

CSB110-902

User Manual

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IBASE Technology Inc.

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Safety Information

Your CSB110-902 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.



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.
- Microsoft Windows is a registered trademark of Microsoft Corporation.
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CHAPTER 1 INTRODUCTION

1.1 General Description

CSB110-902 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 180 x 150 x 40 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.





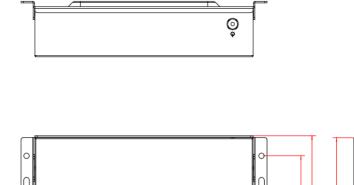
1.2 System Specifications

1.2.1 Hardware Specifications

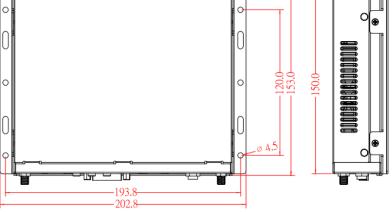
Model Name	CSB110-902
System Mainboard	IB902
CPU	2nd/3rd Generation Intel [®] Mobile Core [™] i7/i5/i3/ Celeron [®]
	QC/ DC processors (TDP <= 35W)
Chipset	Intel [®] HM76 PCH
Memory	2x DDR3 1066/1333/1600 MHz SO-DIMM, Max. 16GB
	(Non-ECC)
I/O Interface	1x HDMI, 1x DVI-I
	1x Gigabit LAN
	2x USB 3.0, 1x RS-232 (RJ45 connector)
	1x Power Button with LED light
	1x DC Jack
	1 x Audio port for Mic-in + Line-in / Line-out
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
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)
RoHS	Yes
Certification	CE, FCC class B

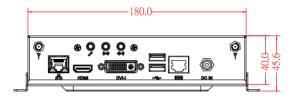
•This specification is subject to change without prior notice.

1.2.2 Dimensions







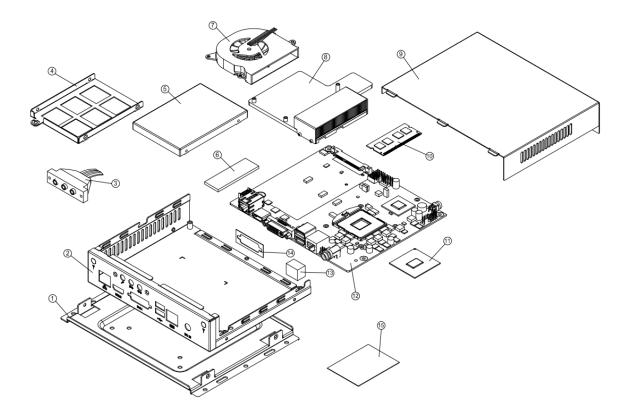




1.2.3 I/O View



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



1.3 Exploded View of the CSB110-902 Assembly

1.3.1 Parts Description

Part No.	Description	Part No.	Description
1	CSB110-902 VESA bracket	2	Base
3	CBL; Audio 18A	4	2.5" HDD bracket
5	2.5" HDD	6	Thermal pad
7	Fan 70*70*12mm	8	Heatsink
9	Top Cover	10	Memory
11	CPU	12	DIP PCBA, IB902
13	LAN Gasket	14	Gasket
15	Label, CE/FCC		



1.4 Packing List

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

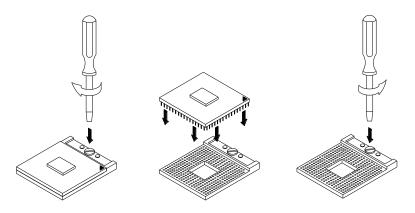
1.4.1 Optional Items

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)	
Internal cable-1/2	From Wifi module to Rear/Front panel (A055RFA0000021000P/A055RFA0000032000P)	
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)	
ZU 202 ZU 200		
	(A008WIRELESS00520P) Wireless; 3.75G UMTS/HSPA & GPS Module	
ZU 200	(A008WIRELESS00520P) Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P) Cable; Antenna-2 30CM P 2pcs	
ZU 200 Cable	(A008WIRELESS00520P) Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P) Cable; Antenna-2 30CM P 2pcs (C501ANT020030000P)	
ZU 200 Cable Antenna	(A008WIRELESS00520P) Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P) Cable; Antenna-2 30CM P 2pcs (C501ANT020030000P) Antenna; 3G, P, 2pcs (A055ANT0921Q2P000P)	<image/>

2 HARDWARE INSTALLATION

2.1 Installing the CPU

The IB902 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.



