

# **SI-62 Series**

# **User Manual**

IBASE Technology Inc.

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# **Safety Information**

Your SI-62 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions

### Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation.
   Never insert objects of any kind into the ventilation openings.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0°C and 40°C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THESTORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.



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### Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - > The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not function properly even if you follow the operating instructions.
  - The system was dropped or the cabinet is damaged.

### Lithium-Ion Battery Warning

**CAUTION**: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

### NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

# WARNING HAZARDOUS MOVING PARTS KEEP FINGERS AND OTHER BODY PARTS AWAY



### Acknowledgments

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# **CHAPTER 1 INTRODUCTION**

### **1.1 General Description**

SI-62 digital signage player comes with 2nd/3rd Gen. Intel Core i7/i5/i3 Celeron Quad Core/Dual Core processors and Intel HD Integrated Graphics Engine. It supports DVI-I and HDMI output, 2 x USB 3.0, 1x RJ45 for RS-232, 1x Gigabit LAN giving a great selection for data communication in display applications. The compact design 178 x 150 x 35 mm chassis enables the unit to easily fit into the tightest spaces behind displays. This new signage player is an ideal solution for graphics intensive digital signage applications within retail, commerce, education, healthcare and entertainment.





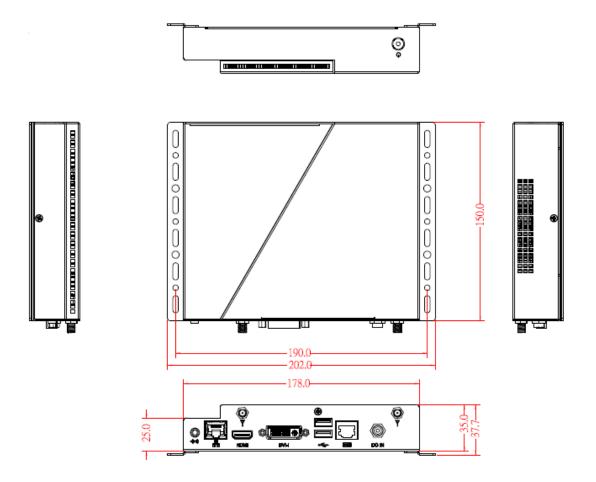
# **1.2 System Specifications**

# **1.2.1** Hardware Specifications

Model Name	SI-62
System Mainboard	IB902A
CPU	2nd/3rd Generation Intel <sup>®</sup> Mobile Core <sup>™</sup> i7/i5/i3/ Celeron <sup>®</sup>
	QC/ DC processors ( TDP <= 35W)
Chipset	Intel <sup>®</sup> Q77 PCH
Memory	2x DDR3 1066/1333/1600 MHz SO-DIMM, Max. 16GB
	(Non-ECC)
I/O Interface	1x HDMI, 1x DVI-I 1x Microjack audio connectors for Line-out 1x Gigabit LAN 2x USB 3.0, 1x RS-232 (RJ45 connector) 1x Power Button with LED light 1x DC Jack
Storage	1x mSATA
	1x SATA 3.0 2.5" HDD Dock
Expansion Slots	1x Mini PCI-E(x1) slots for WiFi, 3G and TV tuner options
Power Supply	60W power adaptor
Construction	SGCC
Chassis Color	Black & White
Mounting	Standard system bracket
Dimensions	178mm(W) x 150mm(D) x 35mm(H)
Operating Temperature	0°C~ 45°C (32°F~113°F)
Storage Temperature	-20° ~ 80°C (-4°F~176°F)
Relative Humidity	5~90% @45°C (non-condensing)
Vibration	mSATA: 5 Grms/5~500Hz random operation
RoHS	Yes
Certification	CE, FCC class B, CCC and UL

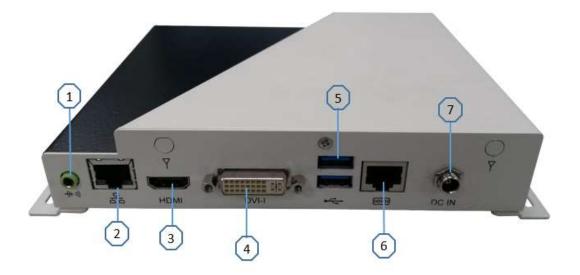
•This specification is subject to change without prior notice.

### 1.2.2 Dimensions



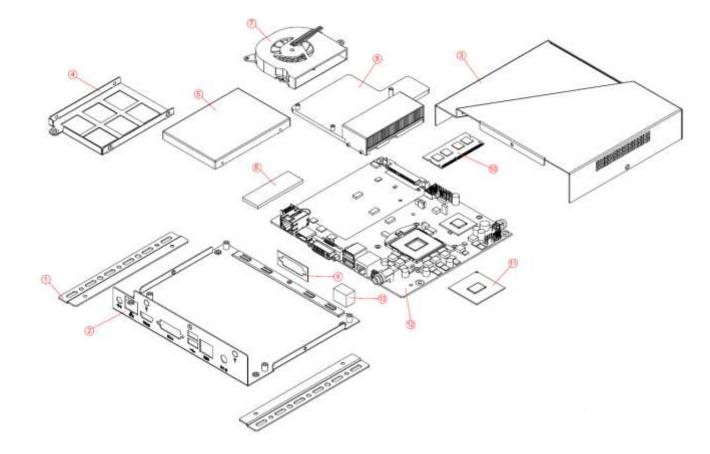


# 1.2.3 I/O View



Item	Connector	Item	Connector
1	Line-out	5	2 x USB 3.0
2	Gigabit LAN	6	RJ45 for RS-232
3	HDMI	7	12V DC in
4	DVI		

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# 1.3 Exploded View of the SI-62 Assembly

# 1.3.1 Parts Description

Part No.	Description	Part No.	Description
1	SI-62 side bracket	2	Base
3	Top cover	4	2.5" HDD bracket
5	2.5" HDD	6	Thermal pad
7	Fan	8	Heatsink
9	Gasket	10	Memory
11	CPU	12	DIP PCBA
13	LAN gasket		



### 1.4 Packing List

Item No.	Description	Qty
1	Driver CD	1
2	Adaptor	1
3	Power Cord	1

# 1.4.1 Optional Items

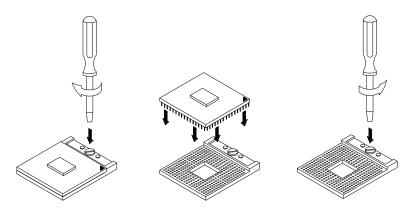
WiFi Solution	Description	
QCOM WiFi module	Wireless LAN Card; 802.11 B/G/N+BT HALF Card [Q802XKN3B] RoHS (A008WIRELESS00700P)	
External Antenna	Wifi Antenna (A055RFA02C2M20800P)	THE REAL PROPERTY
Internal cable-1/2	From Wifi module to Rear/Front panel (A055RFA0000021000P/A055RFA0000032000P)	ILO
Bracket	MPCIE-EXT V-B1 Bracket, RoHS; Extend Half to Full size. (SC2MPCIEEXT0B1100P)	
3G Solution	Description	
ZU 202	Wireless; 3.75G UMTS/HSPA [ZU202] RoHS (A008WIRELESS00520P)	2
ZU 200	Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P)	CEDERAL CAR
Cable	Cable; Antenna-2 30CM P 2pcs (C501ANT0200300000P)	
Antenna	Antenna; 3G, P, 2pcs (A055ANT0921Q2P000P)	
COM Port Cable	Description	
EXT-311	Cable; EXT-311 2-HD 10C, 150CM; DSUB-9F => RJ45-10M RoHS (C501EXT3110A12000P)	
EXT-312	Cable; EXT-312 2-HD 10C, 150CM; DSUB-9M => RJ45-10M RoHS (C501EXT3120A12000P)	
Display Cable	Description	
DVI-22	DVI-22 3-HD, 10CM; DVI => DVI, VGA-15 RoHS (C501DVI2200103000P)	

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# **2 HARDWARE INSTALLATION**

### 2.1 Installing the CPU

The IB902A board supports rPGA988B socket for Intel® Ivy Bridge Dual Core mobile processors. The processor socket comes with a screw to secure the processor. As shown in the picture below, loosen the screw first before inserting the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, fasten the screw. Refer to the figures below.



