AMS200

User Manual

2015 Sep Ver. A1

Table of Contents

Safety Information

Your AMS200 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

- AMI is a registered trademark of AMI Software International, Inc.
- AMD and ATI are registered trademarks of AMD Corporation.
- Microsoft Windows is a registered trademark of Microsoft Corporation.
- FINTEK is a registered trademark of FINTEK Electronics Corporation.
- REALTEK is a registered trademark of REALTEK Electronics Corporation.
- All other product names or trademarks are properties of their respective owners.

CHAPTER 1 INTRODUCTION

1.1 General Description

The AMS200 system comes with the ABP-MB70 customized motherboard and integrates the Intel® Core™ i7/i5/i3/Celeron processor with HM76 PCH that featuring 22nm microarchitecture and 3-D Tri-Gate transistors. With unparalleled reliability, the 2.71GHz processor allows the AMS200 to operate in wide temperatures at -10°C to +55°C in harsh industrial environments for 24/7 operation. The AMS200 is ideal for factory automation machine, In-vehicle and other rugged applications that could utilize its 24V DC power input.

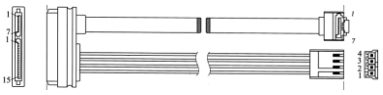
Incorporating the HM76 PCH, the AMS200 comes on board with two pieces of 2GB DDR3-133 SO-DIMM memory. The maximum system memory capacity is 16GB. Moreover, it comes with a variety of functional interface at the rear panel including four USB 2.0, four USB 3.0, two DVI-I displays, two serial ports, two Gigabit LAN, and one Terminal block connector for 24V DC input.

Measuring 297.4mm(w) by 266.2mm(d) by 78.5mm(h), the AMS200 unit comes with a wall mount kit and DC-input with terminal block type. The model is currently available with either a 2.5-inch 500GB SATA HDD or SATA SSD and 4GB industrial grade memory. Expansion is provided by two PCI slots or 1x PCI-E(x16) + 1x PCI-E(x4) or 1x PCI-E(x16) + 1x PCI slot .

1.2 System Specifications

1.2.1 Hardware Specifications

Specification –System	
CPU	
Model	3nd Generation Core I ™ processor, Ivy bridge - Part number: (iBASE or Vender P/N) ● Sub-sub 1
Model	3nd Generation Core I ™ processor, Ivy bridge - Part number: (iBASE or Vender P/N) ● Sub-sub 1
Speed	Up to 2.7GHz
Cache	Up to 8MB
Socket	rPGA 988B (Socket G2) , 37.5 mm x 37.5mm Passive CPU cooling, heat sink plus system fan.
TDP	QC = 45W/ DC = 35W
Memory	
Configuration	Intel® Ivy-Bridge mobile processors integrated memory controller DDRIII 1067/1333/1600 MHz - SO-DIMM [204-pin Horizontal type stacking] x 2 (Non-ECC) - Memory socket to be located near CPU
Max. Support	Max. 16GB
Onboard backup memory SRAM	- 512k SRAM (C02S0903000007000P) - attach the 1/2AA battery holder (A043HDBAT11030000P) to the removable plate on the rear side of the chassis
Rear Panel I/O **reference appendix 1**	
Other	- 7-segment display: LPC 80 port Via ABP-ID45 ● DF11-26pin (2 rows) to DF11-26pins (2 rows) extension cable PN: C501EXT3170152000P - Fan ● 60mm x 60mm DC Fan x1 for CPU (on rear chassis). ● 50mm x 50mm DC Fan x 1 for PSU(on front Side). - CPU fan x 1.
Front Panel I/O **reference appendix 1**	
Display	- 2 x DVI-I connector

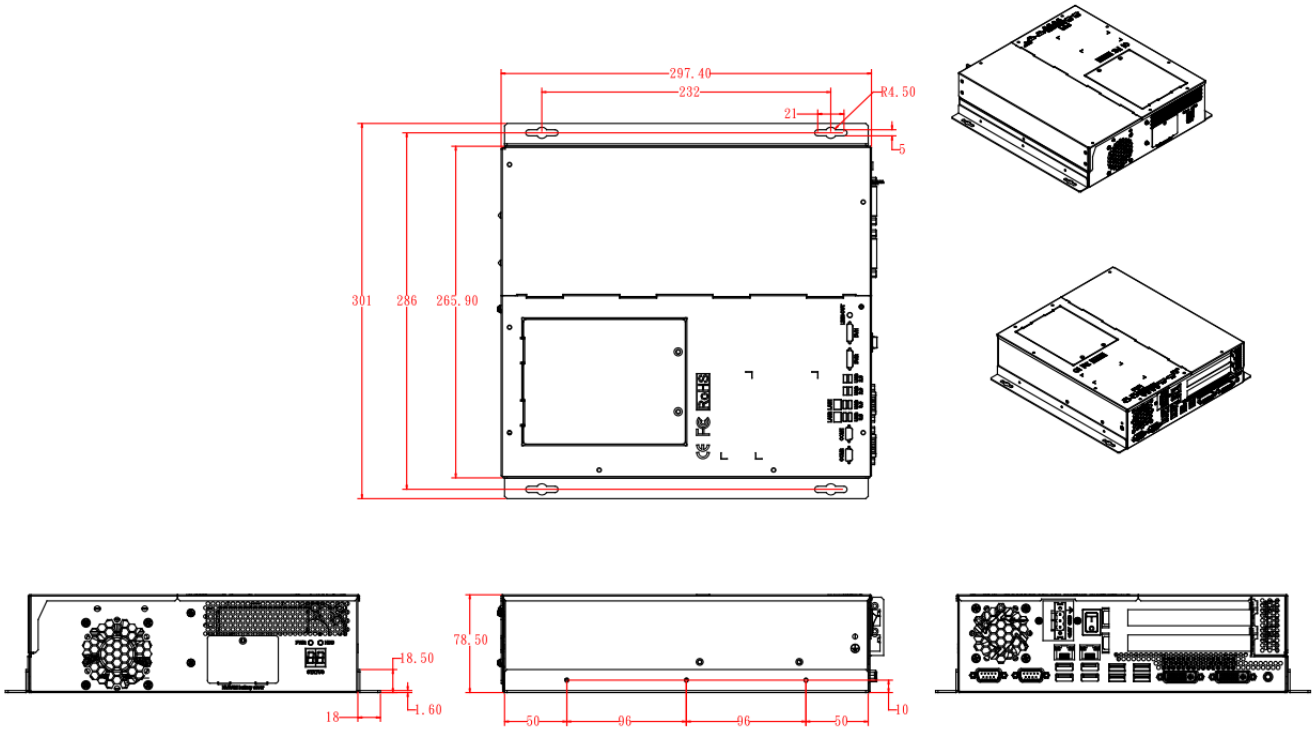
LAN / PHY	- 2 x Gigabit LAN ● Connector type: RJ45+USB3.0x2 ➢ Intel® Lewisville 82579VGbE PHY for 1st LAN ➢ Realtek RTL8111E PCI-e Gigabit LAN for 2nd LAN - Add the componet of strain relief. Please see the design in appendix 2. (廣鑫有在客製)
Audio	Intel® HM76 PCH built-in High Definition Audio controller + Realtek ALC662 w/ 5.1 channels (如果 Audio jack 放不下，就用 box header 代替) - Audio jack: Line out x 1
USB	- USB 3.0 host controller [Panther Point integrated], supports 4 ports ● 2x RJ45+USB3.0 edge connectors to support 4 ports in the front panel - USB 2.0 host controller [Panther Point integrated], support 6 ports ● 2x stacking USB2.0 ege connectors to support 4x USB2.0 in the front panel - mPCIe slot for mSTAT: use one USB2.0 signal
SATA	Intel® HM76 PCH built-in SATA controller, supports total 2 SATA3.0 ports - 2 x SATA (3.0) 6Gbps ● The location and design of the 2.5“ HDD will be the same as ABP102-945’s ● HDD SATA cable PN: C501SATA430153000P ● 品名: CBL;SATA-43 3-HD 線 15/15CM ● 規格: SATA-7+15=>小 4P-F=>SATA-7 RoHS 
LPC I / O	- COM1 (RS232/422/485), COM2 (RS232) ● 2X COM connectors to support 2 COM ports ● COM1 RS422/485 Auto Flow control ● RS-232/422/485 on COM1 selectable in BIOS
Expansion slot	- Riser card series number: ABP-IP702 (two golden fingers) ● 1xPCIe(x16) at upper slot ● 1xPCI at lower slot
Other (Same design	- +24V phoenix contact DC power input ● Terminal box to power switch cable