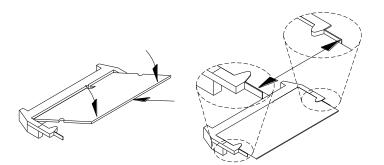
2.2 Installing the Memory

The IB902 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.



2.3 Installing the HDD Module

HDD Module:

1. Remove the three 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 the step in the pictures below.





- 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 IB902 motherboard is based on the latest Intel® HM76 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[®] 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 HM76 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 IB902 board utilizes the dramatic increase in performance provided this Intel's latest cutting-edge technology. Measuring 175mm x 147mm, the IB902 offers fast 6Gbps SATA support (1 ports), USB3.0 (2 ports) and interfaces for DVI-I and HDMI displays.

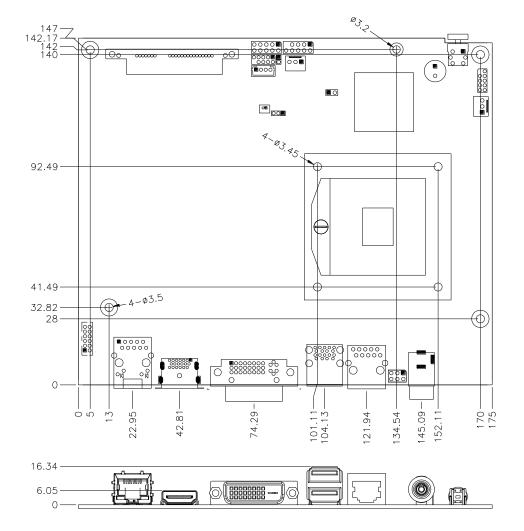
Specification – Mainboard			
Model	IB902		
Form Factor	Customized		
	CPU		
Model	- Intel [®] 3 rd Generation Core [™] I7/I5/I3 mobile processors		
	- rPGA package, 37.5 mm x 37.5mm		
Speed	Up to 3.3GHz		
Cache	Up to 6MB		
Socket	rPGA 988B (Socket G2)		
TDP	35W		
	Chipset		
Model	Intel [®] HM76 Platform Controller Hub		
	25 x 27 mm package size		
	BIOS		
Model	AMI BIOS [16MB SPI ROM]		
Memory			
Max. Support	Intel [®] 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 [™] mobile processor integrated Gfx, Direct X 11,
Diaglass	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 HM76 (Real panel) for single GbE (Rear)
USB	USB 2.0 host controller [Panther Point integrated]
	 1 port via MiniPCIe socket; 2 ports via pin-header USB 3.0 host controller [Panther Point integrated]
	- 2 ports in the rear panel
Serial ATA	Intel [®] HM76 PCH built-in SATA controller
	1x SATA 3.0 2.5" HDD Dock
Audio	Intel [®] HM76 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)
	CPU fan & SYS fan (4-pin connector x 2, supports PWM)
iAMT	None
Expansion slot	Mini PCI-Express x 1 port [Full-sized] w/mSATA +USB 2.0 support
	Edge I/O
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)
LPCI/O	1x RS-232 (RJ45) (Rear)
Other	1x Power Jack (+12V DC) (Rear); 1x Power On/Reset button with LED (Front)
	Internal I/O
FAN	CPU fan & SYS fan (4-pin connector x2
Serial ATA	Intel [®] HM76 PCH built-in SATA controller
Memory	1x SATA 3.0 2.5" HDD Dock
	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	N/A
	ISMART function
Other	Dimensions
PCB	175mm x 147mm
	Power Supply
Power	Power Jack (+12V DC)
	Environmental
Temperature	Operating: 0°C~ 40°C (32°F~104°F)
isinpolataro	Storage: -20oC to 80oC(-4oF~167oF)
Humidity	10%~90% (non-condensing)
Shock	IBASE Standard Test
Vibration	IBASE Standard Test
Certification	RoHS
Other	CE/FCC

