SI-58 Series User Manual



2012 Jun V1

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Safety Information

Your SI-58 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 45°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.

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

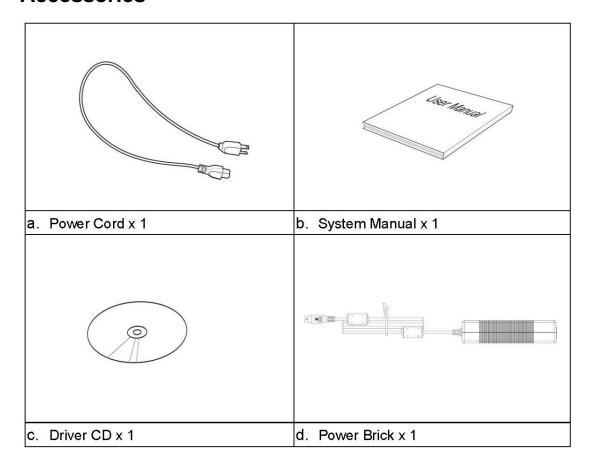
The warranty does not apply to the products that have been disassembled by users

WARNING HAZARDOUS MOVING PARTS KEEP FINGERS AND OTHER BODY PARTS AWAY

Acknowledgments

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- AMD and ATI are registered trademarks of AMD Corporation.
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Accessories



Components

I/O View

Refer to the diagram below to identify the components on this side of the system.





Power Bottom

The power switch allows powering ON and OFF the system.

HDD

The hard disk LED blinks when data is being written into or read from the hard disk

HDD

The power LED illuminated when system been power on.

HDMI 1/2/3/4/5/6

The HDMI (High Definition Multimedia Interface) (connector 6 exclusive) interface to transmitting uncompressed digital data come from E6760 (discrete graphic chip).

LAN 1/ LAN2

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

COM 1/ COM 2

Communication or serial port is compatible with RJ 45 interface without RI (ring indicator) signal.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

AUDIO

The stereo audio jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones.

DC-IN 12 V

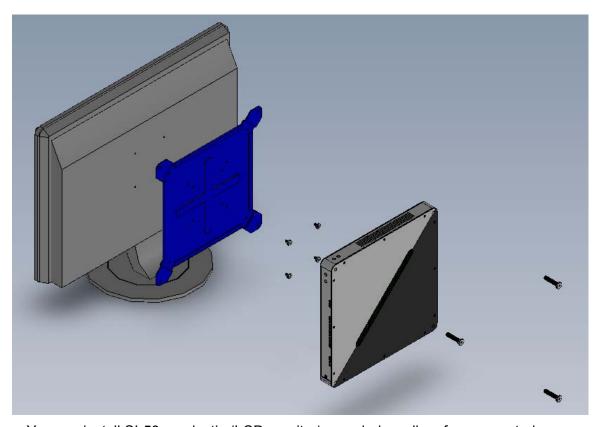
The supplied power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the system. To prevent damage to the system, always use the supplied power adapter.

Specification

System Mainboard	IB958-58	
Construction	SGCC 1.0t	
Chassis Color	Black / White	
Storage	2.5" 160GB SATA HDD x 1	
Mounting	Wall mount	
Power Supply	150W DC adapter	
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)	
Storage Temperature	-20°C ~ 80°C	
Relative Humidity	5~90% @45°C (non-condensing)	
Vibration	HDD: 0.25 Grms/5~500Hz random operation	
Shock	HDD: 15 Grms peak acceleration (11 msec duration)	
RoHS	Available	

[·]This specification is subject to change without prior notice.

Mounting SI-58 to the Wall



You can install SI-58 on plastic (LCD monitor), 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. Six 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-58 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.

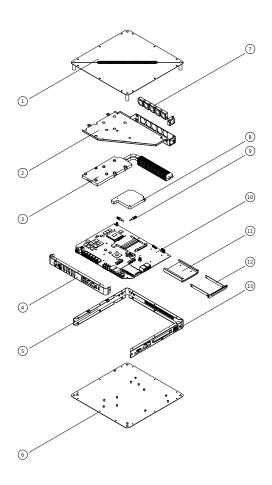
Selecting the location

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.