as ABP102-945)	➢ PN: C501PW27602082000P ➢ 品名: CABLE;PW276 2-HD 2C 線 8CM ➢ 規格: TERMAIL BLOCK-3P => PWR SW RoHS ● Power switch to ATX con. cable ➢ PN: C501PW27702402000P ➢ 品名: CABLE;PW277 2-HD 2C 線 40CM ● 規格: PWR SW => ATX PW CN-4F RoHS
Storage	
Drive Bays	No
Other	- mSATA via mPCIe slot
Dimension	
System Dimension	- 297mm(W) x 265mm(D) x 78.5mm(H) - The outer chassis dimension and mounting hole (with bracket) must be the same as ABP102-945. - Comes with 2 mounting plate to support horizontal and vertical installation (Default), see appendix 3 for mounting hole design
Power	
Power	- +24V phoenix contact DC power input - Max DC output power 320(W)
Other	- Optional PSU with AC input
Environmental	
Temperature	Operating: 0°C~60°C (32°F~140°F) (做不到 60°C 就做 55°C) Storage: -20°C~70°C (-4°F~158°F)
Humidity	5%~90% (non-condensing)
Shock	- In operation 50 m/s2, 30 ms - Storage/transport 250 m/s2, 6 ms
Vibration	- In operation: 10 to 58Hz: 0.075mm, 58 to 500Hz: 9.8 m/s2 - Storage/transport: 5 to 9 Hz: 3.5mm, 9 to 500Hz : 9.8 m/s2
Drop	ISTA-3A
Brightness	+/- 20% of normal (1200 nits)
Other	- IP20 - Noise Emission: <55 dB(A) according to EN ISO7779
Regulation	N/A
Certification	EMC - CE/FCC Safety

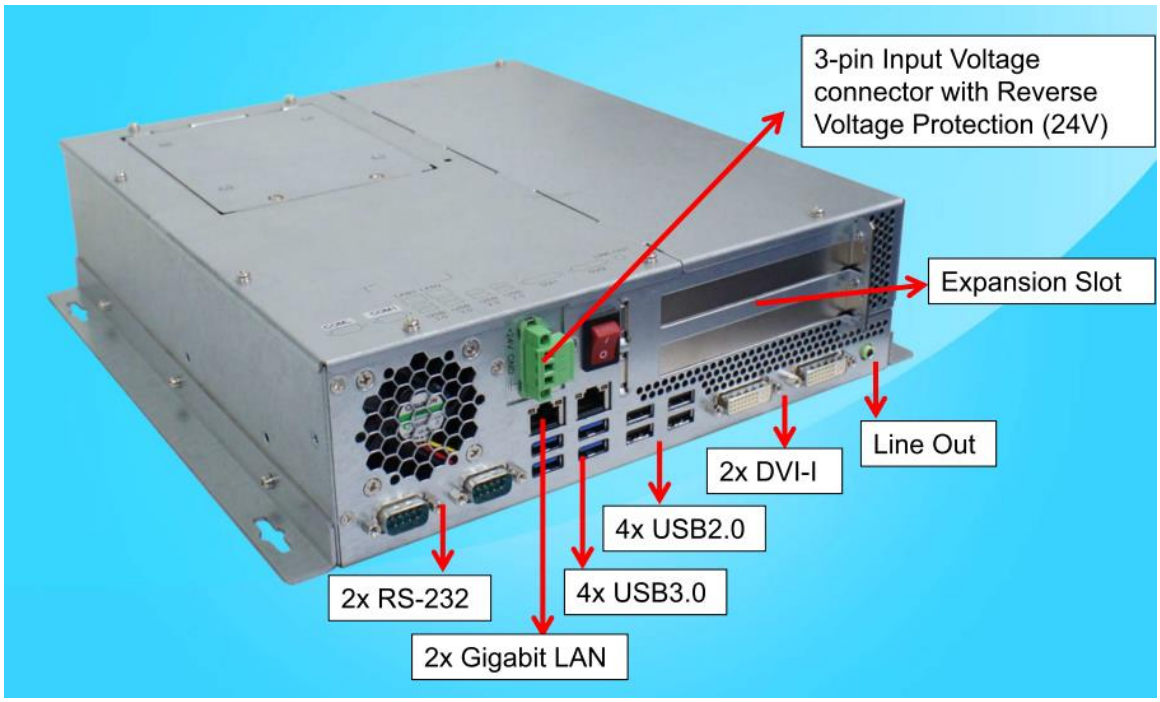
	- UL 60950-1 (AC input) - UL 508 (DC input)

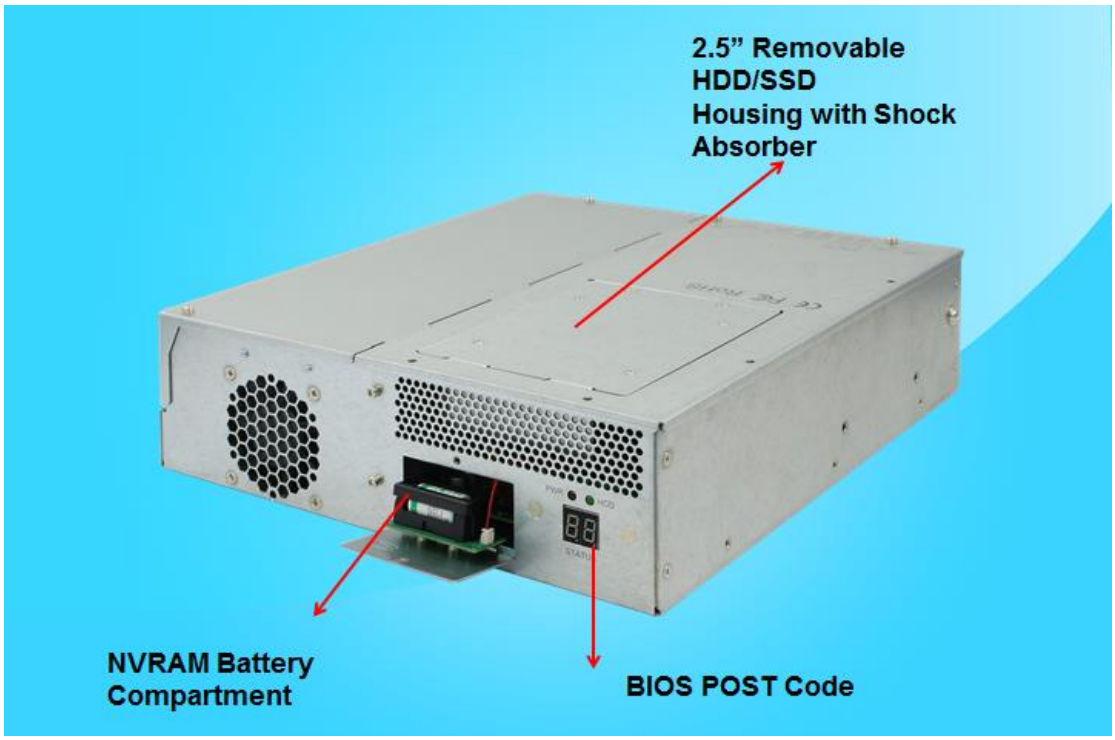
·This specification is subject to change without prior notice.