**NOTE**: Ensure that the CPU heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause your system to hang or be unstable.



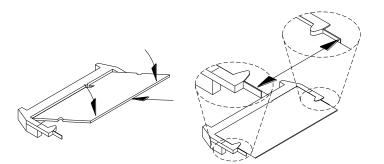
### 2.2 Installing the Memory

The IB902A board supports two DDR3 memory sockets for a maximum total memory of 16GB in DDR3 SO-DIMM memory type.

### Installing and Removing Memory Modules

To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

- 1. Hold the DDR3 module so that the key of the DDR3 module aligned with that on the memory slot.
- 2. Gently push the DDR3 module in an upright position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.
- 3. To remove the DDR3 module, press the clips with both hands.



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# 2.3 Installing the HDD Module

### HDD Module:

1. Remove the four screws on the sides that are used to secure the top cover to the chassis. Once all the screws are removed, from the side, push the cover forward to remove it. See steps1 and 2 in the pictures below.



Step2





- 2. Loosen the mounting screws that secure the HDD to the bracket.
- 3. As in the following the picture's arrowed direction, push out the HDD module.



4. Loosen the four screws and then replace the HDD module.



# **CHAPTER 3 MOTHERBOARD INTRODUCTION**

### **3.1 Introduction**

The IB902A motherboard is based on the latest Intel® QM77 chipset. The platform supports 3rd generation Intel® Core processor family with rPGA988B packing and features an integrated dual-channel DDR3 memory controller as well as a graphics core.

The latest Intel<sup>®</sup> processors provide advanced performance in both computing and graphics quality. This meets the requirement of customers in the gaming, POS, digital signage and server market segment.

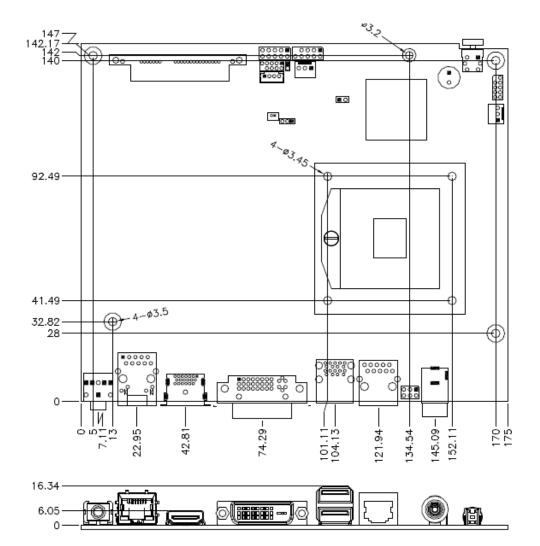
The QM77 chipset is made with 22-nanometer technology that supports Intel's first processor architecture to unite the CPU and the graphics core on the transistor level. The IB902A board utilizes the dramatic increase in performance provided this Intel's latest cutting-edge technology. Measuring 175mm x 147mm, the IB902A offers fast 6Gbps SATA support (1 ports), USB3.0 (2 ports) and interfaces for DVI-I and HDMI displays.

Specification – Mainboard			
Model	IB902A		
Form Factor	Customized		
	CPU		
Model	- Intel <sup>®</sup> 3 <sup>rd</sup> Generation Core <sup>™</sup> I7/I5/I3 mobile processors		
	- rPGA package, 37.5 mm x 37.5mm		
Speed	Up to 3.3GHz		
Cache	Up to 6MB		
Socket	rPGA 988B (Socket G2)		
TDP	35W		
	Chipset		
Model	Intel <sup>®</sup> QM77 Platform Controller Hub		
	25 x 27 mm package size		
	BIOS		
Model	AMI BIOS [16MB SPI ROM]		
Memory			
Max. Support	Intel <sup>®</sup> Ivy-Bridge mobile processors integrated memory controller		
	DDRIII 1066/1333/1600 MHz		
	- SO-DIMM [204-pin parallel type] x 2 (Non-ECC), Max. 16GB		



	Functionality	
	- Intel 3rd Generation Core <sup>™</sup> mobile processor integrated Gfx, Direct X 11,	
Disalau	OpenGL 3.1, Open CL 1.1	
Display	DVI-I X 1 (thru Level shifter ASM1442)	
	HDMI X 1(thru Level shifter ASM1442)	
LAN / PHY	Intel 82579V PCI-E Gigabit LAN for QM77 (Real panel) for single GbE (Rear)	
USB	USB 2.0 host controller [Panther Point integrated]	
	- 1 port via MiniPCle socket; 2 ports via pin-header	
	USB 3.0 host controller [Panther Point integrated] - 2 ports in the rear panel	
Serial ATA	Intel <sup>®</sup> QM77 PCH built-in SATA controller	
Contain the	1x SATA 3.0 2.5" HDD Dock	
Audio	Intel <sup>®</sup> QM77 PCH built-in High Definition Audio controller + Realtek ALC892 w/ 7.1	
	channels (Line In/Mic In/Line Out)	
LPC I / O	Fintek F81866AD-I (128-pin LQFP [14mm x 14 mm])	
	RJ45 connector x1 for COM 1 (RS232) (Rear)	
: A B 4 T	CPU fan & SYS fan (4-pin connector x 2, supports PWM)	
iAMT		
Expansion slot	Mini PCI-Express x 1 port [Full-sized] w/mSATA +USB 2.0 support	
	Edge VO	
Display	1x DVI-I connector (Rear); 1x HDMI connector (Rear)	
LAN / PHY	1x RJ-45 connector (Rear)	
USB	1x USB (3.0) dual stack (Rear)	
LPC I / O	1x RS-232 (RJ45) (Rear)	
Other	1x Power Jack (+12V DC) (Rear); 1x Power On/Reset button with LED (Front)	
	Internal VO	
FAN	CPU fan & SYS fan (4-pin connector x2	
Serial ATA	Intel <sup>®</sup> QM77 PCH built-in SATA controller 1x SATA 3.0 2.5" HDD Dock	
Memory	2x DDR 3 SO-DIMM parallel memory slots	
Expansion slot	Mini PCI-Express x 1 port [Full-sized] w/mSATA +USB 2.0 supporting	
Other	iSMART function, Auto-scheduler, Power resume	
	Add-On Feature	
Watchdog	Yes (256 segments, 0, 1, 2255 sec/min)	
AMT	Yes	
Other	iSMART function	
	Dimensions	
PCB	175mm x 147mm	
	Power Supply	
Power	Power Jack (+12V DC)	
	Environmental	
Temperature	Operating: 0°C~ 40°C (32°F~104°F)	
	Storage: -20oC to 80oC(-4oF~167oF)	
Humidity	10%~90% (non-condensing)	
Shock	IBASE Standard Test	
Vibration	IBASE Standard Test	
Certification	RoHS	
Other	CE/FCC	

### **Board Dimensions**

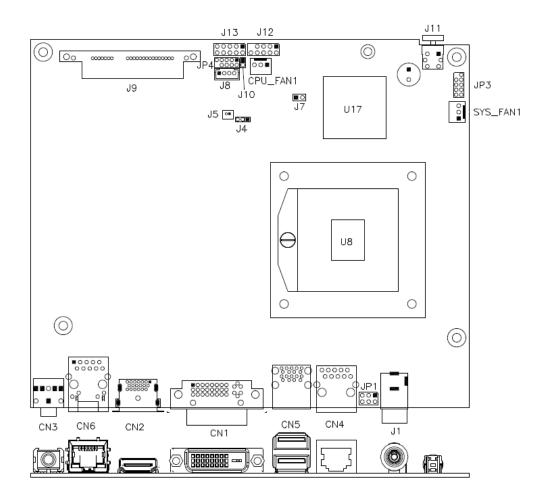


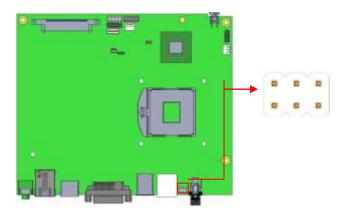


### **3.2 Setting the Jumpers**

Jumpers are used on IB902A to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs.