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Board Dimensions



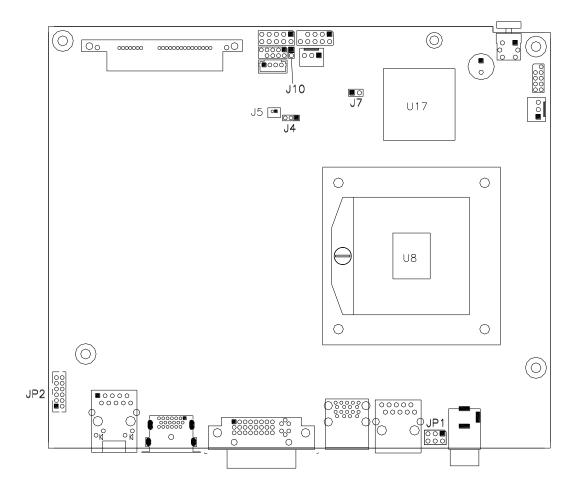


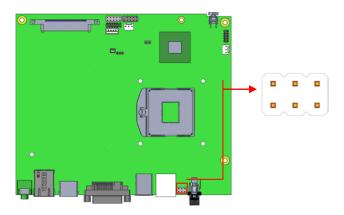
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3.2 Setting the Jumpers

Jumpers are used on IB902 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 IB902

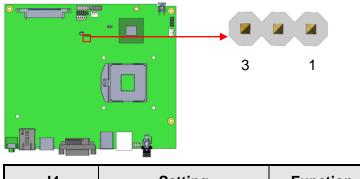




JP1: COM1 RS232 RI/+5V/+12V Power Setting

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

J4: Clear CMOS Contents

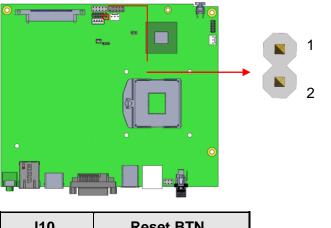


J4	Setting	Function
123	Pin 1-2 Short/Closed	Normal
123	Pin 2-3 Short/Closed	Clear CMOS



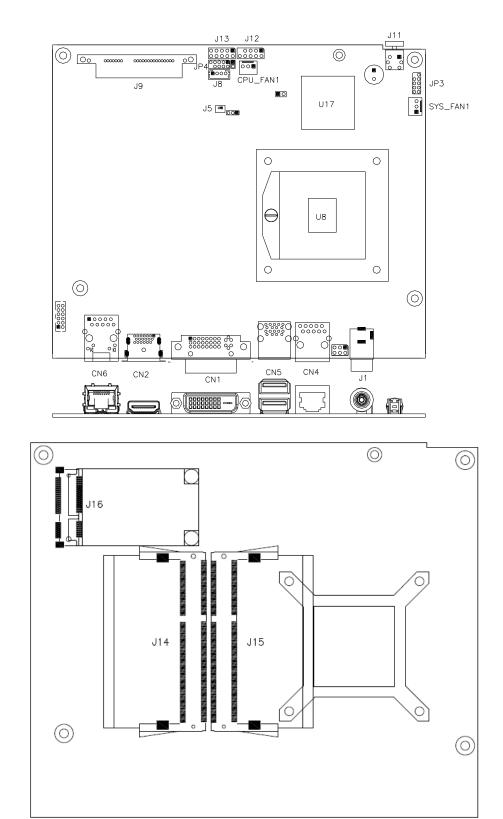
J7	Flash Descriptor Security Override
Open	Disabled (Default)
Close	Enabled

J10: Reset BTN



J10	Reset BTN
Open	Disabled (Default)
Close	Enabled

J7: Flash Descriptor Security Override (Factory use only)



3.3 Connector Locations on IB902



CN1: DVI-I C	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-
	DDC CLOCK	6	21	DATA 5+
	DDC DATA	7	22	SHIELD CLK
S 0	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

CN5: USB3 Connector

CN6: Gigabit LAN (82579V)

J1: +12V Power Supply Connector

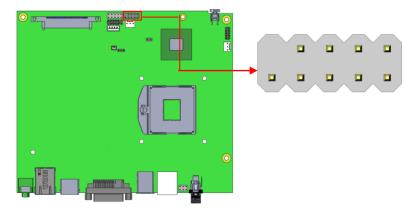
J5: Battery 1/2AA Connector

	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 🗖 🕤 ೧	Ground	1	2	+5V
1 ■ 0 2 0 0 0 0	Out3	3	4	Out1
00 90010	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

	Pin #	Signal Name
	1	Ground
321	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 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.

