Temperature Sensor		Enable or Disable Virtual
(VTS)		Temperature Sensor (VTS)

3.6.3.1.5 GT – Power management Control



Item	Option	Description
GT Info	Processor GT info. Only valid if SNB stepping is DO or above	
RC6 (Pender Standby)		Check to enable render standby
	[Disabled]	support.
GT Overclocking Support	[Enabled]	Enable or Disable GT
		overclocking support.

3.6.3.2 PCH-IO Configuration



User's Manual

Item	Option	Description
PCH LAN Controller		Enable or disable onboard NIC
Mala an LAN	[Disabled]	Enable or disable integrated LAN
Wake on LAN	[Enabled]	to wake the system
		Board Capability –
Poord Canability	SUS_PWR_DN_ACK	SUS_PWR_DN_ACK → Send
Board Capability	DeepSx	Disabled to PCH.
		DeepSx → Show DeepSx Policies
		Control Detection of the Azalia
		device.
	[Disabled]	Disabled=Azalia will be
Azalia	[Enabled]	unconditionally disabled
Azana	[Auto]	Enabled=Azalia will be
		unconditionally Enabled
		Auto= Azalia will be enabled if
		present, disabled otherwise.
Azalia Internal HDMI Codec		Enable or Disable internal HDMI
Azana internal ribini odace		codec for Azalia.
Display Logic		Enable or Disable the PCH
Display Logic		Display logic.
CLKRUN# Logic		Enable the CLKRUN# logic to
OLITICOTO LOGIO		stop the PCI clocks.
SB CRID		Enable or Disable SB Compatible
OD OND	[Disabled]	Revision ID.
SMI Lock	[Enabled]	Enable or Disable SMI lockdown
BIOS Lock		Enable or Disable BIOS Interface
Biod Eddk		lockdown.
GPIO Lock		Enable or Disable GPIO
GFIO LOCK		lockdown.
High Precision Timer		Enable or Disable High Precision
Thight rediction time.		Event Timer
SLP_S4 Assertion Width	1-2 seconds	Select a minimum assertion width
	2-3 seconds	of the SLP_S4# signal
	3-4 seconds	
	4-5 seconds	
Set NAND Management Override		Option to override NAND
	[Disabled]	Management to allow driver or 3 rd
	[Enabled]	parties software to configure the
		NAND module after POST.

3.6.3.2.1 USB Configuration



Item	Option	Description
EHCI1		Control the USB EHCI (USB
EHCI2	[Disabled]	2.0)functions. One
USB Ports Per-Port Disable	[Enabled]	Control each of the USB ports
Control		(0~9) disabling

3.6.4 Boot



Item	Option	Description
Setup Prompt Timeout		Number of seconds to wait for
	1~ 65535	setup activation key.
		65535(0xFFFF)
Poetus Numl ook State	On	Select the Keyboard NumLock
Bootup NumLock State	Off	state
Ordert Doort	[Disabled]	Enables or Disables Quiet Boot
Quiet Boot	[Enabled]	option
		UPON REQUEST -GA20 can be
		disabled using BIOS services.
GateA20 Active	Upon Request	ALWAYS – do not allow disabling
GaleA20 Active	Always	GA20; this option is useful when
		any RT code is executed above
		1MB.
Outies BOM Massacras	Force BIOS	Set display mode for Option ROM
Option ROM Messages	Keep Current	
Interrupt 19 Capture	[Disabled]	Enabled: allows Option ROMs to
	[Enabled]	trap Int 19.
Boot Option #1/2	Sets the system boot order	

3.6.5 Security



Administrator Password

Set setup Administrator Password

User Password

Set User Password

3.6.6 Save and exit



Save changes and Exit

Exit system setup after saving the changes.



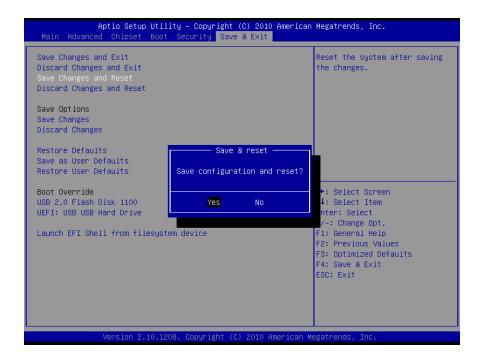
Discard changes and Exit

Exit system setup without saving the changes.



Save changes and Reset

Reset the system after saving the changes.