### Jumper Locations on IB902A

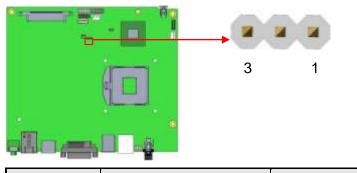




### JP1: COM1 RS232 RI/+5V/+12V Power Setting

JP1	Setting	Function
	Pin 1-3	. 10)/
1	Short/Closed	+12V
	Pin 3-4	Ы
5 🗖 🗖 6	Short/Closed	RI
	Pin 3-5	. 5\/
	Short/Closed	+5V

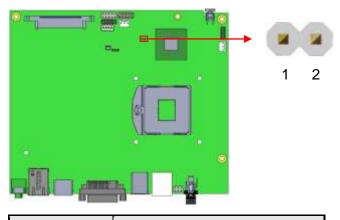
### J4: Clear CMOS Contents



J4	Setting	Function
123	Pin 1-2 Short/Closed	Normal
123	Pin 2-3 Short/Closed	Clear CMOS

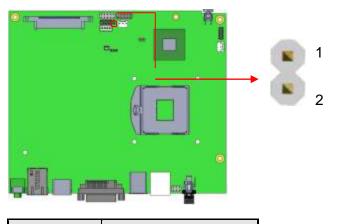


### J7: Flash Descriptor Security Override (Factory use only)



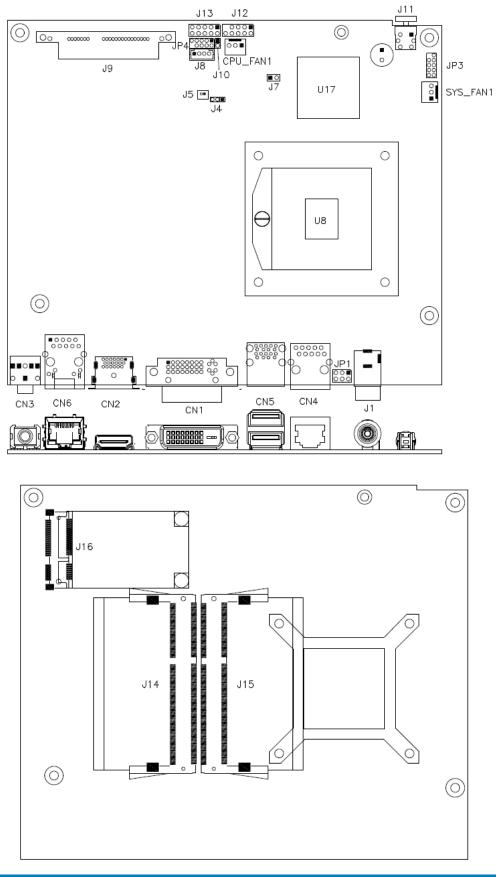
J7	Flash Descriptor Security Override	
Open	Disabled (Default)	
Close	Enabled	

### J10: Reset BTN



J10	Reset BTN			
Open	Disabled (Default)			
Close	Enabled			

## **3.3 Connector Locations on IB902A**





### **CN1: DVI-I Connector**

	Signal Name	Pin #	Pin #	Signal Name
	DATA 2-	1	16	HOT POWER
	DATA 2+	2	17	DATA 0-
ر ش	Shield 2/4	3	18	DATA 0+
	DATA 4-	4	19	SHIELD 0/5
	DATA 4+	5	20	DATA 5-
× −000 − ∞	DDC CLOCK	6	21	DATA 5+
	DDC DATA	7	22	SHIELD CLK
G O	N.C	8	23	CLOCK -
	DATA 1-	9	24	CLOCK +
	DATA 1+	10	C1	Analog Red
	SHIELD 1/3	11	C2	Analog Green
	DATA 3-	12	C3	Analog Blue
	DATA 3+	13	C4	Analog HYNC
	DDC POWER	14	C5	A GROUND2
	A GROUND 1	15	C6	A GROUND3

### **CN2: HDMI Connector**

### **CN3: HDA Audio Connector**

### CN4: LAN Port To COM1

	Pin #	Signal Name				
	1	DSR, Data set ready				
	2	GND, ground				
_	3	GND, ground				
2	4	TXD, Transmit data				
ןנ	5	RXD, Receive data				
	6	DCD, Data carrier detect				
	7	DTR, Data terminal ready				
	8	CTS, Clear to send				
	9	RTS, Request to send				
	10	RI, Ring indicator				

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### **CN5: USB3 Connector**

CN6: Gigabit LAN (82579V)

### J1: +12V Power Supply Connector

### J5: Battery 1/2AA Connector

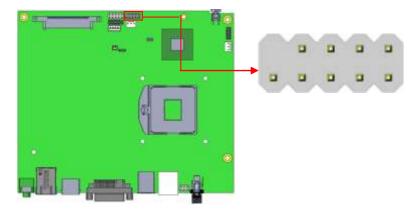
	Pin #	Signal Name
1002	1	BAT
	2	Ground



### J9: SATA3 Connector

### J11: Power Button

### J12: USB2 Connector



Signal Name	Pin #	Pin #	Signal Name
Vcc	1	2	Vcc
D0-	3	4	D1-
D0+	5	6	D1+
Ground	7	8	Ground
Key	9	10	NC

J13: Digital I/O Connector (4 in, 4 out)

	Signal Name	Pin #	Pin #	Signal Name
1 ■ 0 2 0 0 0 0 9 0 0 10	Ground	1	2	+5V
	Out3	3	4	Out1
	Out2	5	6	Out0
	IN3	7	8	IN1
	IN2	9	10	IN0

### J14: DDR3 SO-DIMM Channel A

#### J15: DDR3 SO-DIMM Channel B

### J16: Mini-PCIE Connector and mSATA

### CPU\_FAN1: CPU Fan Power Connector

Г

	Pin #
	1
321	2
	3

Pin #	Signal Name				
1	Ground				
2	+12V				
3	Rotation detection				

### SYS\_FAN2: System Fan Power Connector

	Pin # Signal Name		
	1	Ground	
321	2	+12V	
	3	Rotation detection	

JP3: SPI Flash connector (Factory use only)

JP4: LPC debug Connector (Factory use only)



### **CHAPTER 4 BIOS SETUP**

This chapter describes the different settings available in the AMI BIOS that comes with the board. The topics covered in this chapter are as follows:

#### **BIOS Introduction**

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

#### **BIOS Setup**

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

Press <DEL> or <F2> to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Warning: It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.

### **Main Settings**

Aptio Setup Utility - Copyright © 2011 American Megatrends, Inc.

Main	Advanced	Chipset	Boot	Security	Save & Exit
BIOS Info	rmation				Choose the system default language
Total men	nory		8176 MB (D	DR3)	
Memory F	requency		1333Mhz		
System D	ate		[Tue 01/20/2	013]	→ ← Select Screen $\uparrow \downarrow$ Select Item
System T	ime		[00.00.00]		Enter: Select +- Change Field
					F1: General Help F2: Previous Values F3: Optimized Default
Access Le	evel		Administrato	r	F4: Save ESC: Exit

### System Language

Choose the system default language.