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	2013]	→ ← Select Screen $\uparrow \downarrow$ Select Item
System Ti	me		[00.00.00]		Enter: Select +- Change Field
					F1: General Help F2: Previous Values
Access Le	evel		Administrato	r	F3: Optimized Default 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	Save & Exit
 ACPI Set Wake up CPU Co SATA Co Shutdow iSmart Co AMT Co USB Coo F81866 F81866 CPU PF 	p event setting onfiguration Configuration wn Temperature Co	ration		- 1 1 1	 → ← Select Screen ↑ ↓ Select Item Enter: Select ← Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit

Aptio Setup Utility



PCI Subsystem Settings

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Bus D	river Version		V 2.0502		
PCI 64bit F	Resources Handing				
Above 4G	Decoding		Disabled		
PCI Comm	non Settings				→ ← Select Screen
PCI Latend	cy Timer		32 PCI B	us Clocks	↑↓Select Item Enter: Select
VGA Palet	te Snoop		Disabled		+- Change Field
PERR# Ge	eneration		Disabled		F1: General Help F2: Previous Values
SERR# Ge	eneration		Disabled		F3: Optimized Default F4: Save ESC: Exit
► PCI Exp	oress Settings				FA. Save ESC. EXIL

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.

Main	Advanced	Chipset	Boot	Secur	ity Save & Exit
PCI Expre	ss Device Register S	ettings			
Relaxed C	Ordering		Disabled		
Extended	Тад		Disabled		
No Snoop			Enabled		
Maximum	Payload		Auto		
Maximum	Read Request		Auto		
PCI Expre	ss Link Register Setti	ngs			
ASPM Su	pport		Disabled		
WARNING	6: Enabling ASPM ma	y cause	Disabled		
	some PCI-E devices	to fail			
Extended	Synch		Disabled		→ ← Select Screen
					↑ ↓ Select Item
Link Train	ing Retry		5		Enter: Select +- Change Field
Link Train	ing Timeout (uS)		100		F1: General Help F2: Previous Values
Unpopulat	ed Links		Keep Link O	N	F3: Optimized Default
					F4: Save ESC: Exit

Aptio Setup Utility

PCI Express Settings

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 L0s – Force all links to L0s 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	Secu	urity	Save & Exit		
ACPI Setti	ngs					Select Screen		
Enable Hib	pernation	Enabled			<pre>→ ← Select Screen ↑ ↓ Select Item Enter: Select</pre>			
ACPI Sleep State		S1 only(CPU Stop Clock)				ange Field Meral Help		
Lock Lega	cy Resources	Disabled		FS	3: Op	evious Values timized Default		
S3 Video F	Repost	Disabled		F4	4: 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		<pre>→ ← Select Screen ↑ ↓ Select Item Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit</pre>		

Wake on PCIE PME Wake Event

The options are Disabled and Enabled.



CPU Configuration

			Aptio Set	up Utility				
Main	Advanced	Chipset	Boot	Security	Save	e & Exit		
CPU Conf Intel® Con Processor Microcode Max CPU Min CPU S CPU Spee Processor Intel HT To Intel VT-x	iguration e ™ i5-3610ME CPI Stepping Revision Speed Speed ed Cores	<u> </u>	306a9 c 2700 MHz 1200 MHz 2700 MHz 2 Supported Supported Supported		Save	<pre>& Exit</pre>		
Hyper-thre Active Pro	eading cessor Cores		Enabled All			↑↓ Select Item Enter: Select		
Limit CPU Execute D	ID Maximum isable Bit		Disabled Enabled			+- Change Field F1: General Help F2: Previous Values F3: Optimized Default		
	alization Technology		Disabled Enabled			F4: Save ESC: Exit		

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	y Save & Exit		
SATA Cor SATA Moo	ntroller(s) de Selection		Enabled AHCI				
SATA Port0 Software Preserve SATA Port5			Empty		→ ← Select Screen		
			Unknown		↑↓Select Item Enter: Select		
			Empty		+- Change Field F1: General Help		
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	Security	Save & Exit
APCI Shu	utdown Temperatu	re	Disabled	↑ ↓ Ent +- F1: F2: F3:	- Select Screen Select Item er: Select Change Field General Help Previous Values Optimized Default Save ESC: Exit

ACPI Shutdown Temperature

The default setting is Disabled.

iSmart Controller

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Securi	ty Sa	ave & Exit
iSmart Co	ontroller					
Power-O	n after Power failure	9	Disabl	le	↑↓s	Select Screen Select Item r: Select
Schedule	e Slot 1		None			hange Field General Help
Schedule	e Slot 2		None		F3: (Previous Values Dptimized Default Save ESC: Exit

ISmart Controller

Setup the power on time for the system.

Schedule Slot 1 / 2

Setup the hour/minute for system power on.