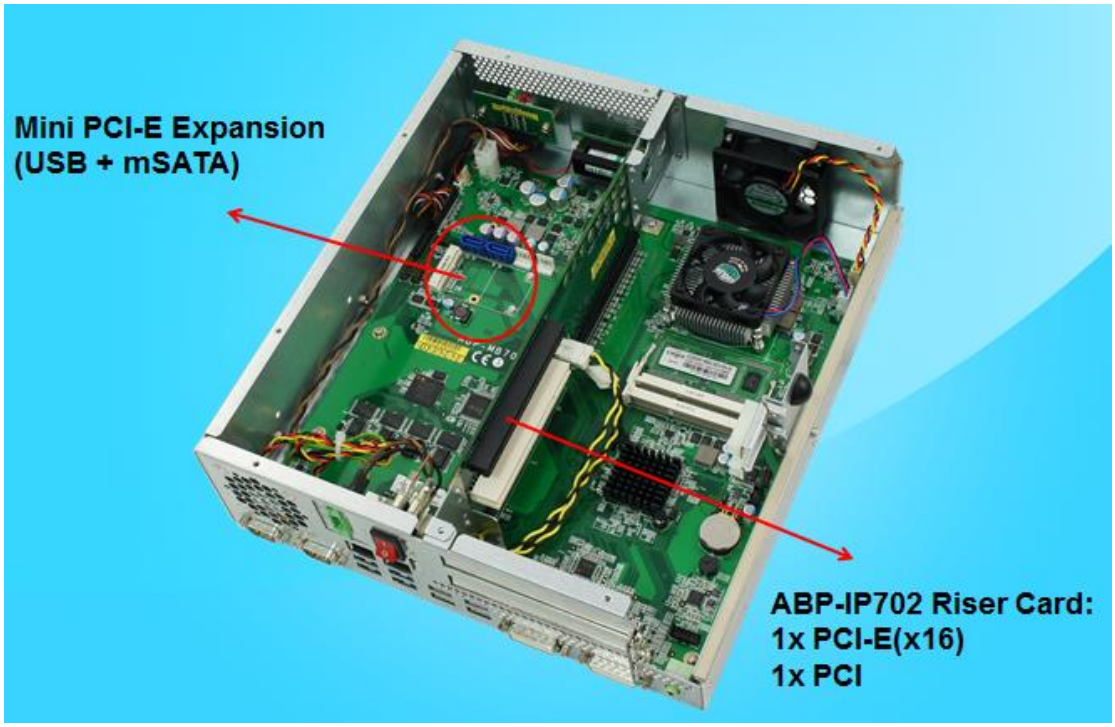
1.2.2 Dimensions

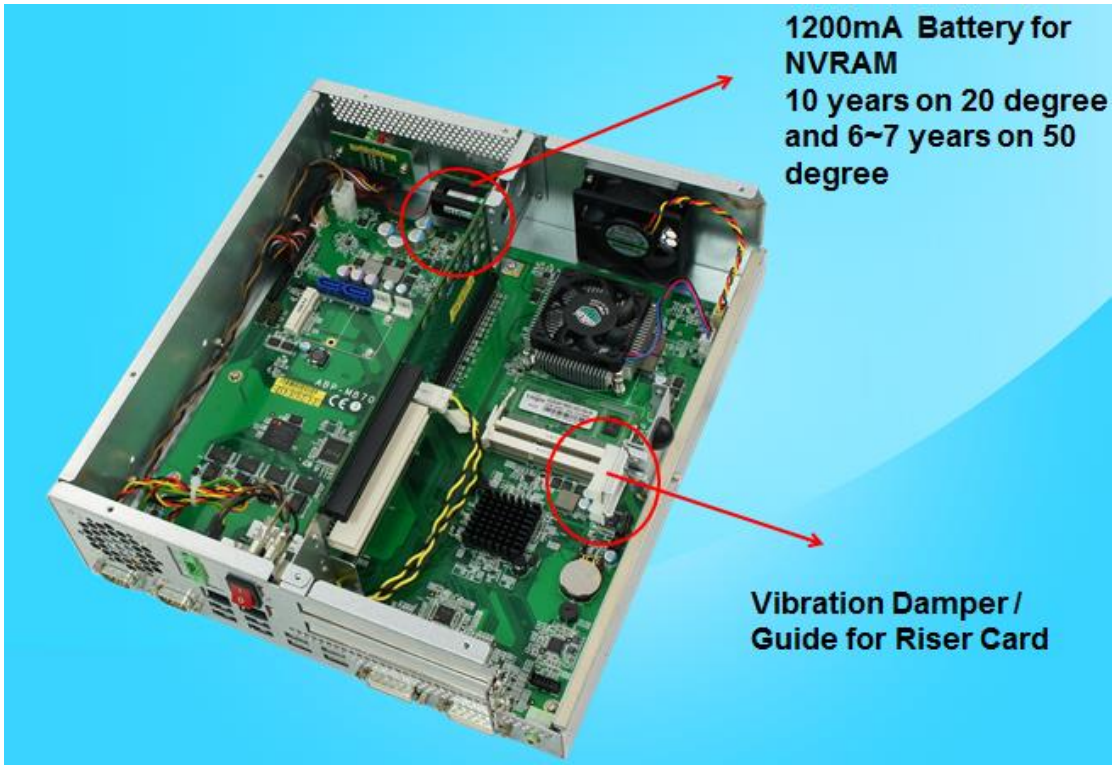


1.2.3 Product I/O view & Introduction of specify function

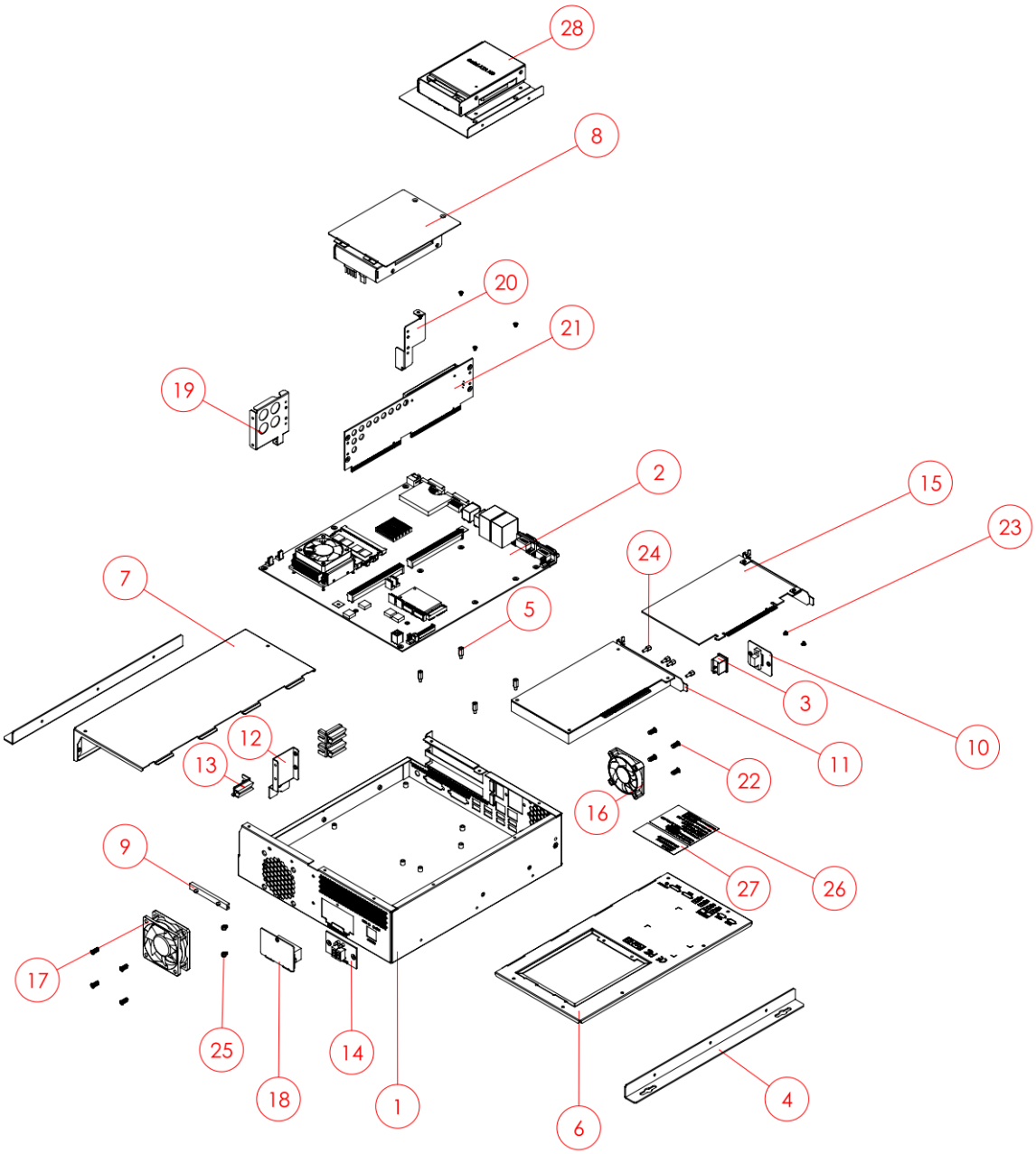





Mini PCI-E Expansion
(USB + mSATA)
ABP-IP702 Riser Card:
1x PCI-E(x16)
1x PCI


1200mA Battery for
NVRAM
10 years on 20 degree
and 6~7 years on 50
degree
Vibration Damper /
Guide for Riser Card