### System Date

Set the Date. Use Tab to switch between Data elements.

### System Time

Set the Time. Use Tab to switch between Data elements.



### **Advanced Settings**

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main	Advanced	Chipset	Boot	Security	v Save & Exit
<ul> <li>ACPI Se</li> <li>Wake up</li> <li>CPU Coil</li> <li>SATA Coil</li> <li>Shutdow</li> <li>iSmart Coil</li> <li>AMT Coil</li> <li>USB Coil</li> <li>F81866</li> <li>F81866</li> <li>CPU PPI</li> </ul>	o event setting nfiguration onfiguration vn Temperature Co Controller nfiguration	ation			<ul> <li>→ ← Select Screen</li> <li>↑ ↓ Select Item</li> <li>Enter: Select</li> <li>+ - Change Field</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Default</li> <li>F4: Save ESC: Exit</li> </ul>

#### Aptio Setup Utility

#### **PCI Subsystem Settings**

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Bus Dri	iver Version		V 2.0502		
PCI 64bit R	esources Handing				
Above 4G	Decoding		Disabled		
PCI Commo	on Settings				→ ← Select Screen
PCI Latency	y Timer		32 PCI B	us Clocks	$\uparrow \downarrow$ Select Item
VGA Palett	e Snoop		Disabled		Enter: Select +- Change Field
PERR# Ge	neration		Disabled		F1: General Help F2: Previous Values
SERR# Ge	neration		Disabled		F3: Optimized Default
PCI Expl	ress Settings				F4: Save ESC: Exit

**Aptio Setup Utility** 

### Above 4G Decoding

Enables or Disables 64bit capable devices to be decoded in above 4G address space (only if system supports 64 bit PCI decoding).

#### **PCI Latency Timer**

Value to be programmed into PCI Latency Timer Register.

#### **VGA Palette Snoop**

Enables or disables VGA Palette Registers Snooping.

#### **PERR# Generation**

Enables or disables PCI device to generate PERR#.

### **SERR# Generation**

Enables or disables PCI device to generate SERR#.

### **PCI Express Settings**

Change PCI Express devices settings.



### **PCI Express Settings**

Main Advanced C	hipset Boot	Security	Save & Exit
PCI Express Device Register Settin			
Relaxed Ordering	Disabled		
Extended Tag	Disabled		
No Snoop	Enabled		
Maximum Payload	Auto		
Maximum Read Request	Auto		
PCI Express Link Register Settings			
ASPM Support	Disabled		
WARNING: Enabling ASPM may ca	use Disabled		
some PCI-E devices to f	ail		
Extended Synch	Disabled	_→	← Select Screen
		1	↓ Select Item
Link Training Retry	5		nter: Select - Change Field
Link Training Timeout (uS)	100	F	1: General Help
Unpopulated Links	Keep Link ON	F F	2: Previous Values 3: Optimized Default 4: Save ESC: Exit

**Aptio Setup Utility** 

#### **Relaxed Ordering**

Enables or disables PCI Express Device Relaxed Ordering.

#### Extended Tag

If ENABLED allows device to use 8-bit Tag field as a requester.

#### No Snoop

Enables or disables PCI Express Device No Snoop option.

#### **Maximum Payload**

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

#### Maximum Read Request

Set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

### **ASPM Support**

Set the ASPM Level: Force LOs – Force all links to LOs State: AUTO – BIOS auto configure: DISABLE – Disables ASPM.

### **Extended Synch**

If ENABLED allows generation of Extended Synchronization patterns.

### Link Training Retry

Defines number of Retry Attempts software will take to retrain the link if previous training attempt was unsuccessful.

### Link Training Timeout (uS)

Defines number of Microseconds software will wait before polling 'Link Training' bit in Link Status register. Value range from 10 to 1000 uS.

#### **Unpopulated Links**

In order to save power, software will disable unpopulated PCI Express links, if this option set to 'Disable Link'.



### **ACPI Settings**

#### **Aptio Setup Utility**

Main	Advanced	Chipset	Boot	Se	ecurity	Save & Exit	
ACPI Settin	ngs				→ <i>←</i>	Select Screen	
Enable Hibernation Enabled			↑↓ Select Item Enter: Select				
ACPI Sleep	o State	S1 only(CPU S	Stop Clock)			ange Field neral Help	
Lock Lega	cy Resources	Disabled				evious Values timized Default	
S3 Video F	Repost	Disabled			F4: Sa	ve ESC: Exit	

### **Enable Hibernation**

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

### **ACPI Sleep State**

Select ACPI sleep state the system will enter, when the SUSPEND button is pressed.

### Lock Legacy Resources

Enabled or Disabled Lock of Legacy Resources.

### S3 Video Repost

Enable or disable S3 Video Repost.

#### Wake up event settings

Aptio Setup Utility				
Main	Advanced	Chipset	Boot	Security Save & Exit
Wake on F Wake on F	Ring PCIE Wake Event	Disabled Disabled		<ul> <li>→ ← Select Screen</li> <li>↑ ↓ Select Item</li> <li>Enter: Select</li> <li>+- Change Field</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Default</li> <li>F4: Save ESC: Exit</li> </ul>

### Wake on PCIE PME Wake Event

The options are Disabled and Enabled.

### **CPU** Configuration

			Aprilo Oet	. ,		
Main	Advanced	Chipset	Boot	Security	Save	e & Exit
CPU Confi	guration					
Intel® Core	e ™ i5-3610ME CP	U @ 2.70GHz				
Processor	Stepping		306a9			
Microcode	Revision		С			
Max CPU S	Speed		2700 MHz			
Min CPU S	speed		1200 MHz			
CPU Spee	d		2700 MHz			
Processor	Cores		2			
Intel HT Te	echnology		Supported	l		
Intel VT-x	Technology		Supported	l		
Intel SMX	Technology		Supported	l		
64-bit			Supported			→ ← Select Screen
Hyper-thre	ading		Enabled			↓ Select Item
Active Proc	cessor Cores		All			Enter: Select +- Change Field
Limit CPUI	D Maximum		Disabled			F1: General Help
Execute Di	sable Bit		Enabled			F2: Previous Values F3: Optimized Default
Intel Virtua	lization Technology		Disabled			F4: Save ESC: Exit
Adjacent C	ache Line Prefetch		Enabled			

#### Aptio Setup Utility

#### Hyper-threading

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**

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.)

#### Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

#### Adjacent Cache Line Prefetch

To turn on/off prefetching of adjacent cache lines.



# **SATA Configuration**

SATA Devices Configuration.

	Aptio Setup Utility									
Main	Advanced	Chipset	Boot	Security	v Save & Exit					
SATA Cor SATA Mod	ntroller(s) de Selection		Enabled AHCI							
SATA Por	tO		Empty		→ ← Select Screen					
Softw	are Preserve		Unknown		↑↓Select Item Enter: Select					
SATA Por	t5		Empty		+- Change Field F1: General Help F2: Previous Values					
Softw	are Preserve		Unknown		F2: Previous values F3: Optimized Default F4: Save ESC: Exit					

# SATA Controller(s)

Enable / Disable Serial ATA Controller.

# **SATA Mode Selection**

(1) IDE Mode.

(2) AHCI Mode.

# Shutdown Temperature Configuration

Aptio Setup Utility	
---------------------	--

Main	Advanced	Chipset	Boot	Securit	y Save & Exit
APCI Shu	tdown Temperatur	e	Disabled	1 E + F F	<ul> <li>Select Screen</li> <li>Select Item</li> <li>nter: Select</li> <li>Change Field</li> <li>General Help</li> <li>Previous Values</li> <li>Optimized Default</li> <li>Save ESC: Exit</li> </ul>

## **ACPI Shutdown Temperature**

The default setting is Disabled.