Exploded view of the SI-58 assembly



Parts description

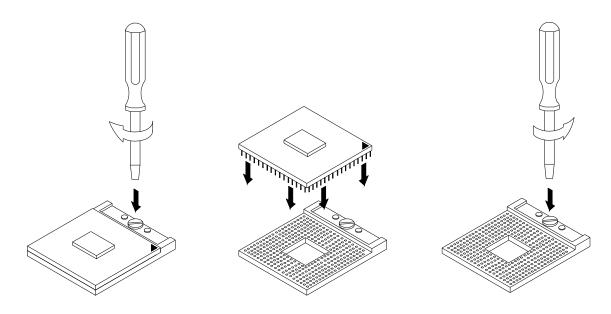
Part NO.	Description	Part NO.	Description
1	Top cover	2	Fan Bracket
3	Heatsink-1	4	Front Panel
5	Panel-1	6	Base
7	Fan set	8	Heatsink-2
9	Antenna screw	10	IB958-58 MB
11	HDD Bracket	12	HDD Tray
13	Panel-2		

Installation

Installing CPU

The SI-58 (IB958 board) supports rPGA988B socket for Intel® Sandy Bridge Dual Core mobile processors.

The processor socket comes with a screw to secure the processor. As shown in the left 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.



Installing the memory

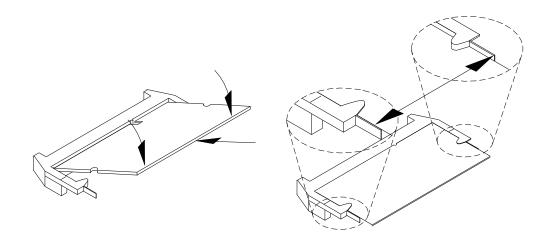
The IB958 board supports two DDR3 memory socket for a maximum total memory of 8GB in DDR3 SO-DIMM memory type.

Installing and Removing Memory Modules

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

 Hold the DDR3 module so that the key of the DDR3 module aligns with that on the memory slot. Insert the module into the socket at a slight angle

- (approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.
- 2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
- 3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
- 4. To remove the DDR3 module, press the clips with both hands.

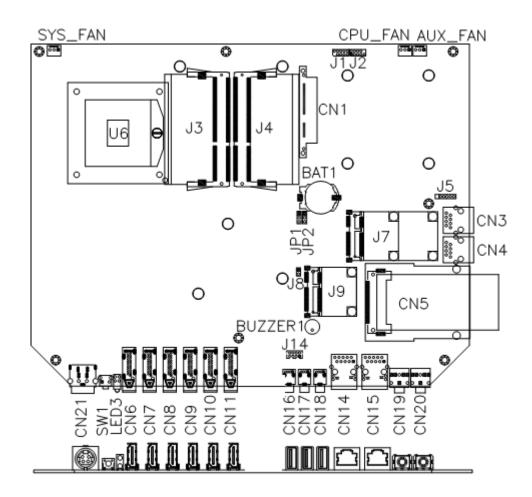


Setting Jumper

Jumpers are used on IB958 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. The following lists the connectors on IB958 and their respective functions.

Jumper Locations on IB958	Page 15
JP1: Clear CMOS Contents	Page 15
JP2: Clear ME Contents	Page 16
J8: Flash Descriptor Security Overide (Factory use only)	Page 16

Jumper Locations



JP1: Clear CMOS Setting

JP1	Setting	Function
	Pin 1-2	Normal
123	Short/Closed	Normal
	Pin 2-3	Cloor CMOS
123	Short/Closed	Clear CMOS

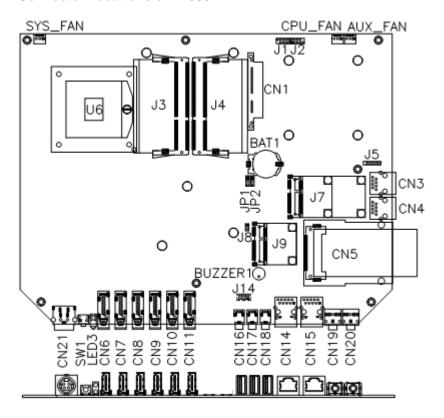
JP2: Clear ME Setting

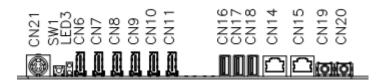
JP2	Setting	Function
	Pin 1-2	Normal
123	Short/Closed	Normal
	Pin 2-3	Clear ME
123	Short/Closed	Clear ME

