SI-58 Series

User Manual



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Table of Contents

Safety Information
Setting up your system4
Care during use4
Acknowledgments5
Accessories7
Components
I/O View
Specification
Mounting SI-58 to the Wall 10
Wall mounting requirements11
Selecting the location11
Exploded view of the SI-58 assembly12
Parts description
Installation
Installing CPU13
Installing CPU
Installing CPU
Installing CPU 13 Installing the memory 13 Setting Jumper 14 Jumper Locations 15
Installing CPU 13 Installing the memory 13 Setting Jumper 14 Jumper Locations 15 BIOS Setup 23
Installing CPU 13 Installing the memory 13 Setting Jumper 14 Jumper Locations 15 BIOS Setup 23 Drivers Installation 49
Installing CPU 13 Installing the memory 13 Setting Jumper 14 Jumper Locations 15 BIOS Setup 23 Drivers Installation 49 Intel Chipset Software Installation Utility 49
Installing CPU 13 Installing the memory 13 Setting Jumper 14 Jumper Locations 15 BIOS Setup 23 Drivers Installation 49 Intel Chipset Software Installation Utility 49 VGA Drivers Installation 51
Installing CPU13Installing the memory13Setting Jumper14Jumper Locations15BIOS Setup23Drivers Installation49Intel Chipset Software Installation Utility49VGA Drivers Installation51Realtek HD Audio Driver Installation52
Installing CPU13Installing the memory13Setting Jumper14Jumper Locations15BIOS Setup23Drivers Installation49Intel Chipset Software Installation Utility49VGA Drivers Installation51Realtek HD Audio Driver Installation52LAN Drivers Installation53

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

- AMI is a registered trademark of AMI Software International, Inc.
- 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:

1. 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	normai	
	Pin 2-3		
123	Short/Closed		

JP2: Clear ME Setting

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

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	S 1	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
18	2	DTR
	3	TXD
	4	GND
	5	DCD
	6	RXD
	7	DSR
	8	CTS



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)



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

1	0	2
	00	
7	00	8

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

	Pin #	Signal Name	
	1	Ground	
3 2 1	2	+12V	
521	3	Rotation	
		detection	

SYS_FAN: SYSTEM Fan Power Connector

3	2	1	_

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

AUX_FAN: SYSTEM Fan Power Connector

Г				-
L	3	2	1	

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:

Press 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.

Main BIOS Setup

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

Main	Advanced	Chipset	Boot	Securit	y Save & Exit
BIOS INFO	ORMATION				
System La	inguage		[English]		
					$\rightarrow \leftarrow \texttt{Select Screen}$
System Da	ate		[Tue 01/06/2009]		↑↓ Select Item
System Ti	me		[00:08:21]		Enter: Select
					+- Change Field
Access Le	vel		Administrator		F1: General Help
7100000 20	vor		, an in the second		F2: Previous Values
					F3: Optimized Default
					F4: Save & Exit
					ESC: Exit

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

- **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			$\rightarrow \leftarrow \texttt{Select Screen}$	
CPU Configuration			↑↓ Select Item	
 Shutdown Temperature Configuration 			Enter: Select	
► Auto Power On Schedule			+- Change Field	
► 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

Main Advanced Chipset	Boot Secu	ity Save & Exit	
PCI Bus Driver Version	V 2.03.0	0	
PCI ROM Priority	E	FI Compatible ROM	
PCI Common Settings			
PCI Latency Timer	3	2 PCI Bus Clocks	
VGA Palette Snoop	D	isabled	
PERR# Generation	D	isabled	
SERR# Generation	D	isabled	
			→ ←Select Screen
PCI Express Device Settings			↑↓ Select Item
Relaxed Ordering	D	isabled	Enter: Select
Extended Tag	D	isabled	+- Change Field
No Snoop	E	nabled	F1: General Help
Maximum Payload	A	uto	F2: Previous Values
Maximum Read Request	А	uto	F3: Optimized Default
			F4: Save & Exit
PCI Express Link Settings			ESC: Exit
ASPM Support	D	isabled	
W ARNING: Enabling ASPM may cause	se some		
PC I-E devices to	o fail		
Extended Synch	D	isabled	

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

Aptio Setup Utility

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 U	tility
Main Advanced Chipset	Boot	Security Save & Exit
	Dischlad	Solost Samon
Enable ACPI Auto Configuration	Enabled	→ Select Screen ↑ ↓ Select Item
ACPI Sleep State	S3 (Suspend t	oR) Enter: Select
Lock Legacy Resources	Disabled	+- Change Field
		F1: General Help
		F2: Previous Values
		F3: Optimized Default
		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 Uti	lity	
Main	Advanced Chipset	Boot	Securit	y Save & Exit
Wake sys	tem with Fixed Time	Disab	led	
				\rightarrow \leftarrow Select Screen
Wake on	Ring	Disabled		↑↓ Select Item
Wake on	PCIE 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.