				-	
Main	Advanced	Chipset	Boot	Security	Save & Exit
Intel AMT			Enabled		
BIOS Hotk	ey Pressed		Disabled		
MEBx Sele	ection Screen		Disabled		
Hide Un-C	onfigure ME Confire	mation	Disabled		
Un-Configu	Un-Configure ME		Disabled		
Amt Wait T	limer		0		
Activate Re	emote Assistance F	rocess	Disabled		
USB Confi	gure		Enabled		→ ← Select Screen ↑↓Select Item
PET Progr	ess		Enabled		Enter: Select +- Change Field
AMT CIRA	Timeout		0		F1: General Help F2: Previous Values
Watchdog			Disabled		F3: Optimized Default
OS Tim	ner		0		F4: Save ESC: Exit
BIOS Tir	mer		0		

Aptio Setup Utility

AMT Configuration

AMT Configuration

This configuration is supported only with IB902VF (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 IB902VF (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 IB902VF (with iAMT function). Enable/Disable Watchdog Timer.



USB Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit
USB Conf	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 +- Change Field
USB hard	ware delays and tim	ne-outs:			F1: General Help F2: Previous Values
USB Tran	sfer time-out		20 sec		F3: Optimized Default
Device res	set tine-out		20 sec		F4: Save ESC: Exit
Device po	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 Config	uration			
► Serial Port 0 Configu	ation		↑ ↓ Select Enter: Se +- Change F1: Genera F2: Previo	lect Field I 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.



F81866 H/W Monitor

			-		
Main	Advanced	Chipset	Boot	Security	Save & Exit
PC Health	Status				
CPU temp	erature	+32 C	;		
SYS temp	erature	+35 C	;		
FAN1 Spe	ed	5154	RPM		
FAN2 Spe	ed	N/A			
Vcore		+0.90	4 V		
Vcc5V		+5.00	3 V		
Vcc12V		+12.4	08 V		elect Screen
+1.5V		+1.51	2 V	→ ← So ↑ ↓ Select	
Vcc3.3V		+3.29	+3.296 V		lect e Field
				F1: Genera	al Help
Fan1 sma	rt fan control	Disab	led	F2: Previo F3: Optim	ous Values ized Default
Fan2 sma	rt fan control	Disab	led	F4: Save	ESC: Exit

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 S	Setup Utility		
Main	Advanced	Chipset	Boot	Security	Save & Exit
CPU PPM	Configuration			→ ← Sele	ect Screen
EIST		Ena	bled	Enter: Se +- Chang F1: Gener	elect ge Field
Turbo Mod	le	Ena	bled	F2: Previ F3: Optin	ai heip .ous Values mized Default ESC: Exit

EIST

Enable/Disable Intel SpeedStep.

Sandybridge DTS Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Sandybric	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	► System Agent (SA) Configuration						

PCH-IO Configuration

This section allows you to configure the North Bridge Chipset.

Main	Advanced	Chipset	Boot	Security	Sa	ve & Exit
Intel PCH F	RC Version		1.1.0.0			
Intel PCH S	SKU Name		HM76			
Intel PCH F	Rev ID		O4/C1			
► PCI Exp	ress Configuration					
► USB Co	nfiguration					
► PCH Az	alia Configuration					
PCH LAN (Controller		Enabled			
Wake	on LAN		Disabled			→ ← Select Screen $\uparrow \downarrow$ Select Item
Board Cap	ability		SUS_PW	R_ON_ACK		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.

Main Advanced	Chipset	Boot	Security	y Save & Exit
PCI Express Configuration				
PCI Express Clock Gating	I	Enabled		
DMI Link ASPM Control	I	Disabled		
DMI Link Extended Synch Cor	ntrol I	Disabled		
PCIe-USB Glitch W/A	I	Disabled		
 PCI Express Root Port 1 PCI Express Root Port 2 PCI Express Root Port 3 PCI Express Root Port 4 PCI Express Root Port 5 PCI-E Port 6 is assigned PCI Express Root Port 7 PCI Express Root Port 8 	to LAN			 → ← Select Screen ↑ ↓ Select Item Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit

PCI Express Configuration

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	iguration				
XHCI Pre- xHCI Mode	Boot Driver		Disabled Auto		
	ort #1 Switchable		Enabled		
HS Po	ort #2 Switchable		Enabled		
HS	HS Port #3 Switchable		Enabled		
HS	S Port #4 Switchabl	e	Enabled		
xHCI	Streams		Enabled		
EHCI1			Enabled		→ ← Select Screen ↑↓Select Item Enter: Select
EHCI2			Enabled		+- Change Field F1: General Help
USB Ports	Per-Port Disable C	Control	Disabled		F2: Previous Values 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	Sec	urity	Save & Exit
PCH Azal Azalia	ia Configuration	A	uto		Enter: +- Cha F1: Gen F2: Pro F3: Op	Select Screen lect Item Select ange Field neral Help evious Values timized Default ve ESC: Exit

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	System Agent Bridge Name		lvyBridge		
System Ag	gent RC Version		1.1.0.	0	
VT-d Capa	ability		Suppo	orted	
VT-d			Enabl	ed	
CHAP Dev	vice (B0:D7:F0)		Disab	led	
Thermal D	evice (B0:D4:F0)		Disab	led	
Enable NE	3 CRID		Disab	led	
BDAT ACI	PI Table Support		Disab	led	$\rightarrow \leftarrow$ Select Screen
C-State P	re-Wake		Enabl	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	y Save & Exit
Graphics (Configuration				
IGFX VBI	OS Version		2132		
IGfx Frequ	iency		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	al 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	Contia	uration

Aptio Setup Utility

Main Advar	ced Chipset	Boot	Security	Save & Exit
Memory Information				
		1100		
Memory RC Version		1.1.0.0		
Memory Frequency		1333 MHz		
Total Memory		2048 MB (DDR3)	
DIMM#0		2048 MB (DDR3)	
DIMM#1		Not Prese	nt	
CAS Latency (tCL)		9		
Minimum delay time				→ ← Select Screen $\uparrow \downarrow$ Select Item
CAS to RAS	(tRCDmin)	9		Enter: Select +- Change Field
Row Precha	rge (tRPmin)	9		F1: General Help F2: Previous Values F3: Optimized Default
Active to Pre	charge (tRASmin)	24		F4: Save ESC: Exit



Boot Settings

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Securit	ty	Save & Exit
Boot Confi	guration					
Setup Pror	npt Timeout		1			
Bootup Nu	mLock State		On			
Quiet Boot		Disable	Disabled			
Fast Boot			Disable	d		
CSM16 Mo	odule Version		07.68			
					$\rightarrow \leftarrow$	Select Screen
GateA20 A	Active		Upon R	equest		elect Item : Select
Option RO	M Messages		Force B	IOS	+- Ch	ange Field
INT19 Tra	o Response		Immedia			eneral Help revious Values
Boot Optio	n Priorities				-	ptimized Default ave ESC: Exit
► CSM pa	arameters				11.00	AVC BOC. EXIC

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 S	Setup	Utility
---------	-------	---------

Main	Advanced	Chipset	Boot	Security	Save & Exit
Launch C	SM		Always		
Boot option filter		UEFI and Legacy			
Launch PXE OpROM policy		Do not launch			
Launch St	orage OpROM policy		Do not lau	nch	
Launch Vi	Launch Video OpROM policy		Legacy only		→ ← Select Screen $\uparrow \downarrow$ Select Item
Other PCI	Other PCI device ROM priority		Legacy OpROM		Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit

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						
If ONLY the Administrator's password is set, then this only limit access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights							
The passw	ord length must be						
in the follo	wing range:						
Minimum I	ength			3			
Maximum	length			20	→ ← Select Screen ↑ ↓ Select Item Enter: Select +- Change Field		
Administra	tor Password				F1: General Help		
User Pass	word				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	inges and Exit changes and Exit inges and Reset changes and Reset				
Save Opti Save Cha Discard C	inges				→ ← Select Screen ↑↓Select Item
	Defaults Jser Defaults Jser Defaults				Enter: Select +- Change Field F1: General Help F2: Previous Values F3: Optimized Default F4: Save ESC: Exit
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.