JP8: Flash Descriptor Security Overide (Factory use only)

J8	Flash Descriptor Security Overide
Open	Disabled (Default)
Close	Enabled

Connector Locations on IB958





CN1: SATA HDD Dock

The SATA HDD dock combines a SATA power connector and a SATA interface connector

Signal	Pin	Pin	Signal
Name	#	#	Name
GND	S1	P1	V3.3
A+	S2	P2	V3.3
A-	S3	P3	V3.3
GND	S4	P4	GND
B+	S5	P5	GND
B-	S6	P6	GND
GND	S7	P7	GND
		P8	V5
		P9	V5
		P10	V5
		P11	Reserve
		P12	GND

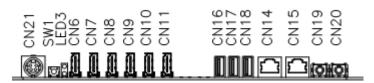
CN3, CN 4: Console Port (CN3 COM2, CN4 COM1)

The console port is an RJ45 RS-232 serial port.



Pin#	Signal Name		
1	RTS		
2	DTR		
3	TXD		
4	GND		
5	DCD		
6	RXD		
7	DSR		
8	CTS		

CN5: Express Card



CN6, CN7, CN8, CN9, CN10, CN11: ATI E6760 HDMI Connectors

Signal Name	Pin	Pin	Signal
	#	#	Name
DATA 2-	1	2	GND
DATA 2+	3	4	DATA 1+
GND	5	6	DATA 1-
DATA 0+	7	8	GND
DATA 0-	9	10	CLOCK +
GND	11	12	CLOCK -
NC	13	14	NC
DDC CLOCK	15	16	DDC DATA
GND	17	18	+5V
HOT POWER	19	20	N.C.

Remarks: CN6/CN7 supports HDMI.

CN12, CN13: Intel Chipset HDMI Connectors

Signal Name	Pin	Pin	Signal
	#	#	Name
DATA 2-	1	2	GND
DATA 2+	3	4	DATA 1+
GND	5	6	DATA 1-
DATA 0+	7	8	GND
DATA 0-	9	10	CLOCK +
GND	11	12	CLOCK -
NC	13	14	NC
DDC CLOCK	15	16	DDC DATA
GND	17	18	+5V
HOT POWER	19	20	N.C.

Remarks: CN12/CN13 supports HDMI.

CN14, CN15: Gigabit LAN RJ45 Ports

CN16, CN17, CN18: USB1/2/3 Ports

CN19, CN20: Audio Line In and Line Out

CN21: DC Power Jack (+12V only)



Pin	Signal Name		
#			
1	+12V		
2	+12V		
3	GND		
4	GND		
5	GND		

SW1: Power Button

LED3: Power LED and HDD LED

The green LED at the bottom is power LED. The red LED on top is the HDD LED.

J1: SPI Flash Connector (factory use only)

J2: LPC Connector (factory use only)

J3: DDR II DIMM Socket CHA

J4: DDR II DIMM Socket CHB

J5: Msp430F2330 Flash Connector (factory use only)

J7, J9: Mini PCI-E X1 Socket

J14: USB5/USB6 Connector



Signal	Pi	Pi	Signal
Name	n	n	Name
Vcc	1	2	Ground
D0-	3	4	D1+
D0+	5	6	D1-
Ground	7	8	Vcc

CPU_FAN: CPU Fan Power Connector

3	2	1	

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

SYS_FAN: SYSTEM Fan Power Connector



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

AUX_FAN: SYSTEM Fan Power Connector



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

BIOS Setup

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 key immediately allows you to enter the Setup utility. If you are a little bit late pressing the 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:

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.

Main BIOS Setup

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

Aptio Setup Utility - Copright © 2010 American Megatrends, Inc.

Main Advanced	Chipset Boot	Security	Save & Exit
BIOS INFORMATION			
System Language	[English]		
			→ ←Select Screen
System Date	[Tue 01/06/2009]		↑ ↓ Select Item
System Time	[00:08:21]		Enter: Select
			+- Change Field
Access Level	Administrator		F1: General Help
			F2: Previous Values
			F3: Optimized Default
			F4: Save & Exit
			ESC: Exit

Note:

If the system cannot boot after making and saving system changes with Setup, the AMI BIOS supports an override to the CMOS settings that resets your system to its default.