#### **iSmart Controller**

#### **Aptio Setup Utility**

Main	Advanced	Chipset	Boot S	Security	/ Sav	/e & Exit
iSmart Co	ontroller					
Power-Or	n after Power failure	e	Disable	-	↑ ↓ Se	Select Screen lect Item Select
Schedule	Slot 1		None			ange Field neral Help
Schedule	Slot 2		None	1	F3: Op	evious Values ptimized Default ave ESC: Exit

#### **ISmart Controller**

Setup the power on time for the system.

# Schedule Slot 1 / 2

Setup the hour/minute for system power on.



#### **AMT Configuration**

Aptio Setup Utility								
Main	Advanced	Chipset	Boot	Security	Save & Exit			
Intel AMT			Enabled					
BIOS Hotk	ey Pressed		Disabled					
MEBx Sele	ection Screen		Disabled					
Hide Un-C	Hide Un-Configure ME Confirmation							
Un-Config	Un-Configure ME							
Amt Wait 1	Timer		0					
Activate R	emote Assistance P	rocess	Disabled					
USB Confi	gure		Enabled		$\rightarrow \leftarrow$ Select Screen $\uparrow \downarrow$ Select Item			
PET Progr	ess		Enabled		Enter: Select +- Change Field			
AMT CIRA	Timeout		0		F1: General Help F2: Previous Values			
Watchdog	Watchdog [		Disabled		F3: Optimized Default F4: Save ESC: Exit			
OS Tim	ner		0		FH. DAVE BOC: BAIL			
BIOS Ti	mer		0					

## **AMT Configuration**

This configuration is supported only with IB902AVF (with iAMT function). Options are Enabled and Disabled.

Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.

#### **Unconfigure ME**

This configuration is supported only with IB902AVF (with iAMT function). Perform AMT/ME unconfigure without password operation.

#### **Amt Wait Timer**

Set timer to wait before sending ASF\_GET\_BOOT\_OPTIONS.

## **Activate Remote Assistance Process**

Trigger CIRA boot.

#### **PET Progress**

User can Enable/Disable PET Events progress to receive PET events or not.

## Watchdog Timer

This configuration is supported only with IB902AVF (with iAMT function). Enable/Disable Watchdog Timer.

## USB Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit
USB Confi	iguration				
USB Devi	ces: 2 Hubs				
Legacy US	SB Support		Enabled		
USB3.0 S	upport		Enabled		
XHCI Han	d-off		Enabled		→ ← Select Screen
EHCI Han	d-off		Enabled		↑↓Select Item Enter: Select
USB hard	ware delays and tim	ne-outs:			+- Change Field F1: General Help F2: Previous Values
USB Trans	sfer time-out		20 sec		F3: Optimized Default
Device res	set tine-out		20 sec		F4: Save ESC: Exit
Device por	wer-up delay		Auto		

## 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.

## USB3.0 Support

Enable/Disable USB3.0 (XHCI) Controller support.

# **XHCI Hand-off**

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

## **EHCI Hand-off**

Enabled/Disabled. 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**

The time-out value for Control, Bulk, and Interrupt transfers.

## Device reset tine-out

USB mass Storage device start Unit command time-out.

#### Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.



## F81866 Super IO Configuration

#### Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
F81866 \$	Super IO Configur	ation			elect Screen
► Serial	Port 0 Configurat	ion		↑↓ Select Enter: Sel +- Change F1: Genera F2: Previo	Item lect Field Help Dus Values ized Default

# **Serial Port Configuration**

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

Main	Advanced	Chipset	Boot	Security	Save & Exit
PC Health	Status				
CPU temp		+32 C			
SYS temperature FAN1 Speed		+35 C 5154 RPM			
FAN2 Speed		N/A			
Vcore		+0.90	4 V		
Vcc5V		+5.00	3 V		
Vcc12V		+12.4	08 V	→ ← Se	elect Screen
+1.5V		+1.51	2 V	↑↓ Select	Item
Vcc3.3V		+3.29	6 V	Enter: Se +- Change	
				F1: Genera F2: Previo	l Help ous Values
Fan1 smar	t fan control	Disab	ed	F3: Optim	ized Default
Fan2 smar	t fan control	Disab	ed	F4: Save	ESC: Exit

#### F81866 H/W Monitor

Aptio Setup Utility

## Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

# Fan1/Fan2 Smart Fan Control

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.



# **CPU PPM Configuration**

Aptio Setup Utility									
Main	Advanced	Chipset	Boot	Security	Save & Exit				
CPU PPM	Configuration		ect Screen						
EIST		Enabled		Enter: Se +- Chang	↑ ↓ Select Item Enter: Select +- Change Field				
Turbo Mod	Mode Enabled		F3: Optin	al Help .ous Values mized Default ESC: Exit					

# EIST

Enable/Disable Intel SpeedStep.

#### Sandybridge DTS Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Sandybrid	lge DTS Configuration	Dis	able	↑↓ Ente +- F1: F2: F3:	- Select Screen Select Item er: Select Change Field General Help Previous Values Optimized Default Save ESC: Exit

## **CPU DTS**

Disabled: ACPI thermal management uses EC reported temperature values.

Enabled: ACPI thermal management uses DTS SMM mechanism to obtain CPU temperature values.

Out of Spec: ACPI Thermal Management uses EC reported temperature values and TS SMM is used to handle Out of Spec.

## **Chipset Settings**

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Aptio Setup	Utility
-------------	---------

Main	Advanced	Chipset	Boot	Security	Save & Exit			
► PCH-IC	► PCH-IO Configuration							
► System	n Agent (SA) Configu	uration						

## **PCH-IO Configuration**

This section allows you to configure the North Bridge Chipset.

Main	Advanced	Chipset	Boot	Security	Save & Exit
Intel PCH F	RC Version		1.1.0.0		
Intel PCH S	SKU Name		QM77		
Intel PCH F	Rev ID		O4/C1		
► USB Co	oress Configuration Infiguration alia Configuration				
PCH LAN ( Wake Board Cap	on LAN		Enabled Disabled SUS_PW	R_ON_ACK	→ ← Select Screen ↑ ↓ Select Item Enter: Select +- Change Field F1: General Help
High Precis	sion Event Timer C	onfiguration			F2: Previous Values F3: Optimized Default
High Precis	sion Timer		Enabled		F4: Save ESC: Exit
SLP_S4 As	ssertion Width		1-2 Secor	nds	

Aptio Setup Utility

# **PCH LAN Controller**

Enable or disable onboard NIC.

#### Wake on LAN

Enable or disable integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state.)

## SLP\_S4 Assertion Width

Select a minimum assertion width of the SLP\_S4# signal.



### **PCI Express Configuration**

Main	Advanced	Chipset	Boot	Securit	y Save & Exit
PCI Expre	ss Configuration				
DMI Link A DMI Link E	ss Clock Gating ASPM Control Extended Synch Co Glitch W/A	ontrol	Enabled Disabled Disabled Disabled		
<ul> <li>PCI Exp</li> </ul>	press Root Port 1 press Root Port 2 press Root Port 3 press Root Port 4 press Root Port 5 E Port 6 is assigne press Root Port 7 press Root Port 8	d to LAN			<ul> <li>→ ← Select Screen</li> <li>↑ ↓ Select Item</li> <li>Enter: Select</li> <li>+- Change Field</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Default</li> <li>F4: Save ESC: Exit</li> </ul>

# **PCI Express Clock Gating**

Enable or disable PCI Express Clock Gating for each root port.

# **DMI Link ASPM Control**

The control of Active State Power Management on both NB side and SB side of the DMI link.

## PCIe-USB Glitch W/A

PCIe-USB Glitch W/A for bad USB device(s) connected behind PCIE/PEG port.