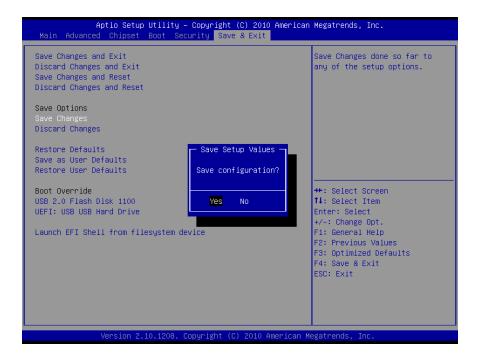
Discard changes and Reset

Reset the system without saving the changes.



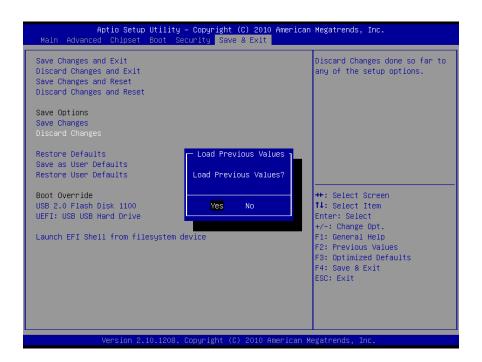
Save changes

Save changes done so for to any of the setup option.



Discard changes

Discard changes done so for to any of the setup option.



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Restore Defaults

Restore/Load default values for all the setup option.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the user defaults to all the setup options

Launch EFI Shell from filesystem device

Attempts to launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices

4. Drivers Installation



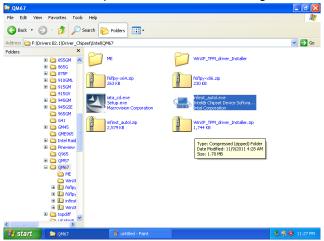
Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver (For Intel QM67)

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_Chipset\Intel\QM67\Intel® Chipset Software Installation Utility.



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



Step1. Locate \[\Driver_Chipset\Intel\ QM67\Intel\(\Bar{\ } \) Chipset Software Installation Utility\infinst_autol.exe \[\] .



Step 2. Click Next.



Step 3. Click Next.



Step 4. Click Next.



Step 5. Select **Setup files** to proceed setup.



Step 6. Click Next to continue



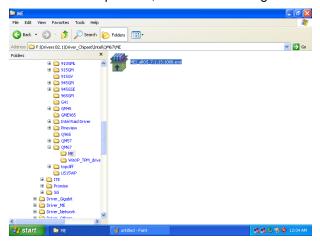
Step 7. Click **Finish** to complete setup.

4.2 Install ME Driver (For Intel QM67)

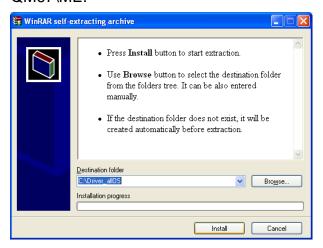
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Driver_Chipset\Intel\QM67\ME



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



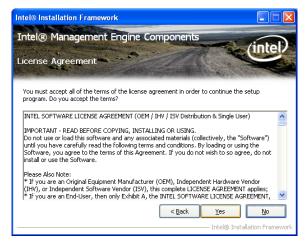
Step1. Locate \(\text{\Driver_Chipset\Intel\} \) QM67\ME.



Step 2. Click Install to start extraction



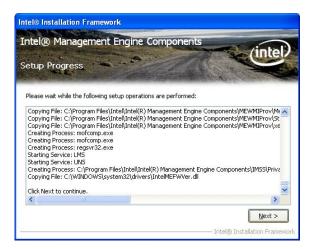
Step 3. Click Next.



Step 4. Click **Yes** to accept license agreement.



Step 5. Click **Next** to proceed setup.



Step 6. Click Next to continue



Step 7. Click Finish to complete setup.

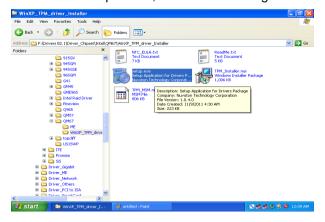
4.3 Install Nuvoton TPM Driver (For Intel QM67)

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_Chipset\Intel\QM67\WinxP_TPM _driver_Installer.



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



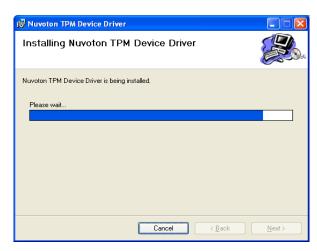
Step1. Locate \[\Driver_Chipset\Intel\ QM67\ \WinxP_TPM_driver_Installer \]



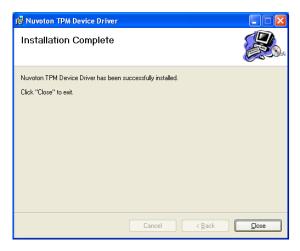
Step 2. Click **Next** to start installation.