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.

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.

Aptio Setup Utility

Main Advanced Chipset	Boot	Security	Save & Exit
Legacy OpROM Support			
Launch PXE OpROM		[Disabled]	
Launch Storage OpROM		[Enabled]	
► PCI Subsystem Settings			
► ACPI Settings			
► Wake up event setting			→ ←Select Screen
► CPU Configuration			↑ ↓ Select Item Enter: Select
► Shutdown Temperature Configuration			+- Change Field
► Auto Power On Schedule			F1: General Help
► SATA Configuration			F2: Previous Values
► PCH-FW Configuration			F3: Optimized Default
► AMT Configuration			F4: Save & EXIT
► USB Configuration			ESC: Exit
► Super IO Configuration			
► H/W Monitor			
► Serial Port Console Redirection			
► Sandybridge PPM Configuration			

Launch PXE OpROM

Enable or Disable Boot Option for Legacy Network Devices.

Launch Storage OpROM

Enable or Disable Boot Option for Legacy Mass Storage Devices with Option ROM.

PCI Subsystem Settings

This section allows you to configure the PCI, PCI-X and PCI Express settings.

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	Save & Exit	
PCI Bus Driv	ver Version		V 2.03.00		
PCI ROM Pri	ority		EFI Com	patible ROM	
PCI Commo	n Settings				
PCI Latency	Timer		32 PCI B	us Clocks	
VGA Palette	Snoop		Disabled		
PERR# Gene	eration		Disabled		
SERR# Gene	eration		Disabled		
					→ ←Select Screen
PCI Express	Device Settings				↑
Relaxed Orde	ering		Disabled		Enter: Select
Extended Tag	g		Disabled		+- Change Field
No Snoop			Enabled		F1: General Help
Maximum Pa	yload		Auto		F2: Previous Values
Maximum Re	ead Request		Auto		F3: Optimized Default
					F4: Save & Exit
PCI Express	Link Settings				ESC: Exit
ASPM Suppo	ort		Disabled		
WARNING	6: Enabling ASPM may caus	e some			
	PCI-E devices to	fail			
Extended Syr	nch		Disabled		

PCI ROM Priority

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

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#.

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 L0- Force all links to L0 Stage:

AUTO – BIOS auto configure:

DISABLE- Disables ASPM.

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

ACPI Settings

System ACPI Parameters.

Aptio Setup Utility

Main	Advanced Chipset	Boot Securi	ity Save & Exit
Enable A	CPI Auto Configuration	Disabled	→ ←Select Screen
Enable Hi	ibernation	Enabled	↑
ACPI Slee	ep State	S3 (Suspend to R)	Enter: Select
Lock Lega	acy Resources	Disabled	+- Change Field
			F1: General Help
			F2: Previous Values
			F3: Optimized Default
			F4: Save & Exit
			ESC: Exit

Enable ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

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

Lock Legacy Resources

Enables or Disables System Lock of Legacy Resources.

Wake up event settings

Enable/Disable Wake up event.

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	y Save & Exit
Wake system	with Fixed Time	Disable	d	
				→ ←Select Screen
Wake on Rin	g	Disabled		↑
Wake on PCI	E Wake Event	Disabled		Enter: Select
				+- Change Field
				F1: General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Wake system with Fixed Time

Enables or Disables System wake on alarm event. When enabled, System will wake on the hr::min:: sec specified.

Wake on Ring

The options are Disabled and Enabled.

Wake on PCIE Wake Event

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.