1.3 Exploded View of the AMS200 Assembly



1.3.1 Parts Description

Part No.	Description	Part No.	Description
1	AMS200_base	2	DIP PCBA, ABP-MB70
3	rocker sw_13.5x19_reset	4	AMS200_bracket
5	NUT-BT20	6	AMS200_cover brk
7	AMS200_pci cover brk	8	AMS200_HDD_asm

9	CG-6F	10	AMS200_DC-in_asm
11	PCI expansion card_asm	12	AMS200_side brk
13	AMS200_L_asm	14	ABP-ID45_asm
15	PCIe card_asm	16	SYS_FAN
17	SYS_FAN	18	AMS200_batt_asm
19	AMS200_pci brk2	20	AMS200_pci brk1
21	ABP-IP702_asm	22	SCREW-E2
23	SCREW-B30	24	NUTBOSS-S6
25	SCREW-B28A	26	AMS200 cover label
27	System label	28	AMS200_HDD2_asm

1.4 Packing List

Item No.	Description	Qty
1	Driver CD	1
2	User manual	1
3	Wall mount kit	2

1.4.1 Optional Items

Riser card Solution	Description	
ABP-IP701	1x PCI-e(x16) slot+ 1x PCI –e(x4) slot	
ABP-IP702	1x PCI-e(x16) slot + 1x PCI slot (Default)	
ABP-IP703	2x PCI slots	

CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Introduction

The ABP-MB70 is a customized board computer based on the Intel® 3rd Generation Core™ i7/i5/i3/Celeron processors.

The ABP-MB70 platform is wide temperature for low-power and high-performance designs in a broad range of markets including Industrial Control & Automation, Digital Signage, Thin Client, Electronic Gaming Machines, and SMB storage appliances.

ABP-MB70 Features:

- Supports Intel® 3rd Generation Core™ i7/i5/i3/Celeron processors
- Two DDR3 SO-DIMM, 1600 MHz, Max. 16GB memory
- Integrated graphics for two DVI-I ports
- 2 x SATA III connector
- 2x COM port connector
- 1 x Mini-PCIe(x1) slots
- Wide temperature operating supporting
- 1x 24V DC-IN power connector

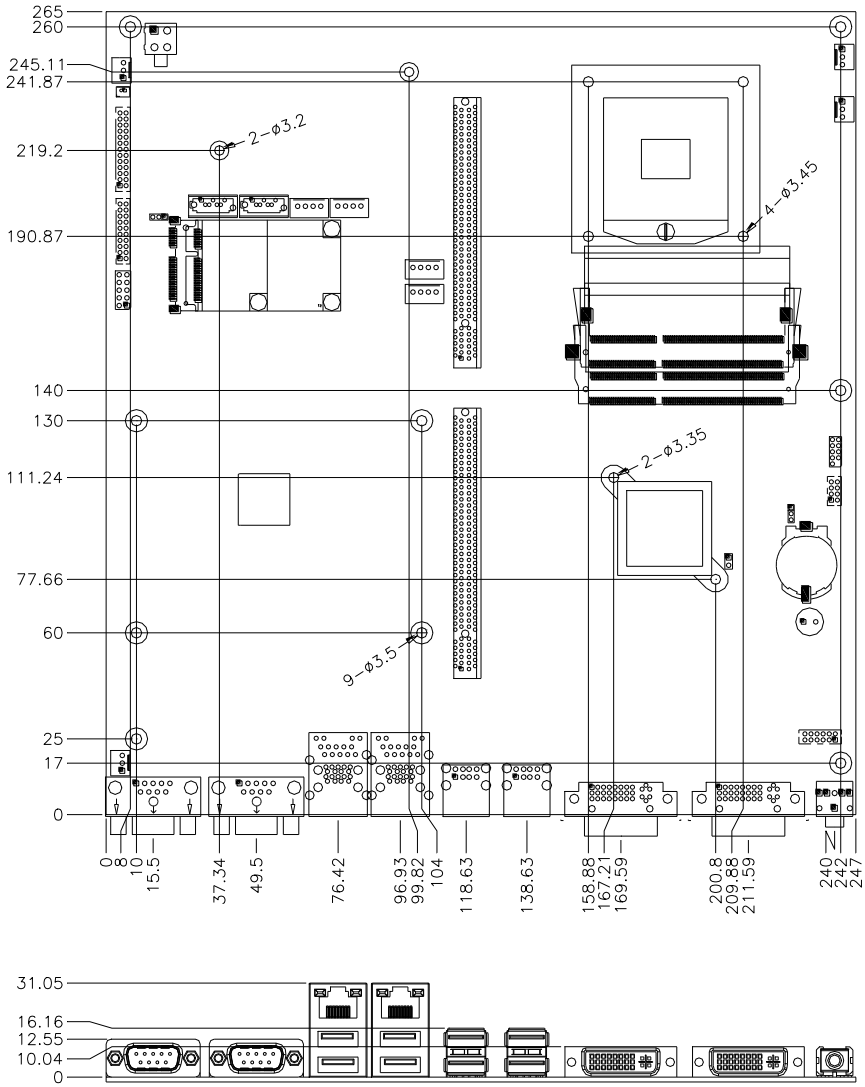
Specification – Mainboard	
Model	ABP-MB70
Form Factor	265 x 247mm
CPU	
Model	Intel® Ivy-Bridge mobile processors (22nm monolithic)
Speed	Up to 2.7GHz
Cache	Up to 8MB
Socket	rPGA 988B (Socket G2) , 37.5 mm x 37.5mm Passive CPU cooling, heat sink plus system fan.
TDP	QC = 45W/ DC = 35W
Chipset	
Model	Intel® Panther Point Mobile Platform Controller Hub (HM76 PCH) 25 x 27 mm package size
BIOS	
Model	AMI BIOS
Memory	
Configuration	Intel® Ivy-Bridge mobile processors integrated memory controller DDRIII 1067/1333/1600 MHz - SO-DIMM [204-pin Horizontal type stacking] x 2 (Non-ECC)

Max. Support	Max. 16GB
Onboard backup SRAM	Yes
Edge I/O	
Display	- Intel® Ivy-Bridge mobile processor integrated Gfx, supports 2 independent displays, Direct X 11, OpenGL 3.1, Open CL 1.1 ● First DVI-I X 1 (thru Level shifter ASM1442) Digital: display port B converted to DVI via ASM1442 Analog: inhere analog VGA signal from HM76 ● Second DVI-I x 1 Digital: display port C converted to DVI via ASM1442 Digital: display port D converted to DVI via IT6512FN
LAN / PHY	Two Gigabit Ethernet connections - 2x RJ45 + Dual USB 3.0 stack connectors Intel® Lewisville 82579VGbE PHY for 1st LAN Realtek RTL8111E PCI-e Gigabit LAN for 2rd LAN
Audio	Intel® HM76 PCH built-in High Definition Audio controller + Realtek ALC662 w/ 5.1 channels ● Audio jack: Line out x 1 DF11 2X6 pin header support Line-out, Line-in, Mic
USB	- USB 3.0 controller [Panther Point integrated], supports 4 ports ● 2x RJ45+USB3.0 edge connectors to support 4 ports in the front panel (Reference LAN section) - USB 2.0 controller [Panther Point integrated], support 12 ports ● 2x stacking USB2.0 edge connector, support 4 USB2.0 - mPCIe slot for mSTAT: use one USB2.0 signal
LPC I / O	- COM1 (RS232/422/485), ● COM1 RS422/485 Auto Flow control ● RS-232/422/485 on COM1 selectable in BIOS - COM2 (RS232) - COM1&2 edge connector + COM3&4 (RS232) onboard header - Super I/O: Fintek F81866AD-I