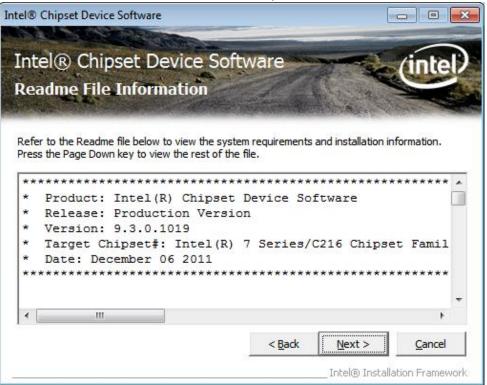


4. Click **Yes** to accept the software license agreement and proceed with the installation process.

ntel® Chipset Device Software			
Intel® Chipset Device Sc License Agreement	oftware	R	intel
You must accept all of the terms of the license program. Do you accept the terms? INTEL SOFTWARE LICENSE AGREEMENT (OF IMPORTANT - READ BEFORE COPYING, INST Do not use or load this software and any ass until you have carefully read the following te Software, you agree to the terms of this Agr install or use the Software.	EM / IHV / ISV Distribu FALLING OR USING. sociated materials (col erms and conditions. B	tion & Single User lectively, the "Sof y loading or using) ^ ftware") the
Please Also Note: * If you are an Original Equipment Manufact (IHV), or Independent Software Vendor (ISV			
	8 	Intel® Installati	on Framework



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.



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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.





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	х
Intel® HD Graphics Driver	
License Agreement	
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?	
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User) IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.	
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies; * If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT,	Ŧ
< <u>B</u> ack <u>Y</u> es No Intel® Installation Frame] work

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

Intel® Installation Framework	
Intel® HD Graphics Driver	
Readme File Information	(intel)
Refer to the Readme file below to view the system requirements and installatio	n information.
Production Version Releases Microsoft Windows* 7 64 Microsoft Windows* Embedded Standard 7-64(1) (1)These operating systems supported for embedded designs and usage models only. Driver Revision: 15.26.6.64.2669	*
March 5, 2012	-
<back next=""></back>	<u>C</u>ancel

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

Intel® Installation Framework	
Intel® HD Graphics Driver Setup Progress	intel
Please wait while the following setup operations are perform Creating Registry Key: HKLM\SOFTWARE\Microsoft\Window Creating Registry Key: HKLM\SOFTWARE\Microsoft\Window Creating Registry Key: HKLM\SOFTWARE\Microsoft\Window Creating Process: C:\Windows\system32\regsvr32.exe Creating Process: C:\Windows\system32\regsvr32.exe Creating Process: C:\Windows\system32\regsvr32.exe Creating Process: C:\Windows\system32\regsvr32.exe	vs Media Foundation\HardwareMFT 🔺 vs Media Foundation\HardwareMFT
Creating Process: C:\Windows\system32\regsvr32.exe Deleting Registry Key: HKLM\SOFTWARE\Intel\MediaSDK\D Creating Process: D:\Intel\7 Series\VGA\Windrv\WinVista7\ Click Next to continue.	
	Next >

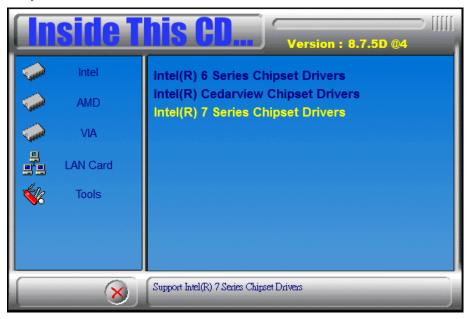
7. Setup complete. Click *Finish* to restart the computer and for changes to take effect.



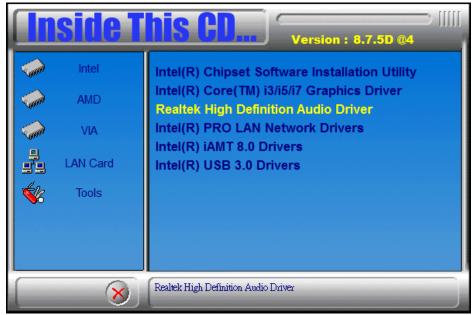
5.3 Realtek HD Audio Driver Installation

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 Driver Setup (3.15) R2.57	x
Welcome to the InstallShield Wizard for Realtek High Definition The InstallShield Wizard will install Realtek High Definition Audio Driver on yor continue, click Next.	
InstallShield < <u>B</u> ack	Cancel

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

Realtek High Definition Audio D	river 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	< Back Finish Cancel



5.4 LAN Drivers Installation

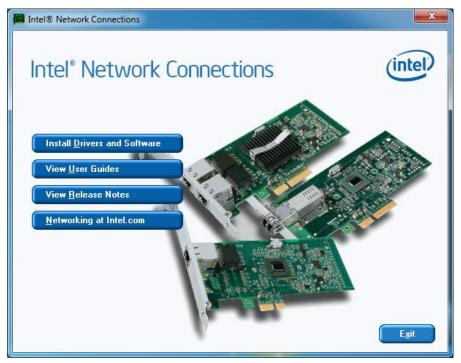
1. Insert the CD that comes with the board. Click *Intel* and then *Intel(R)* **Q7** Series *Chipset Drivers.*