Aptio Setup Utility

	Aptio Setup Ut		
Main Advanced Chips	et Boot	Security	Save & Exit
CPU Configuration			
Intel® Core™ i7-7210QE CPU @	② 2.10GHz		
EMT64	Supported		
Max Processor Speed	2100 MHz		
Min Processor Speed	800 MHz		
Processor Speed	2100 MHz		
Processor Stepping	206a7		
Microcode Revision	D		
Processor Cores	4		→ ←Select Screen
Intel HT Technology	Supported		↑ ↓ Select Item
			Enter: Select
Hyper-threading	Enabled		+- Change Field
Active Processor Cores	All		F1: General Help
Limit CPUID Maximum	Disabled		F2: Previous Values
Execute Disable Bit	Enabled		F3: Optimized Default
Hardware Prefetcher	Enabled		F4: Save & Exit
Adjacent Cache Line Prefetch	Enabled		ESC: Exit
Intel Virtualization Technology	Enabled		
Local x2APIC	Disabled		

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.)

Hardware Prefetcher

To turn on/off the MLC 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

Enable Local x2APIC. Some OSes do not support this.

Shutdown Temperature Configuration

The default setting is Disabled.

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	y Save & Exit
				[Enable Provide the Standby
ACPI Shu	ıtdown Temperature	Disabled		Power for devices.
				[Disable] Shutdown the standby
				power.

Auto Power On Schedule

Main	Advanced Chipset	Boot	Security Save & Exit
			[Enable Provide the Standby
Schedule	Slot 1	None	Power for devices.
Schedule	Slot 2	None	[Disable] Shutdown the standby power.

Schedule Slot 1

Setup the hour/minute for system power on.

Schedule Slot 2

Setup the hour/minute for system power on.

SATA Configuration

SATA Device Options Settings

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	y Save & Exit
SATA Co	ntrollers(s)	Enabled		Enable or disable SATA Device.
SATA Mo	de Selection	IDE		
Serial AT	A Port 0	Empty		
Software	Preserve	Unknown		
Serial AT	A Port 1	Empty		$ ightarrow$ \leftarrow Select Screen
Software	Preserve	Unknown		↑ ↓ Select Item
Serial AT	A Port 2	Empty		Enter: Select +- Change Field
Software	Preserve	Unknown		F1: General Help
Serial AT	A Port 3	Empty		F2: Previous Values
Software	Preserve	Unknown		F3: Optimized Default
Serial AT	A Port 4	Empty		F4: Save & Exit
Software	Preserve	Unknown		ESC: Exit
Serial AT	A Port 5	Empty		
Software	Preserve	Unknown		

SATA Mode

Determines how SATA controllers(s) operate. The options are IDE, AHCI and RAID.

PCH-FW Configuration

Configure Management Engine Technology Parameters.

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	/ Save & Exit
				Configure Management Engine
ME FW V	ersion	7.0.4.1197		Technolory Parameters.
ME Firmw	vare Mode			
ME Firmw	vare Type	Full Sku Firmware		
ME Firwa	re SKU	Unidentified		$ ightarrow$ \leftarrow Select Screen
Firmware	Update Congfiguration			↑
				Enter: Select
				+- Change Field
				F1: General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

AMT Configuration

Configure Active Management Technology Parameters.

Aptio Setup Utility

	Aptio Setup Utility	
Main Advanced Chipset	Boot Secu	urity Save & Exit
Intel AMT	Enabled	
Intel AMT Setup Prompt	Enabled	
BIOS Hotkey Pressed	Disabled	
MEBx Selection Screen	Disabled	
Verbose Mebx Output	Enabled	
Hide Un-Configure ME Confirmation	Disabled	
MeBx Debug Message Output	Disabled	_
Un-Configure ME	Disabled	→ ←Select Screen
Intel AMT Password Write Enabled	Enabled	↑ ↓ Select Item Enter: Select
Amt Wait Timer	0	+- Change Field
ASF	Enabled	F1: General Help
Activate Remote Assistance Process	Disabled	F2: Previous Values
USB Configure	Enabled	F3: Optimized Default
PET Progress	Enabled	F4: Save
Intel AMT SPI Protected	Disabled	ESC: Exit
AMT CIRA Timeout	0	
Watchdog	Disabled	
OS Timer	0	
BIOS Timer	0	

Intel AMT

Enable/Disable Intel® Active Management Technology BIOS Extension. 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.

Intel AMT Setup Prompt

OEMFLag Bit 0:

Enable/Disable Intel AMT Setup Prompt to wait for hot-key to enter setup.

BIOS Hotkey Pressed

OEMFLag Bit 1:

Enable/Disable BIOS hotkey press.