Step 3. Click **Next** to accept license agreement



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



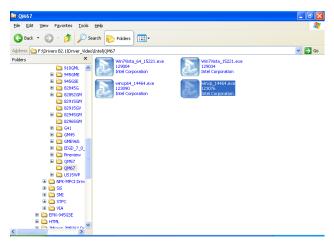
Step 5. Click **Close** to finish installation.

4.4 Install Display Driver (For Intel QM67)

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_Video\Intel\QM67.



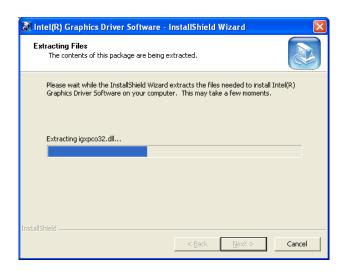
Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



Step 1. Locate 「Driver_Video\Intel\ QM67\Setup.exe _ .



Step 2. Click Next to extract files.



Step 3. Click Next to proceed

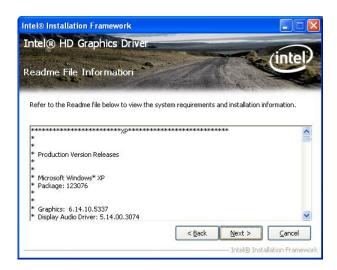


Step 4. Click Next to continue installation

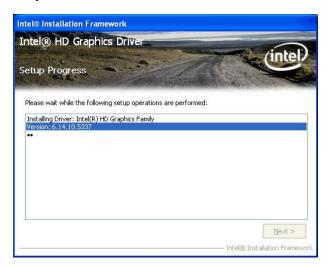


Step 5. Click **Yes** to accept license agreement.

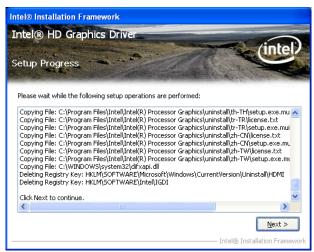
EPI-QM67



Step 6. Click Next.



Step7. Click Next.



Step 8. Click Next to continue



Step 9. Click Finish to complete setup.

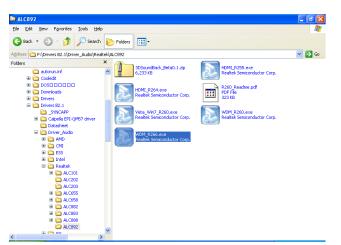
4.5 Install Audio Driver (For Realtek ALC892)

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

\Driver_Audio\Realtek\ALC892.

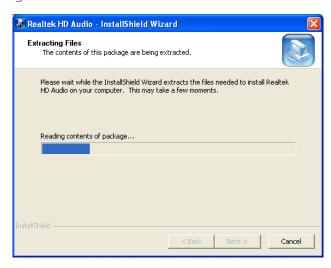


Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.

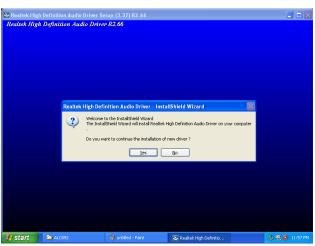


Step 1. Locate

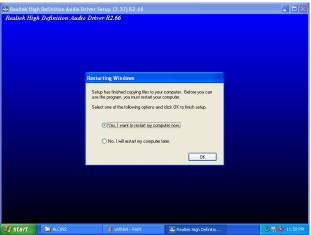
\Driver_Audio\Realtek\ALC892\setup.exe



Step 2. Select Next to extract files



Step 3. Click **Yes** to continue setup.



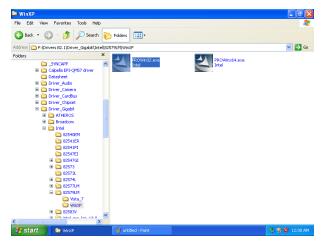
Step 4. Click **OK** to complete the setup.

4.6 Install Ethernet Driver (For Intel 82579LM)

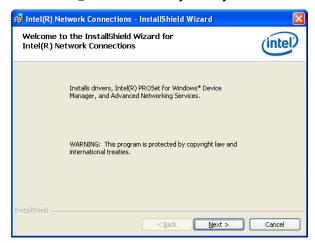
Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to D:\Driver_Gigabit\Intel\82579LM.