Internal I/O	
USB	- USB 2.0 controller [Panther Point integrated], supports 12 ports, ● Box header: 2x4 DF11 header x2 to support 4 ports USB 2.0
Serial ATA	Intel® HM76 PCH built-in SATA controller, supports total 2 ports - 2 x SATA (3.0) 6Gbps - 2 x Headers of power output for floppy, 4-pin
LPC I / O	- COM3, COM4 (RS232) ● Connector: DF11 2x10 pin header to support 2 ports RS232
Expansion Slot	- The riser card of ABP-IP702 with two golden fingers for 2 slots - The riser card of ABP-IP703 with two golden fingers for 3 slots - The riser card of ABP-IP705 with two golden fingers for 5 slots
System FAN	60mm x 60mm DC Fan x1 for CPU (on rear chassis) + 50mm x 50mm DC Fan x 1 for PSU (on front Side) + CPU fan x 1. - Connector: 3-pin DC fan connector
Other	- LPC 80 port Via ABP-ID45 ● Connector type: 2x13 DF11 pin headerfor **ABP-ID45** (2x7-Seg + power LED + HDD LED) - Digital I/O: 4 in & 4 out ● Connector type: 2x5 pin-header - Mini PCI-Express x 1 port [Full-sized] w/mSATA +USB 2.0 support
Add-On Feature	
Watchdog	Yes (256 segments, 0, 1, 2…255 sec/min)
H/W Monitor	Yes, Hardware Monitor (2 thermal inputs, 4 voltage monitor inputs & 3 Fan headers) [SYS FAN "CPU" & SYS FAN "HDD" (DC Fan type, 3-pin connector)]
iSMART	No
Other	Removable plate accommodating 1/2AA battery holder
Dimension	
PCB Dimension	- 265 x 247 (mm) - 10.43 x 9.72 (inch)
Power	
Power	- DC-IN 24V ● With Reverse,OVP, UVP, UVLO protection ● Delay on for 2 seconds when main power is switched on ● Maximum DC power wattage: 320W ➢ Connector: ATX 4-pin 2x2 connector x1 for DC power - Power consumption: ● 2x 12V, 8A

	● 1x 5V, 10A ● 1x 3.3V, 10A
Environmental	
Temperature	Operating: 0°C~60°C Storage: -20°C~70°C (-4°F~158°F)
Humidity	5%~90% (non-condensing)
Shock	In operation 50 m/s2, 30 ms Storage/transport 250 m/s2, 6 ms
Vibration	In operation: 10 to 58Hz: 0.075mm, 58 to 500Hz: 9.8 m/s2 Storage/transport: 5 to 9 Hz: 3.5mm, 9 to 500Hz: 9.8 m/s2
Certification	RoHS
Other	- OS: XPP, XPe, Win7 Pro, Windows Embedded Standard - Uses Solid Capacitors

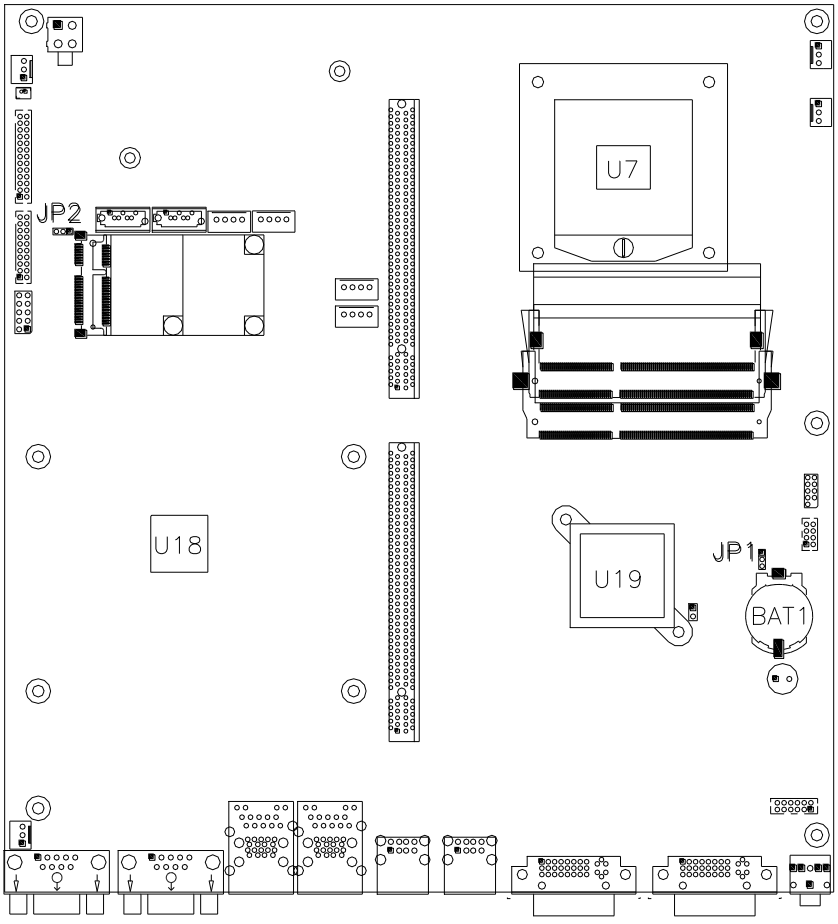
2.2 Board Dimensions



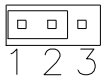
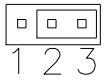
2.3 Setting the Jumpers

Jumpers are used on ABP-MB70 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 ABP-MB70 and their respective functions.