MeBx Selection Screen

OEMFLag Bit 2:

Enable/Disable MEBx selection screen.

Verbose Mebx Output

OEMFLag Bit 3:

Enable/Disable Verbose Mebx Output.

Hide Un-Configure ME Confirmation

OEMFLag Bit 6:

Hide Un-Configure ME without password Confirmation Prompt.

MeBx Debug Message Output

OEMFLag Bit 14:

Enable MEBx debug message output.

Un-Configure ME

OEMFLag Bit 15:

Un-Configure ME without password.

Intel AMT Password Write Enabled

Enable/Disable Intel AMT Password Write. Password is writeable when set Enable.

Amt Wait Timer

Set timer to wait before sending ASF_GET_BOOT_OPTIONS.

ASF

Enable/Disable Alert Specification Format.

Activate Remote Assistance Process

Trigger CIRA boot.

USB Configuration

USB Configuration Parameters.

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	y Save & Exit
USB Confi	guration			
USB Devic	es:			
2	2 Hubs			
Legacy US	B Support	Enabled		→ ←Select Screen
XHCI Hand	d-off	Enabled		↑ ↓ Select Item
EHCI Hand	d-off	Enabled		Enter: Select
				+- Change Field
USB hardw	vare delays and time-outs:			F1: General Help F2: Previous Values
USB transf	er time-out	20 sec		F3: Optimized Default
Device res	et time-out	20 sec		F4: Save ESC: Exit
Device pov	ver-up delay	Auto		

Legacy USB Support

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.

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

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

USB transfer time-out

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

Device reset time-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 100 ms, for a hub port the delay is taken from Hub Descriptor.

Super IO Configuration

System Super IO Chip Parameters.

Advanced Chipset Save & Exit Main Boot Security Super IO Configuration ←Select Screen ↑ ↓ Select Item Super IO Chip Winbond W83627DHG Enter: Select ► Serial Port 0 Configuration Change Field ► Serial Port 1 Configuration F1: General Help F2: Previous Values F3: Optimized Default Power Failure Always off F4: Save & Exit

Aptio Setup Utility

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.

ESC: Exit

Power Failure

Options are:

Keep last state

Always on

Always off (default)

H/W Monitor

Monitor hardware status.

Aptio Setup Utility

Main Advanced Chipset	Boot	Security Save & Exit
PC Health Status		
►Smart Fan Mode Configuration		
SYSTIN Temperature	+46 C	
CPUTIN Temperature	+45 C	
AUXTIN Temperature	+47 C	→ ←Select Screen
System Fan Speed	5976 RPM	↑ ↓ Select Item
CPU Fan Speed	5976 RPM	Enter: Select +- Change Field
AUX Fan Speed	5285 RPM	F1: General Help
CPUVcore	+1.088 V	F2: Previous Values
+12V	+11.721 V	F3: Optimized Default
AVCC	+3.328 V	F4: Save & Exit
3VCC	+3.328 V	ESC: Exit
+5V	+5.120 V	

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.

Smart Fan Mode Configuration

This field enables (55C/60C/65C/70C) 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.

Serial Port Console Redirection

Aptio Setup Utility

Main Adv	anced Chipset	Boot	Security	y Save & Exit
COM0 (Disabled)				
Console Redirection	on	Port is Disabled		
COM4(PCI Dev0, F	Func0) (Disabled)			
Console Redirection	on	Port is Disabled		→ ←Select Screen
Serial Port for Out-	of-Band Management	V		↑
Windows Emero	ency Management Se	ervices (EMS)		Enter: Select
				+- Change Field
Console Redirection	on	Enabled		F1: General Help
Out-of-Band Mgmt	Port	COM0 (Disabled)		F2: Previous Values
Data Bits		8		F3: Optimized Default
Parity		None		F4: Save & Exit
Stop Bits		1		ESC: Exit
Terminal Type		VT-UTF8		

Console Redirection

Console Redirection Enable/Disable.

Out-of-Band Mgmt Port

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

Terminal Type

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100.