	<u> </u>		
Main Advanced Chipset	Boot	Security	y Save & Exit
CPU Configuration			
Intel® Core™ i7-7210QE CPU @ 2.1	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		s - Soloat Saroon
Intel HT Technology	Supported		A Coloct Item
			Foter: 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		

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.)

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	Securit	y Save & Exit
				[Enable Provide the Standby
ACPI Shu	tdown 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 Securit	y Save & Exit
SATA Controllers(s)	Enabled	Enable or disable SATA Device.
SATA Mode Selection	IDE	
Serial ATA Port 0	Empty	
Software Preserve	Unknown	
Serial ATA Port 1	Empty	\rightarrow \leftarrow Select Screen
Software Preserve	Unknown	†↓ Select Item
Serial ATA Port 2	Empty	Enter: Select
Software Preserve	Unknown	+- Change Field
Serial ATA Port 3	Empty	F2: Previous Values
Software Preserve	Unknown	F3: Optimized Default
Serial ATA Port 4	Empty	F4: Save & Exit
Software Preserve	Unknown	ESC: Exit
Serial ATA 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	1	
Main	Advanced Chipset	Boot	Security	y Save & Exit
				Configure Management Engine
ME FW Ve	ersion	7.0.4.1197		Technolory Parameters.
ME Firmw	are Mode			
ME Firmw	are Type	Full Sku Firmware		
ME Firwar	e SKU	Unidentified		\rightarrow \leftarrow Select Screen
Firmware	Update Congfiguration			†↓ Select Item
				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.

Main Advanced Chipset	Boot	Security	y 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		\rightarrow \leftarrow Select Screen
Intel AMT Password Write Enabled	Enabled		↑↓ Select Item
Amt Wait Timer	0		Enter: Select
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		

Aptio Setup Utility

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 Advanced Chipset Main Boot Security Save & Exit USB Configuration USB Devices: 2 Hubs $\leftarrow \texttt{Select Screen}$ \rightarrow Legacy USB Support Enabled ↑↓ Select Item XHCI Hand-off Enabled Enter: Select EHCI Hand-off Enabled Change Field +-F1: General Help USB hardware delays and time-outs: F2: Previous Values USB transfer time-out 20 sec F3: Optimized Default Device reset time-out 20 sec F4: Save ESC: Exit Device power-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 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 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.

	Α	ptio Setup Utility		
Main Advance	d Chipset	Boot Se	ecurity	Save & Exit
Super IO Configuration				
				\rightarrow \leftarrow Select Screen
Super IO Chip	٧	Vinbond W83627DH	IG	↑↓ Select Item
 Serial Port 0 Configura 	tion			Enter: Select
Serial Port 1 Configuration				+- Change Field
-				F1: General Help
				F2: Previous Values
Power Failure				F3: Optimized Default
		Always off		F4: Save & Exit
				ESC: Exit

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.

Power Failure

- Options are: Keep last state
- Always on
- Always off (default)

H/W Monitor

Monitor hardware status.

		Aptio Setup U	tility	
Main	Advanced Chipset	Boot	Security	y Save & Exit
PC Health	Status			
►Smart Fa	n Mode Configuration			
SYSTIN T	emperature	+46 C		
CPUTIN T	emperature	+45 C		
AUXTIN T	emperature	+47 C		\rightarrow \leftarrow Select Screen
System Fa	n Speed	5976 RPM		†↓ Select Item
CPU Fan S	Speed	5976 RPM		Enter: Select
AUX Fan S	Speed	5285 RPM		+- Change Fleid
CPUVcore	1	+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

Main Advanced c	hipset Boot	Security	v Save & Exit
COM0 (Disabled)			
Console Redirection	Port is Disabled		
COM4(PCI Dev0, Func0) (Disa	abled)		
Console Redirection	Port is Disabled		
			\rightarrow \leftarrow Select Screen
Serial Port for Out-of-Band Ma	nagement/		↑↓ Select Item
Windows Emergency Manag	gement Services (EMS)		Enter: Select
	goment Corriect (Line)		+- Change Field
Console Redirection	Enabled		F1: General Help
Out-of-Band Mgmt Port	COM0 (Disabled	i)	F2: Previous Values
Data Bits	8		F3: Optimized Default
Parity	None		F4: Save & Exit
Stop Bits	1		ESC: Exit
Terminal Type	VT-UTF8		