#### **USB** Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit
USB Confi	guration				
xHCI Mode	Boot Driver e ort #1 Switchable		Disabled Auto Enabled		
	ort #2 Switchable		Enabled		
HS	S Port #3 Switchable	e	Enabled		
HS	S Port #4 Switchable	e	Enabled		
xHCI	Streams		Enabled		
EHCI1			Enabled		→ ← Select Screen ↑↓Select Item Enter: Select
EHCI2			Enabled		+- Change Field F1: General Help F2: Frevious Values
USB Ports	Per-Port Disable C	Control	Disabled		F3: Optimized Default F4: Save ESC: Exit

#### HS Port #1/2/3/4 Switchable

Allows for HS port switching between xHCI and EHCI. If disabled, port is routed to EHCI. If HS port is routed to xHCI, the corresponding SS port is enabled.

## **xHCI Streams**

Enable or disable xHCI Maximum Primary Stream Array Size.

# EHCI1/2

Control the USAB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

# **USB Ports Per-Port Disable Control**

Control each of the USB ports (0~13) disabling.



## PCH Azalia Configuration

Main	Advanced	Chipset	Boot	Security Save & Exit
PCH Aza Azalia	lia Configuration	A	uto	<ul> <li>→ ← Select Screen</li> <li>↑ ↓ Select Item</li> <li>Enter: Select</li> <li>+- Change Field</li> <li>F1: General Help</li> <li>F2: Previous Values</li> <li>F3: Optimized Default</li> <li>F4: Save ESC: Exit</li> </ul>

#### Azalia

Control Detection of the Azalia device.

Disabled = Azalia will unconditionally disabled.

Enabled Azalia will be unconditionally enabled.

Auto = Azalia will enabled if present, disabled otherwise.

# System Agent (SA) Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
System Ag	gent Bridge Name		IvyBridge		
System Ag	gent RC Version		1.1.0.	0	
VT-d Capa	ability		Suppo	orted	
VT-d			Enable	ed	
CHAP De	vice (B0:D7:F0)		Disab	ed	
Thermal D	Device (B0:D4:F0)		Disab	ed	
Enable NE	3 CRID		Disab	ed	
BDAT AC	PI Table Support		Disab	ed	$\rightarrow \leftarrow$ Select Screen
C-State P	re-Wake		Enable	ed	↑↓Select Item Enter: Select
	cs Configuration y Configuration				+- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit

## VT-d

Check to enable VT-d function on MCH.

## **Enable NB CRID**

Enable or disable NB CRID WorkAround.

#### **C-State Pre-Wake**

Controls C-State Pre-Wake feature for ARAT, in SSKPD[57].

# **Graphics Configuration**

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	/ Save & Exit
Graphics	Configuration				
IGFX VBI	OS Version		2132		
IGfx Frequ	uency		350 MHz		
Primary D	isplay		Auto		
Internal G	raphics		Auto		
GTT Size			2MB		→ ← Select Screen
Aperture S	Size		256MB		↑↓ Select Item Enter: Select
DVMT Pre	e-Allocated		64M		+- Change Field F1:General Help F2:Previous Values
DVMT Tot	tal Gfx Mode		256M		F3: Optimized Default F4: Save ESC: Exit

#### **Primary Display**

Select which of IGFX/PEG/PCI graphics device should be primary display or select SG for switchable Gfx.

## **Internal Graphics**

Keep IGD enabled based on the setup options.

## **DVMT Pre-Allocated**

Select DVMT 5.0 Pre-Allocated (Fixed) graphics memory size used by the internal graphics device.

### **DVMT Total Gfx Mem**

Select DVMT 5.0 total graphics memory size used by the internal graphics device.

#### **Gfx Low Power Mode**

This option is applicable for SFF only.



# **Memory Configuration**

Chipset		Security	Save & Exit
	Boot	Security	
	1.1.0.0		
	1333 MHz		
	2048 MB (I	DDR3)	
	2048 MB (I	DDR3)	
	Not Preser	nt	
	9		
			→ ← Select Screen ↑↓Select Item
nin)	9		Enter: Select +- Change Field
Pmin)	9		F1: General Help F2: Previous Values
(tRASmin)	24		F3: Optimized Default F4: Save ESC: Exit
	nin) Pmin) (tRASmin)	1333 MHz 2048 MB (I 2048 MB (I Not Preser 9 min) 9 Pmin) 9	1333 MHz         2048 MB (DDR3)         2048 MB (DDR3)         Not Present         9         min)       9         Pmin)       9

Aptio Setup Utility

#### **Boot Settings**

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Boot Confi	iguration				
Setup Pro	mpt Timeout		1		
Bootup Nu	mLock State		On		
Quiet Boot	t		Disabled		
Fast Boot			Disabled		
CSM16 M	odule Version		07.68		
				$\rightarrow$ $\leftarrow$	- Select Screen
GateA20 A	Active		Upon Red	JUEST	Select Item er: Select
Option RC	M Messages		Force BIC	DS +-	Change Field
INT19 Tra	p Response		Immediat		General Help Previous Values
Boot Optic	on Priorities				Optimized Default Save ESC: Exit
► CSM pa	arameters			£4.	DAVE EDC. EALC

#### **Setup Prompt Timeout**

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

#### Bootup NumLock State

Select the keyboard NumLock state.

#### **Quiet Boot**

Enables/Disables Quiet Boot option.

#### Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

#### GateA20 Active

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**

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

#### **INT19 Trap Response**

Enable: Allows Option ROMs to trap Int 19.

## **Boot Option Priorities**

Sets the system boot order.



#### **CSM** parameters

This section allows you to configure the boot settings.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Launch CS	SM		Always		
Boot option	n filter		UEFI and I	Legacy	
Launch PX	E OpROM policy		Do not lau	nch	
Launch St	orage OpROM policy		Do not lau	nch	
Launch Vio	deo OpROM policy		Legacy on	ly	→ ← Select Screen ↑ ↓ Select Item Enter: Select
Other PCI	device ROM priority		Legacy Op	ROM	<pre>+- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit</pre>

#### **Boot option filter**

This option controls what devices system can boot to.

## Launch PXE OpROM policy

Controls the execution of UEFI and Legacy PXE OpROM.

## Launch Storatge OpROM policy

Controls the execution of UEFI and Legacy Storage OpROM.

### Launch Video OpROM policy

Controls the execution of UEFI and Legacy Video OpROM.

### Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch.

# **Security Settings**

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Aptio	Setup	Utility
-------	-------	---------

Main	Advanced	Chipset	Boot	Security	Save & Exit
Password	Description				
limit acces Setup. If ONLY th password	he Administrator's pa ss to Setup and is on he User's password is and must be entered User will have Admin				
The passv	vord length must be				
in the follo	wing range:				
Minimum I	ength			3	
Maximum	length			20	→ ← Select Screen ↑ ↓ Select Item
Administra User Pass	ator Password sword				Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit

## **Administrator Password**

Set Setup Administrator Password.

### **User Password**

Set User Password.



#### Save & Exit Settings

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Discard C Save Cha	nges and Exit hanges and Exit nges and Reset hanges and Reset				
Save Opti Save Cha Discard C	nges				→ ← Select Screen ↑↓Select Item
	Defaults Jser Defaults Jser Defaults				<pre>File Schere Field Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit</pre>
Boot Over	rride				

#### Save Changes and Exit

Exit system setup after saving the changes.

#### **Discard Changes and Exit**

Exit system setup without saving any changes.

### **Save Changes and Reset**

Reset the system after saving the changes.

#### **Discard Changes and Reset**

Reset system setup without saving any changes.

#### Save Changes

Save Changes done so far to any of the setup options.

#### **Discard Changes**

Discard Changes done so far to any of the setup options.

#### **Restore Defaults**

Restore/Load Defaults values for all the setup options.

# 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.

# **CHAPTER 5 DRIVERS INSTALLATION**

This section describes the installation procedures for software and drivers. The software and drivers are included with the motherboard. If you find the items missing, please contact the vendor where you made the purchase.