Sandybridge PPM Configuration

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	Save & Exit
Sandybridge	PPM Configuration			
EIST		Enabled		
Turbo Mode		Enabled	-	→ ← Select Screen
CPU C3 Repo	ort	Enabled		↑ √ Select Item
CPU C6 Repo	ort	Enabled	1	Enter: Select
CPU C7 Repo	ort	Enabled	-	+- Change Field
			1	F1: General Help
			1	F2: Previous Values
			1	F3: Optimized Default
			1	F4: Save & Exit
			ו	ESC: Exit

EIST

Enable/Disable Intel SpeedStep.

Turbo Mode

Turbo Mode.

CPU C3 Report

Enable/Disable CPU C3 (ACPI C2) report to OS.

CPU C6 Report

Enable/Disable CPU C6 (ACPI C3) report to OS.

CPU C7 Report

Enable/Disable CPU C7 (ACPI C3) report to OS.

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					
▶ System	Agent (SA) Configu	ration			
► PCH-IC) Configuration				

System Agent (SA) Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security Save &
Exit				
System A	gent RC Version		1.1.0.0	
VT-d Cap	ability	Supported		
VT-d		Enabled		
				→ ←Select Screen
				↑
▶ Intel I	GFX Configuration			Enter: Select
	J. 11.			+- Change Field
				F1: General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

VT-d

Check to enable VT-d function on MCH.

Intel IGFX Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security Save &
Exit				
Intel IGFX	Configuration			
IGFX VBIO	OS Version	2108		
IGFX Fred	quency	650 MHz		
				$ ightarrow$ \leftarrow Select Screen
Primary D	isplay	Auto		↑ ↓ Select Item
Internal G	raphics	Auto		Enter: Select
GTT Size		2MB		+- Change Field
Aperture S	Size	256MB		F1: General Help
				F2: Previous Values
DVMT Pre	e-Allocated	64M		F3: Optimized Default
DVMT Tot	al Gfx Mem	256M		F4: Save & Exit
Gfx Low P	Power Mode	Enabled		ESC: Exit
► LCD Co	entrol			

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.

GTT Size

Select the GTT Size: 1MB, 2MB.

Aperture Size

Select the Aperture Size: 128MB, 256MB, 512MB.

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device: 0M~512M.

DVMT Total Gfx Mem

Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device: 128M, 256M, MAX.

Gfx Low Power Mode

This option is applicable for SFF only.

LCD Control

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security Save &
Exit				
LCD Cont	trol			
Primary I	GFX Boot Display	VBIOS Default		
				→ ←Select Screen
				↑ ↓ Select Item
				Enter: Select
				+- Change Field
				F1: General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Primary IGFX Boot Display

Select the Video Device that will be activated during PoST. This has no effect if external graphics present.

Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

PCH-IO Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security Save &
Exit				
Intel PCF	I RC Version		1.1.2.0	
PCH LAN	l Controller	Enabled		
Wake o	on Lan	Disabled		
Azalia		Auto		
Azalia PN	∕/E Enable	Disabled		
Azalia Int	ernal HDMI Codec	Enabled		
High Pred	cision Event Timer Confi	guration		
High Pred	cision Timer	Enabled		
				→ ←Select Screen
SLP_S4	Assertion Width	4-5 Seconds		↑
Set NANI	D Management Override	e Enabled		+- Change Field
				F1: General Help
▶ USB C	onfiguration			F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Azalia

Control Detection of the Azalia device.

Disabled = Azalia will be unconditionally disabled.

Enabled = Azalia will be unconditionally enabled. Auto = Azalia will be enabled if present, disabled otherwise.

Set NAND Management Override

Option to Override NAND Management to allow driver or 3rd parties software to configure the NAND module after POST.

USB Configuration

Main	Advanced Chipset	Boot	Security	Save & Exit	
EHCI1		Enabled			
EHCI2		Enabled			

EHCI1

Control the USB EHCI (USB2.0) functions.

One EHCI controller must always be enabled.

Boot Settings

This section allows you to configure the boot settings according to your preference.

Aptio Setup Utility

Main Adva	nced Chipset	Boot	Security	y Save & Exit
Boot Configuration				
Setup Prompt Timeou	t	1		
Bootup NumLock Stat	е	On		
Quite Boot		Disabled		→ ←Select Screen
				↑ ↓ Select Item
CM16 Module Version	ı	07.63		Enter: Select
				+- Change Field
				F1: General Help
GateA20		Upon Requ	est	F2: Previous Values
Option ROM Message	es	Force BIOS	i	F3: Optimized Default
Interrupt 19 Capture		Disabled		F4: Save & Exit
				ESC: Exit
Boot Option Priorities				

Setup Prompt Timeout

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

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.