Aptio Setup Utility

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

Main	Advanced Chipset	Boot	Security	y Save & Exit
Sandybrid	ge PPM Configuration			
EIST		Enabled		
Turbo Moo	de	Enabled		$ ightarrow$ \leftarrow Select Screen
CPU C3 R	eport	Enabled		†↓Select Item
CPU C6 R	eport	Enabled		Enter: Select
CPU C7 R	eport	Enabled		+- Change Field
				F1:General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Aptio Setup Utility

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	n Agent (SA) Configu	ration			
► PCH-IC	O Configuration				

System Agent (SA) Configuration

Main	Advanced	Chipset	Boot	Security Save &
Exit				
System Ag	gent RC Version		1.1.0.0	
VT-d Capa	ability	Supported		
VT-d		Enabled		
				\rightarrow \leftarrow Select Screen
				↑↓ Select Item
► Intel IC	GFX Configuration			Enter: Select
	-			+- Change Field
				F1: General Help
				F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Aptio Setup Utility

VT-d

Check to enable VT-d function on MCH.

Intel IGFX Configuration

		Aptio Setup Ut	ility	
Main	Advanced	Chipset	Boot	Security Save &
Exit				
Intel IGFX	Configuration			
IGFX VBI	OS Version	2108		
IGFX Free	quency	650 MHz		
				\rightarrow \leftarrow Select Screen
Primary D	lisplay	Auto		†↓ Select Item
Internal G	raphics	Auto		Enter: Select
GTT Size		2MB		+- Change Field
				F1: General Help
Aperture S	Size	256MB		F2: Previous Values
DVMT Pre	e-Allocated	64M		F3: Optimized Default
DVMT To	tal Gfx Mem	256M		F4: Save & Exit
Gfx Low F	Power Mode	Enabled		ESC: Exit
► LCD Co	ontrol			

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	rol			
Primary IC	GFX Boot Display	VBIOS Default		
				\rightarrow \leftarrow 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

Main A	Advanced	Chipset	Boot	Security Save &
Exit				
Intel PCH RC	Intel PCH RC Version		1.1.2.0	
PCH LAN Cor	ntroller	Enabled		
Wake on La	in	Disabled		
Azalia		Auto		
Azalia PME E	nable	Disabled		
Azalia Internal	I HDMI Codec	Enabled		
High Precisior	n Event Timer Confi	guration		
High Precisior	n Timer	Enabled		delect demos
				→ ← Select Screen
SLP_S4 Asse	rtion Width	4-5 Seconds		Enter: Select
Set NAND Ma	nagement Override	Enabled		+- Change Field
				F1: General Help
► USB Config	uration			F2: Previous Values
				F3: Optimized Default
				F4: Save & Exit
				ESC: Exit

Aptio Setup Utility

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.

Main	Advanced Chipset	Boot	Securit	y Save & Exit
Boot Configuration				
Setup Prom	pt Timeout	1		
Bootup Nun	nLock State	On		
Quite Boot		Disabled		\rightarrow \leftarrow Select Screen
				↑↓ Select Item
CM16 Modu	ule Version	07.63		Enter: Select
				+- Change Field
				F1: General Help
GateA20		Upon Requ	lest	F2: Previous Values
Option ROM	1 Messages	Force BIOS	3	F3: Optimized Default
Interrupt 19	Capture	Disabled		F4: Save & Exit
				ESC: Exit
Boot Option	Priorities			

Aptio Setup Utility

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.

Main Advanced Chipset Boot Sec	urity Save & Exit
Password Description	
If ONLY the Administrator's password is set, then	
this only limits access to Setup and is only asked	\rightarrow \leftarrow Select Screen
for when entering Setup.	†↓ Select Item
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

Aptio Setup Utility

Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings

Main Advanced Chipset	Boot	Security	/ Save & Exit
Save Changes and Exit			
Discard Changes and Exit			
Save Changes and Reset			
Discard Changes and Reset			
Save Options			
Save Changes			
Discard Changes			\rightarrow \leftarrow Select Screen
			↑↓ Select Item
Poctoro Dofaulto			Enter: Select
			+- Change Field
Save as User Defaults			F1: General Help
Restore User Defaults			F2: Previous Values
			F3: Optimized Default
Boot Override			F4: Save & Exit
			ESC: Exit
Launch EFI Shell from filesystem device)		

Aptio Setup Utility

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	