2.4 Jumper Locations on ABP-MB70



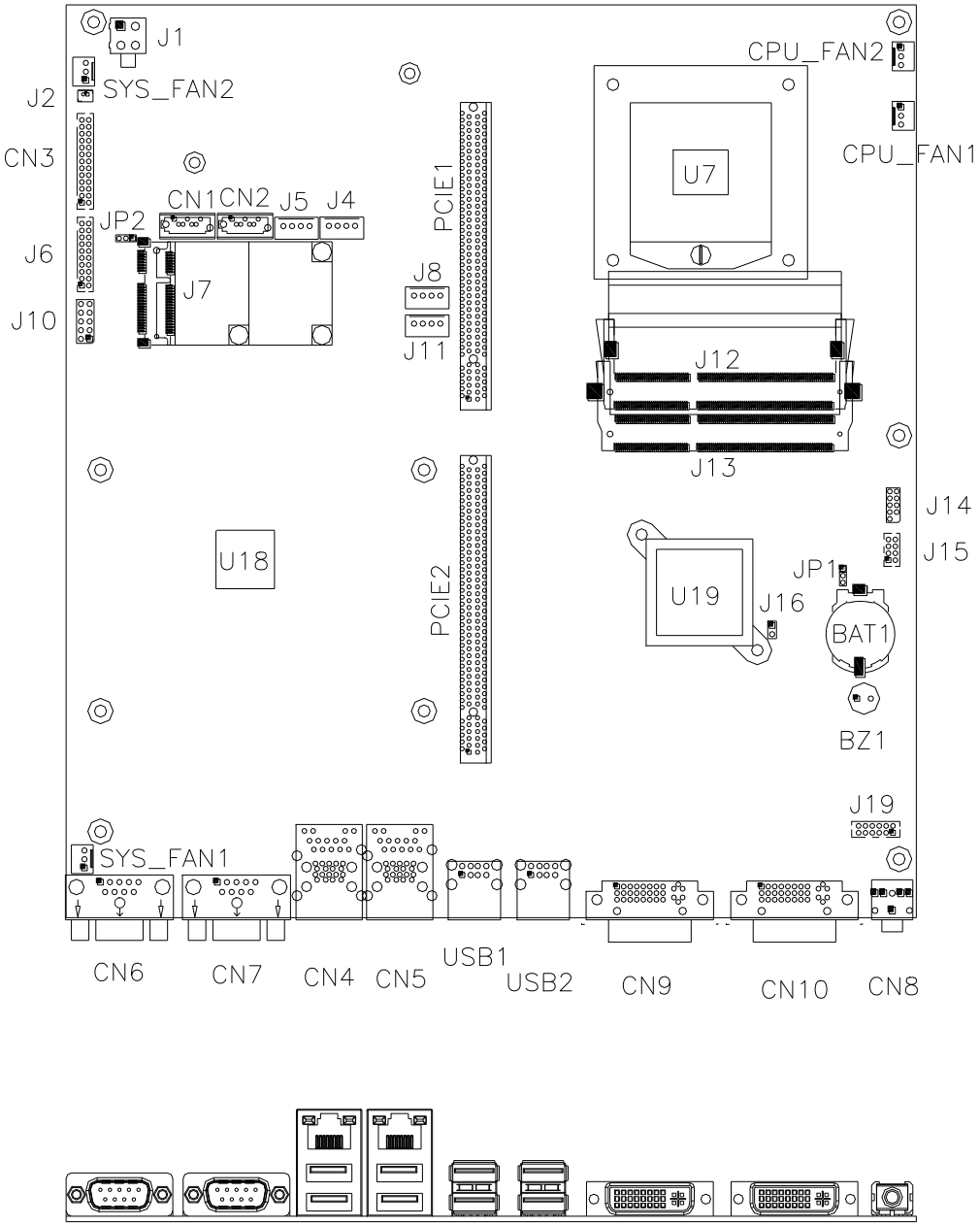
JP1: Clear CMOS Contents

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

JP2: ATX or AT Power Selection

JP2	Setting	Function
	Pin 1-2 Short/Closed	ATX Mode
	Pin 2-3 Short/Closed	AT Mode

Connector Locations on ABP-MB70



CN1, CN22: SATA3 Connector

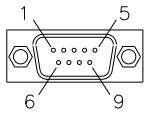
CN3: Interface to ABP-ID45

This connects to ABP-ID45 two seven-segment on daughter card BIOS need to support POST codes IBASE standard

CN4: Gigabit LAN (82579V) + USB3 0/1, USB2 0/1 port

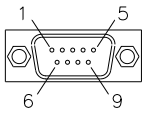
CN5: Gigabit LAN (RTL8111E) + USB3 2/3, USB2 2/3 port

CN6: COM2 Serial Ports



Signal Name	Pin #	Pin #	Signal Name
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5	10	Not Used

CN7: COM1 Serial Ports

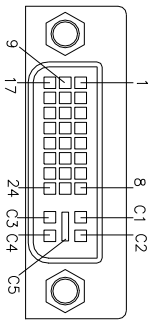


Pin #	Signal Name		
	RS-232	R2-422	RS-485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
10	NC	NC	NC

CN8: Line-out Phone-Jack Connector

CN9, CN10: DVI-I Connector

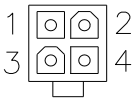
DVI-I



Signal Name	Pin #	Pin #	Signal Name
DATA 2-	1	16	HOT POWER
DATA 2+	2	17	DATA 0-
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
CRT_VSYNC	8	23	CLOCK -
DATA 1-	9	24	CLOCK +
DATA 1+	10	C1	CRT_R
SHIELD 1/3	11	C2	CRT_G
DATA 3-	12	C3	CRT_B
DATA 3+	13	C4	CRT_HSYNC
DDC POWER	14	C5	A GROUND2
A GROUND 1	15	C6	A GROUND3

USB1, USB2: USB2 8/9/10/11 port

J1: +24V Power Connector



Pin #	Signal Name
1	Ground
2	Ground
3	+24V
4	+24V

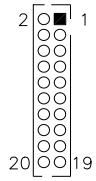
J2: Battery 1/2AA Connector

Pin #	Signal Name
1	BAT
2	Ground

J4, J5: HDD Power Connector

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

J6: COM3, COM4 Serial Port (DF11 Connector)



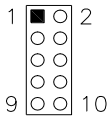
Signal Name	Pin #	Pin #	Signal Name
DSR1 Data set ready	2	1	DCD1 Data carrier detect
RTS1 Request to send	4	3	RXD1 Receive data
CTS1 Clear to send	6	5	TXD1 Transmit data
RI1 Ringing indicator	8	7	DTR1 Data terminal ready
Not used	10	9	Ground
DSR2	12	11	DCD2
RTS2	14	13	RXD2
CTS2	16	15	TXD2
RI2	18	17	DTR2
Not used	20	19	Ground

J7: Mini-PCIE Connector and mSATA/share

J8, 11: PCI Power Connector

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

J10: Digital I/O Connector (4 in, 4 out)



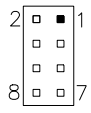
Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	+5V
Out3	3	4	Out1
Out2	5	6	Out0
IN3	7	8	IN1
IN2	9	10	IN0

J12: DDR SO-DIMM Channel A

J13: DDR SO-DIMM Channel B

J14: SPI Flash Connector (factory use only)

J15: USB2 4/5 Port Connector (DF11 Connector)

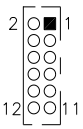


Signal Name	Pin #	Pin #	Signal Name
Ground	2	1	Vcc
D8+	4	3	D7-
D8-	6	5	D7+
Vcc	8	7	Ground

J16: Flash Descriptor Security Override (Factory use only)

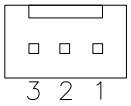
Setting	Flash Descriptor Security Override
Open	Disabled (Default)
Close	Enabled

J19: Audio Connector (DF11 Connector)



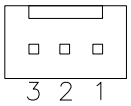
Signal Name	Pin #	Pin #	Signal Name
LINEOUT_R	2	1	LINEOUT_L
Ground	4	3	JD_FRONT
LINEIN_R	6	5	LINEIN
Ground	8	7	JD_LINEIN
MIC-In	10	9	MIC_L
Ground	12	11	JD_MIC1

CPU_FAN1: CPU Fan Power Connector



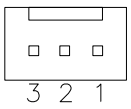
Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

CPU_FAN2: System Fan Power Connector



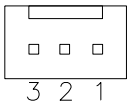
Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

SYS_FAN1: System Fan Power Connector



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

SYS_FAN2: System Fan Power Connector



Pin #	Signal Name
1	Ground
2	+12V
3	NC

PCIE1: PCIEx16 Slot

(Including PCI-E(x16) signal)

PCIE2: PCIEx16 Slot

(Including PCI-E(x4) & PCI signals)

CHAPTER 3 BIOS SETUP

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

BIOS Introduction

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

BIOS Setup

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

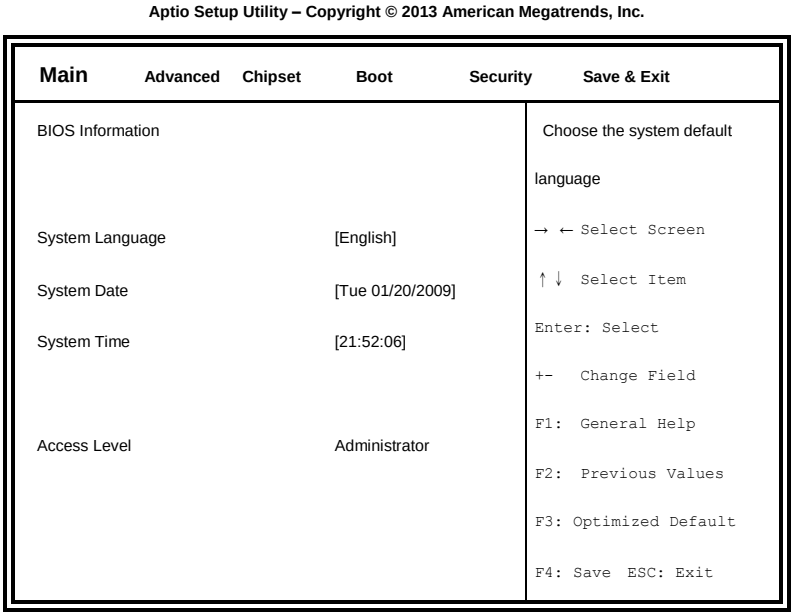
```
Press  <DEL> or <F2> to  Enter  Setup
```

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

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

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

Main Settings



System Language

Choose the system default language.