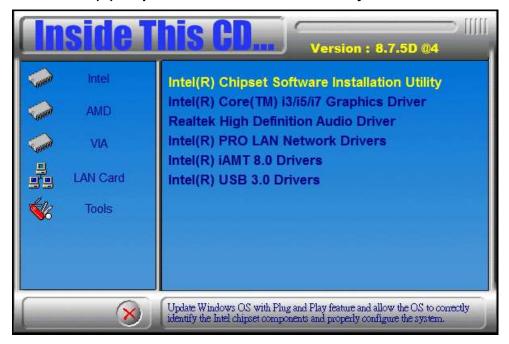
#### **IMPORTANT NOTE:**

After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

## 5.1 Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* 7 Series *Chipset Drivers*.



#### 2. Click Intel(R) Chipset Software Installation Utility.



3. When the Welcome screen to the Intel® Chipset Device Software appears, click *Next* to continue.



4. Click **Yes** to accept the software license agreement and proceed with the installation process.

ntel® Chipset Device Software			×
Intel® Chipset Device S License Agreement	oftware	int	
You must accept all of the terms of the licens program. Do you accept the terms? INTEL SOFTWARE LICENSE AGREEMENT (C IMPORTANT - READ BEFORE COPYING, INS Do not use or load this software and any as until you have carefully read the following to Software, you agree to the terms of this Ag install or use the Software.	DEM / IHV / ISV Distribut STALLING OR USING. ssociated materials (coll terms and conditions. By	ion & Single User) ectively, the "Software") / loading or using the	
Please Also Note: * If you are an Original Equipment Manufac (IHV), or Independent Software Vendor (IS			*
		Intel® Installation Fram	ework

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5. On the Readme File Information screen, click *Next* to continue the installation.

	ALC: ALK US	The second of	vice Sof	tware	A Real	(inte
lead	Ime File	Informa	ation	and and		3
	Carl Color March	CHOOPER PURPORT		and a second second	and the second	Production in
					ents and installa	ation information.
ress t	ne Page Dow	in key to view	the rest of the	e me.		
****	******	*******	*******	******	*****	*******
* E	roduct:	Intel(R)	Chipset	Device	Software	[
			on Versi	on		
		9.3.0.10				
* 1				7 Serie	es/C216 Ch	ipset Famil
	ate: De	cember 06	2011			
		*******	*******	******	********	*********
	*****					
	*****					
	******					F

6. The Setup process is now complete. Click *Finish* to restart the computer and for changes to take effect.





# 5.2 VGA Drivers Installation

NOTE: Before installing the Intel(R) Q77 Chipset Family Graphics Driver, the Microsoft .NET Framework 3.5 SPI should be first installed.

To install the VGA drivers, follow the steps below.

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* **Q7** Series *Chipset Drivers*.

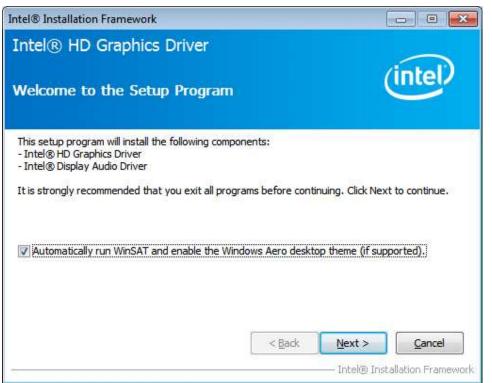


2. Click Intel(R) Q77 Chipset Family Graphics Driver.



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3. When the Welcome screen appears, click *Next* to continue.



4. Click **Yes** to to agree with the license agreement and continue the installation.

Intel® Installation Framework	
Intel® HD Graphics Driver	
License Agreement	(intel)
You must accept all of the terms of the license agreement in or program. Do you accept the terms?	der to continue the setup
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Dist	ribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING Do not use or load this software and any associated materials until you have carefully read the following terms and condition: Software, you agree to the terms of this Agreement. If you do install or use the Software.	(collectively, the "Software") s. By loading or using the
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), Indep (IHV), or Independent Software Vendor (ISV), this complete LI * If you are an End-User, then only Exhibit A, the INTEL SOFT	CENSE AGREEMENT applies;
< <u>B</u> ack	Yes No



5. On the Readme File Information screen, click *Next* to continue the installation of the Intel® Graphics Media Accelerator Driver.

ntel® Installation Framework	
Intel® HD Graphics Driver	
Readme File Information	intel
Refer to the Readme file below to view the system requirement	ents and installation information.
Production Version Releases	* E
Microsoft Windows* 7 64 Microsoft Windows* Embedded Standard 7-64(1)	
(1)These operating systems supported for embedded desig models only.	ns and usage
Driver Revision: 15.26,6.64,2669	
March 5, 2012	
< <u>B</u> ac	k Next > Cancel
7	

6. On Setup Progress screen, click *Next* to continue.

tel® Installation	Framework	
ntel® HD etup Progre	Graphics Driver ess	(intel)
Creating Registr Creating Registr Creating Process Creating Process Creating Process Creating Process Deleting Registry Creating Process Creating Process Deleting Registry Creating Process	y Key: HKLM\SOFTWARE\Microsoft\Win y Key: HKLM\SOFTWARE\Microsoft\Win :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: C:\Windows\system32\regsvr32.exe :: D:\Intel\7 Series\VGA\Windrv\WinVist tinue.	ndows Media Foundation\HardwareMFT > ndows Media Foundation\HardwareMFT ndows Media Foundation\HardwareMFT K\Dispatch\hw64-s1-1
•	III)	F
		Next >

7. Setup complete. Click *Finish* to restart the computer and for changes to take effect.

# 5.3 Realtek HD Audio Driver Installation

Follow the steps below to install the Realtek HD Audio Drivers.

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* Q7 Series Chipset Drivers.



2. Click Realtek High Definition Audio Driver.





3. On the Welcome to the InstallShield Wizard screen, click *Next* to proceed with and complete the installation process.

Realtek High Definition Audio Dri	ver Setup (3.15) R2.57
	Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield	Kancel

4. The InstallShield Wizard Complete. Click *Finish* to restart the computer and for changes to take effect.

Realtek High Definition Audio Dr	ver Setup (3.15) R2.57
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed Realtek High Definition Audio Driver. Before you can use the program, you must restart your computer. Yes, I want to restart my computer now No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
InstallShield	K Back Finish Cancel

# **5.4 LAN Drivers Installation**

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* **Q7** Series *Chipset Drivers.* 

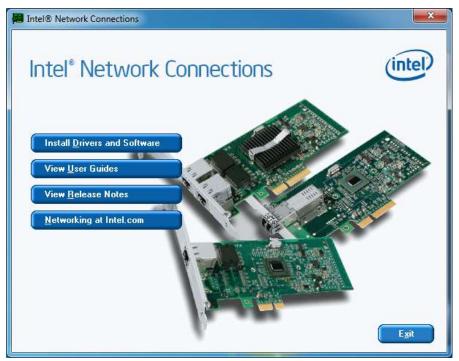


2. Click Intel(R) PRO LAN Network Driver.





3. Click Install Drivers and Software.



#### 4. When the Welcome screen appears, click Next.

j날 Intel(R) Network Connections - InstallShield Wizard	×
Welcome to the InstallShield Wizard for Intel(R) Network Connections	(intel)
Installs drivers, Intel(R) PROSet for Windows*Device Manager, and Advanced Networking Services.	
WARNING: This program is protected by copyright law and international treaties.	1
InstallShield	Cancel

5. Click *Next* to to agree with the license agreement.

HIII Intel(R) Network Connections - InstallShield Wizard	×
License Agreement Please read the following license agreement carefully.	intel
INTEL SOFTWARE LICENSE AGREEMENT	
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.	
Do not copy, install, or use this software and any associated materials (collectively, the "Software") provided under this license agreement ("Agreement") until you have carefully read the following terms and condi	tions.
By copying, installing, or otherwise using the Software, you agree to be bo the terms of this Agreement. If you do not agree to the terms of this Agree do not copy, install, or use the Software.	-
I accept the terms in the license agreement	Print
I do not accept the terms in the license agreement	
InstallShield	
< <u>B</u> ack <u>N</u> ext >	Cancel