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



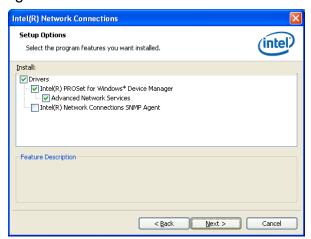
Step 1. Locate \(^\Driver_Gigabit\Intel\\\ 82579LM \(_\) and choose your system OS.



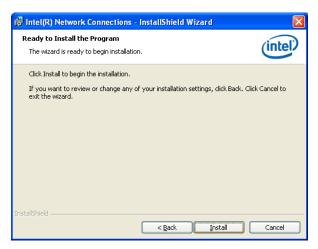
Step 2. Click Next.



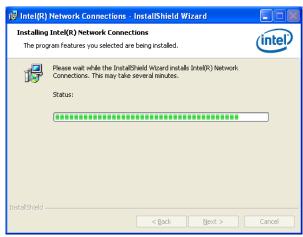
Step 3. Click **Next** to accept license agreement.



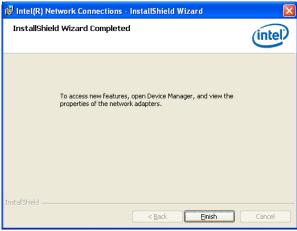
Step 4. Click **Next** after choosing features to install.



Step 5. Click Install to proceed.

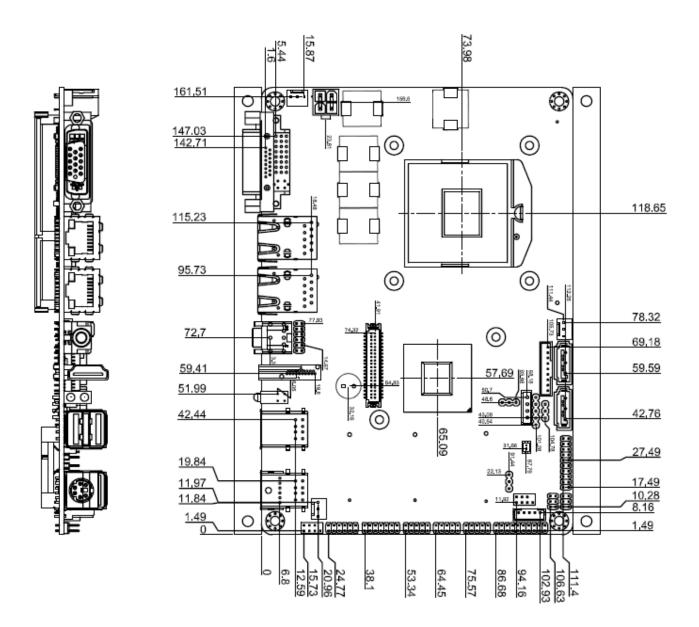


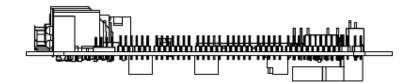
Step 6. Click **Next** to continue installation



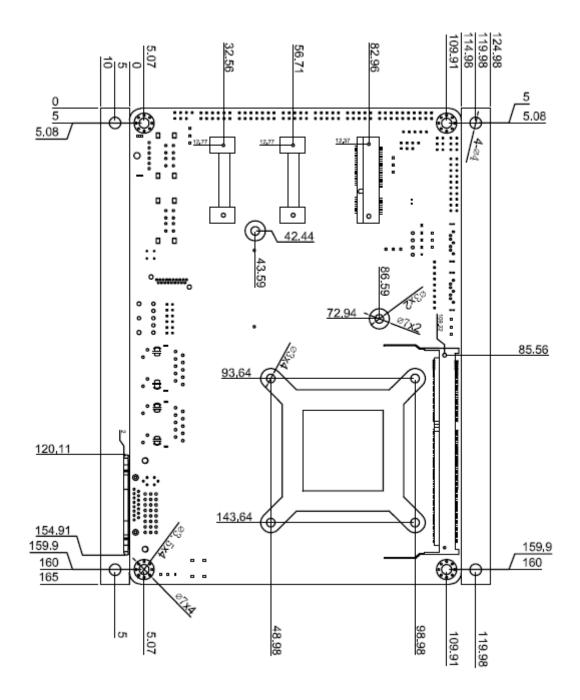
Step 7. Click **Finish** to complete the setup.

5. Mechanical Drawing





Unit: mm



Unit: mm