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



3. Click Install Drivers and Software.



4. When the Welcome screen appears, click Next.

授 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.	
InstallShield	Cancel



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

H Intel(R) Network Connections - InstallShield Wizard
License Agreement Please read the following license agreement carefully.
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 conditions. By copying, installing, or otherwise using the Software, you agree to be bound by the terms of this Agreement. If you do not agree to the terms of this Agreement, do not copy, install, or use the Software.
I accept the terms in the license agreement Print
\bigcirc I <u>d</u> o 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.

Intel(R) Network Connections	×
Setup Options Select the program features you want installed.	intel
Install:	
Drivers Drivers Drivers Drock for Windows* Device Manager Drock Services Drock Advanced Network Services Drock SNMP Agent	
Feature Description	
< <u>B</u> ack <u>N</u> ext >	Cancel

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

H Intel(R) Network Connections - InstallShield Wizard	x
Ready to Install the Program The wizard is ready to begin installation.	eD
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel t exit the wizard.	D
InstallShield	

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

HIII 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



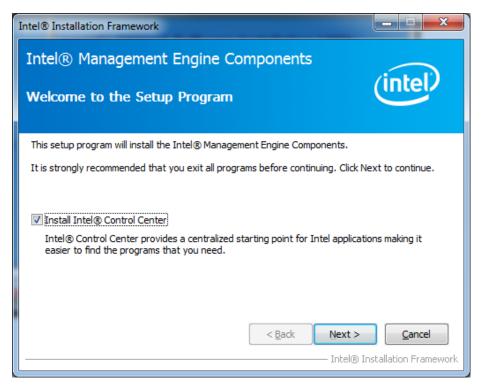
5.5 Intel[®] Management Engine Interface

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.

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



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	
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 Creating Process: C:\Program Files (x86)\Intel\Intel(R) Management Installing: Intel® ME FW Recovery Agent	ine Components\FWServic jine Components\FWServic t Engine Components\FWS
Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Eng	ine Components\Firmware
Click Next to continue.	Ŧ
•	*
	<u>N</u> ext >
	– Intel® Installation Framework
	- Intel® Installation Franlework
Intel® Installation Framework	
Intel® Installation Framework Intel® Management Engine Components	
Intel® Management Engine Components	
Intel® Management Engine Components	
Intel® Management Engine Components Setup Is Complete 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	
Intel® Management Engine Components Setup Is Complete 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	
Intel® Management Engine Components Setup Is Complete 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	
Intel® Management Engine Components Setup Is Complete 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	

5.6 Intel[®] 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*.

Intel® Installation Framework	
Intel® USB 3.0 eXtensible Host Controller Driver	
Welcome to the Setup Program	(intel)
This setup program will install the following components: • Intel® USB 3.0 eXtensible Host Controller Driver • Intel® USB 3.0 Hub Driver • Intel® USB 3.0 Host Controller Switch Driver • Intel® USB 3.0 Monitor Click Next to continue.	Cancel
	stallation Framework

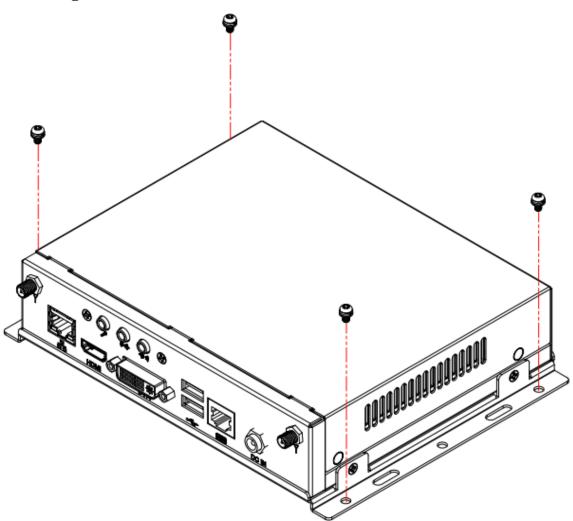
4. Click **Yes** to to agree with the license agreement and continue the installation.

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 CSB110-902 to the Wall



You can install CSB110-902 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. *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 CSB110-902 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.