6. Click the checkbox for **Drivers** in the Setup Options screen to select it and click **Next** to continue.

ntel(R) Network Connections	
Setup Options Select the program features you want installed.	(intel)
Install:	
Orivers     Intel(R) PROSet for Windows* Device Manager     Madvanced Network Services     Intel(R) Network Connections SNMP Agent	
Feature Description	
< Back	ext > Cancel



7. The wizard is ready to begin installation. Click *Install* to begin the installation.

闄 Intel(R) Network Connections - InstallShield Wizard	X
Ready to Install the Program	(intel)
The wizard is ready to begin installation.	
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click exit the wizard.	Cancel to
InstallShield	
< <u>B</u> ack Install	Cancel

#### 8. When InstallShield Wizard is complete, click *Finish*.

Intel(R) Network Connections - InstallShield Wizard	×
InstallShield Wizard Completed	(intel)
To access new features, open Device Manager, and view the properties of the network adapters.	
InstallShield	Cancel

# **5.5 Intel<sup>®</sup> Management Engine Interface**

Follow the steps below to install the Intel Management Engine.

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R) AMT 8.0 Drivers.* 





2. When the Welcome screen to the InstallShield Wizard for Intel® Management Engine Components, click the checkbox for **Install Intel® Control Center** & click *Next*.



3. Click Yes to to agree with the license agreement.

ntel® Management Engine Components	(introl)
icense Agreement	inter
You must accept all of the terms of the license agreement in order to continue program. Do you accept the terms?	: the setup
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, th until you have carefully read the following terms and conditions. By loading or Software, you agree to the terms of this Agreement. If you do not wish to so install or use the Software.	ne "Software") rusing the
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), Independent Hardwa (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREE! * If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE	MENT applies;
< Back Yes	No

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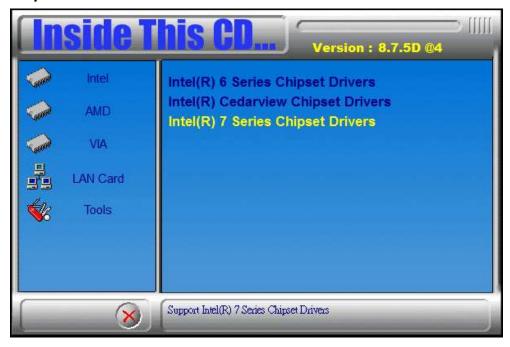
4. When the Setup Progress screen appears, click *Next*. Then, click *Finish* when the setup progress has been successfully installed.

Intel® Installation Framework	
Intel® Management Engine Components	(intel)
Setup Progress	linter
Please wait while the following setup operations are performed:	
- · · ·	
Creating Process: regsvr32.exe Copying File: C: \Windows\system32\drivers\IntelMEFWVer.dll Creating Process: C: \Program Files (x86)\Intel\Intel(R) Managemen Installing: Intel® Control Center Deleting File: C: \Program Files (x86)\Intel\Intel(R) Management Eng Copying File: C: \Program Files (x86)\Intel\Intel(R) Management Eng Creating Process: C: \Program Files (x86)\Intel\Intel(R) Management Eng Creating Process: C: \Program Files (x86)\Intel\Intel(R) Management Creating Process: C: \Program Files (x86)\Intel\Intel(R) Management Creating Process: C: \Program Files (x86)\Intel\Intel(R) Management	ine Components\FWServic ine Components\FWServic t Engine Components\FWS
Installing: Intel® ME FW Recovery Agent Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Eng	ine Components\Firmware
Click Next to continue.	
4 <u>III</u>	•
	Next >
	[]
	– Intel® Installation Framework
Intel® Installation Framework	
Intel® Management Engine Components Setup Is Complete	(intel)
The setup program successfully installed the following components: - Intel® Management Engine Interface - Intel® Dynamic Application Loader - Intel® Identity Protection Technology (Intel® IPT) - Serial Over LAN - Intel® Management and Security Status - Local Management Service - User Notification Service Click Finish to complete the setup process.	

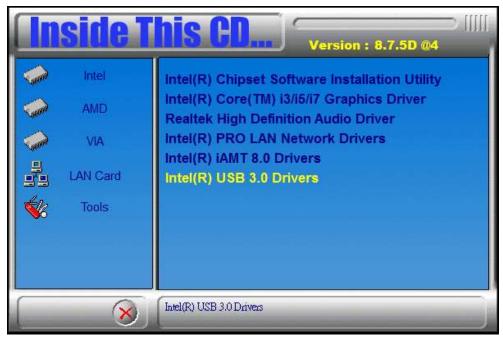


# 5.6 Intel<sup>®</sup> USB 3.0 Drivers

1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* **Q7** Series *Chipset Drivers*.



2. Click Intel(R) USB 3.0 Drivers.



3. When the Welcome screen to the InstallShield Wizard for Intel® USB 3.0 eXtensible Host Controller Driver, click *Next*.



4. Click **Yes** to to agree with the license agreement and continue the installation.

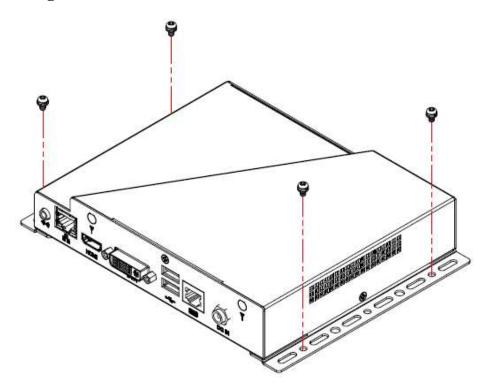
5. On the Readme File Information screen, click *Next* to continue the installation of the Intel® USB 3.0 eXtensible Host Controller Driver.

6. Setup complete. Click *Finish* to restart the computer and for changes to take effect.



# **Appendix**

Mounting SI-62 to the Wall



You can install SI-62 on wood, drywall surface over studs, or a solid concrete or metal plane directly. Ensure the installer uses at least four M3 length 6mm screws to secure the system on wall. *Four M3 length 6mm screws are recommended to secure the system on wall.* 

Fasteners are not included with the unit, and must be supplied by the installer. The types of fasteners required are dependent on the type of wall construction. Choose fasteners that are rated either "Medium Duty" or "Heavy Duty." To assure proper fastener selection and installation, follow the fastener manufacturer's recommendations.

### **Wall Mounting Requirements**

**Note:** Before mounting the system on wall, ensure that you are following all applicable building and electric codes.

When mounting, ensure that you have enough room for power and signal cable routing. And have good ventilation for power adapter. The method of mounting must be able to support weight of the SI-62 plus the suspend weight of all the cables to be attached to the system. Use the following methods for mounting your system:

#### Mounting to hollow walls

- Method 1: Wood surface A minimum wood thickness 38mm (1.5in.) by 25.4 cm (10in.) of high, construction grade wood is recommended.
   Note: This method provides the most reliable attachment of the unit with little risk that the unit will come loose or require ongoing maintenance.
- Method 2: Drywall walls Drywall over wood studs is acceptable.

Mounting to a solid concrete or brick wall - Mounts on a flat smooth surface.

## Selecting the Location

Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the unit to a flat, sturdy, structurally sound column or wall surface.

The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the unit. This recommendation reduces the risk that someone may accidentally walk into and damage the device. Local laws governing the safety of individuals might require this type of consideration.



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# SI-62 Mounting Bracket Solution

SI-62 mounting bracket (IBASE) part number: SC2SI38----0A1100P Please install SI-62 to the mounting bracket using 4 screws, as shown in the picture.