System Date

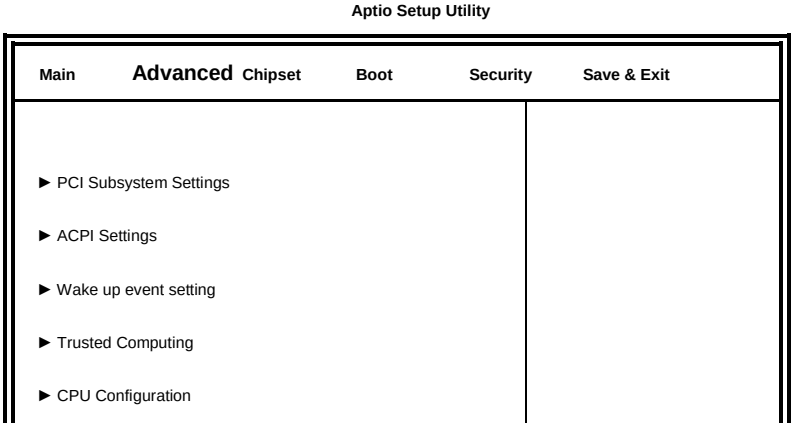
Set the Date. Use Tab to switch between Data elements.

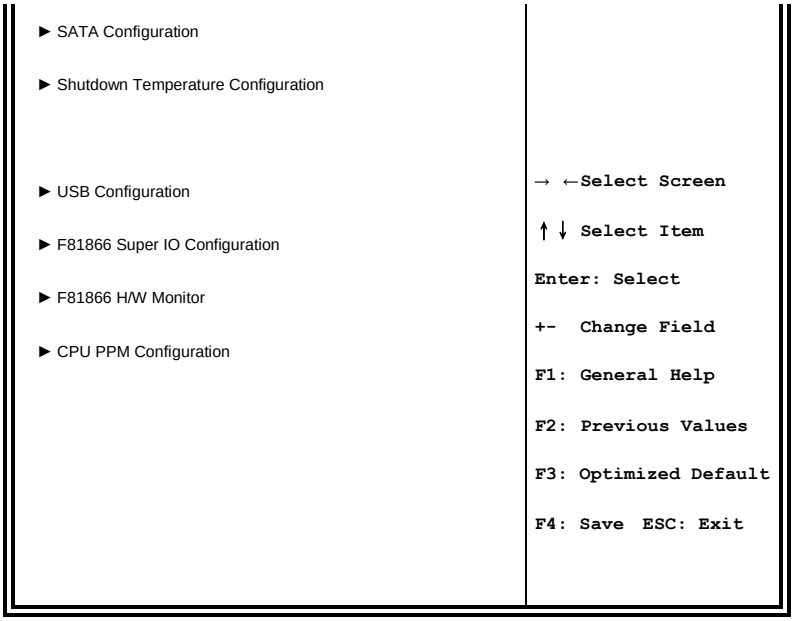
System Time

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

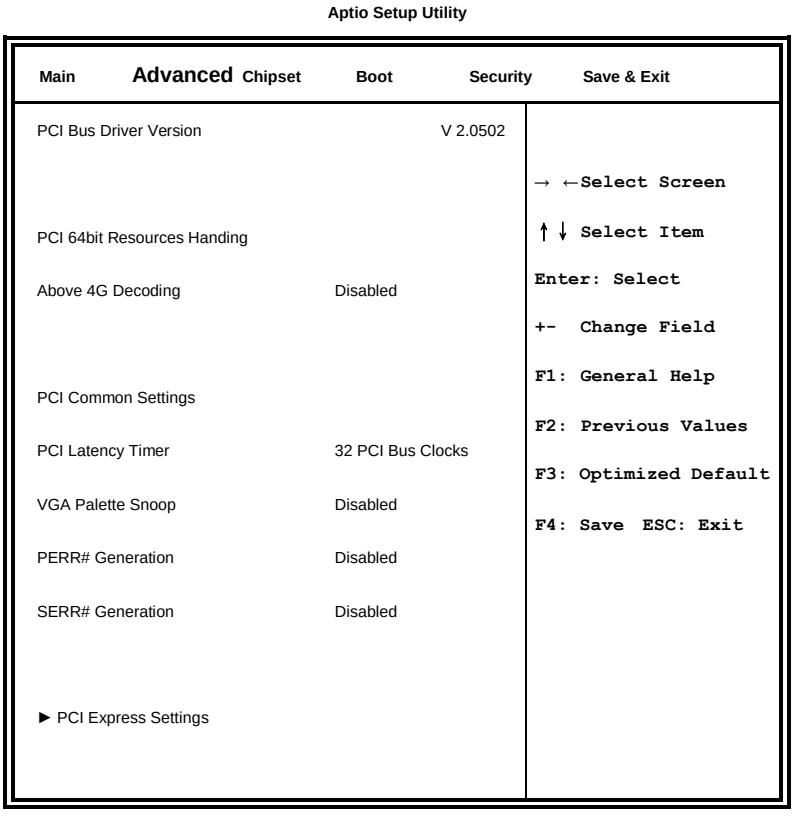
Advanced Settings

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





PCI Subsystem Settings



Above 4G Decoding

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

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or disables VGA Palette Registers Snooping.

PERR# Generation

Enables or disables PCI device to generate PERR#.

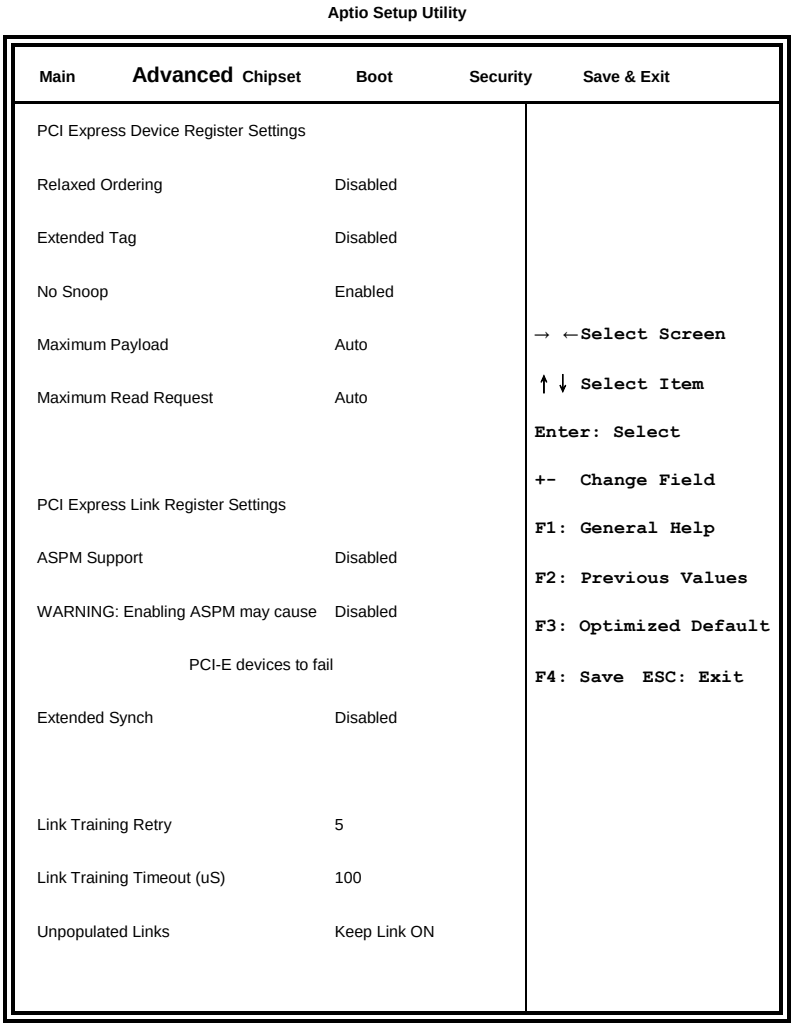
SERR# Generation

Enables or disables PCI device to generate SERR#.