Interrupt 19 Capture

Enable: Allows Option ROMs to trap Int 19.

Boot Option Priorities

Sets the system boot order.

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 Sec	Curity Save & Exit
Password Description	
If ONLY the Administrator's password is set, then	
this only limits access to Setup and is only asked	→ ←Select Screen
for when entering Setup.	↑
If ONLY the User's password is set, then this is a	Enter: Select
power on password and must be entered to boot	+- Change Field
or enter Setup. In Setup the User will have	F1: General Help
Administrator rights	F2: Previous Values
	F3: Optimized Default
Administrator Password	F4: Save & Exit
User Password	ESC: Exit

Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings

Aptio Setup Utility

Main	Advanced Chipset	Boot	Security	y Save & Exit
Save Cha	inges and Exit			
Discard C	hanges and Exit			
Save Cha	inges and Reset			
Discard C	hanges and Reset			
Save Opti	ions			
Save Cha	inges			
Discard C	changes			→ ←Select Screen
				↑ ↓ Select Item
				Enter: Select
Restore D)efaults			+- Change Field
Save as U	Jser Defaults			F1: General Help
Restore U	Jser Defaults			F2: Previous Values
				F3: Optimized Default
Boot Over	rride			F4: Save & Exit
				ESC: Exit
Launch E	FI Shell from filesystem device			

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.

Boot Override

Pressing ENTER causes the system to enter the OS.

Launch EFI Shell from filesystem device

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

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. The contents of this section include the following:

IMPORTANT NOTE:

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

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) QM67/Q67 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.
- 5. On the Readme File Information screen, click *Next* to continue the installation.
- 6. The Setup process is now complete. Click *Finish* to restart the computer and for changes to take effect.

VGA Drivers Installation

NOTE: Before installing the *Intel(R) QM67 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) QM67/Q67 Chipset Drivers*.
- 2. Click Intel(R) QM67 Chipset Family Graphics Driver.



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



- 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® Graphics Media Accelerator Driver.

- 6. On Setup Progress screen, click *Next* to continue.
- 7. Setup complete. Click *Finish* to restart the computer and for changes to take effect.

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) QM67/Q67 Chipset Drivers*.
- 2. Click Realtek High Definition Audio Driver.



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

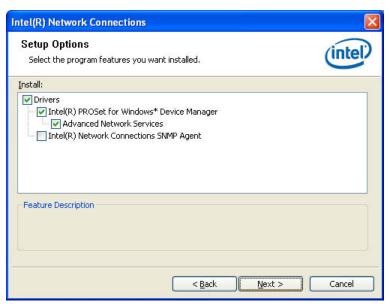


LAN Drivers Installation

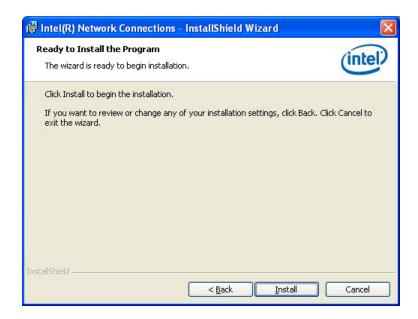
- 1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R) QM67/Q67 Chipset Drivers*.
- 2. Click Intel(R) PRO LAN Network Driver.



- 3. When the Welcome screen appears, click **Next**. On the next screen, click **Yes** to to agree with the license agreement.
- 4. Click the checkbox for **Drivers** in the Setup Options screen to select it and click **Next** to continue.



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



6. When InstallShield Wizard is complete, click Finish.



Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 064h	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy
	Signal
0F1h	Reset Math Coprocessor
E000-E01F	Network Connection
F060-F07F	Network Connection
F080-F0D7	SATA Storage Controller
2F8h - 2FFh	Serial Port #2(COM2)
3B0h- 3BBh	Graphics adapter Controller
3F8h - 3FFh	Serial Port #1(COM1)
3D0h - 3DFh	CGA adapter