PCI Express Settings

Change PCI Express devices settings.

PCI Express Settings



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.

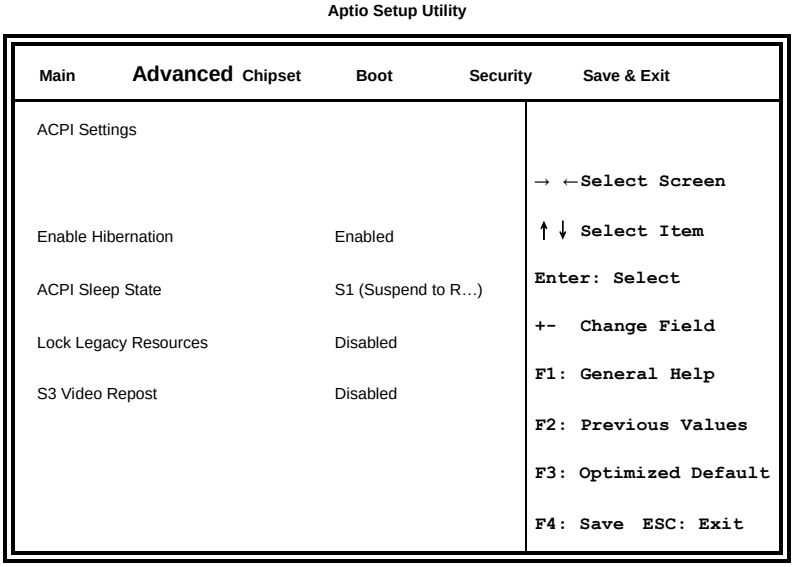
Link Training Timeout (uS)

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



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.

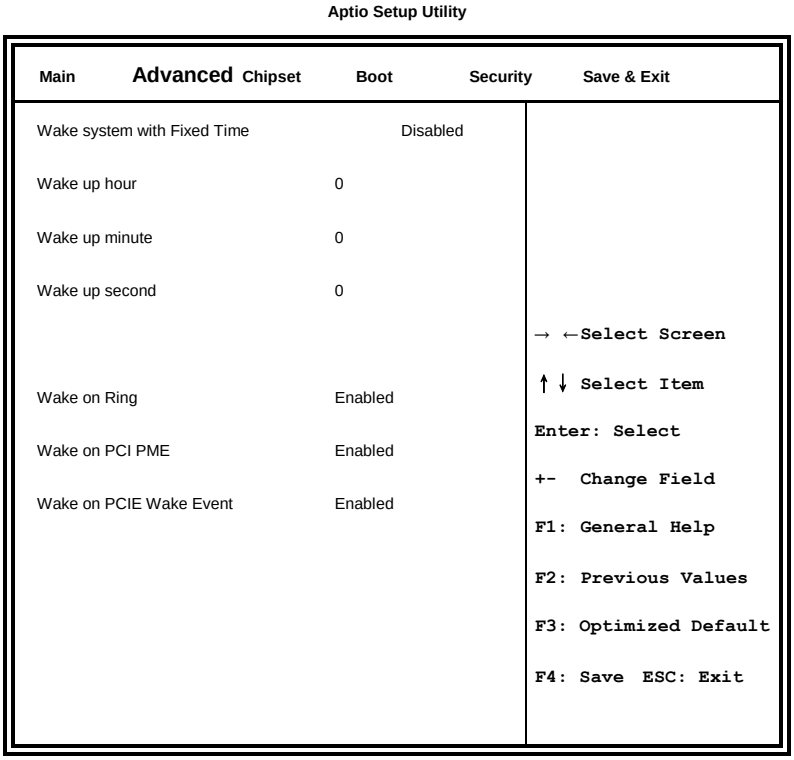
Lock Legacy Resources

Enabled or Disabled Lock of Legacy Resources.

S3 Video Repost

Enable or disable S3 Video Repost.

Wake up event settings



Wake system with Fixed Time

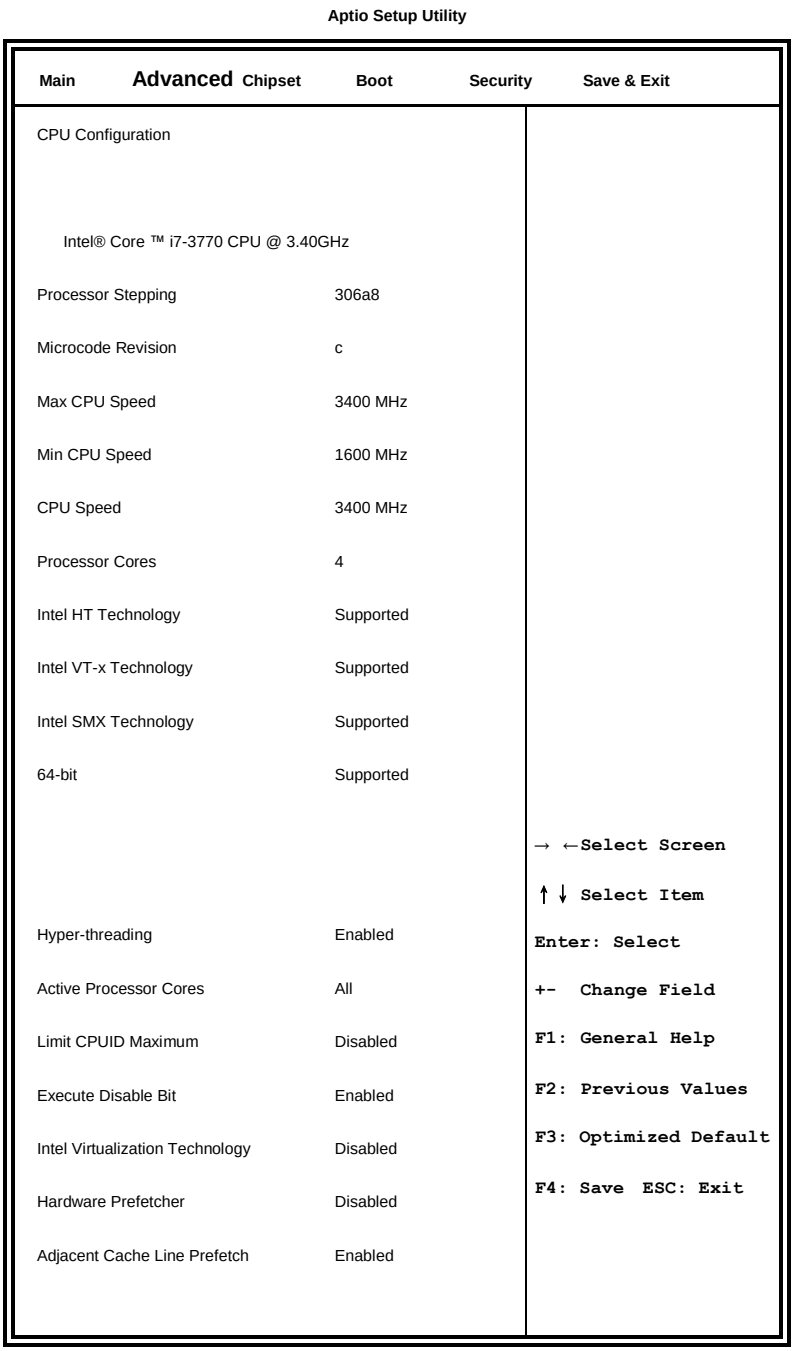
Enables or Disables System wake on alarm event. When enabled, System will wake on the hr::min:: sec specified.

Wake on PCIE PME Wake Event

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.



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, Re33dHat Enterprise 3 Update 3.)

Intel Virtualization Technology

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

Hardware Prefetcher

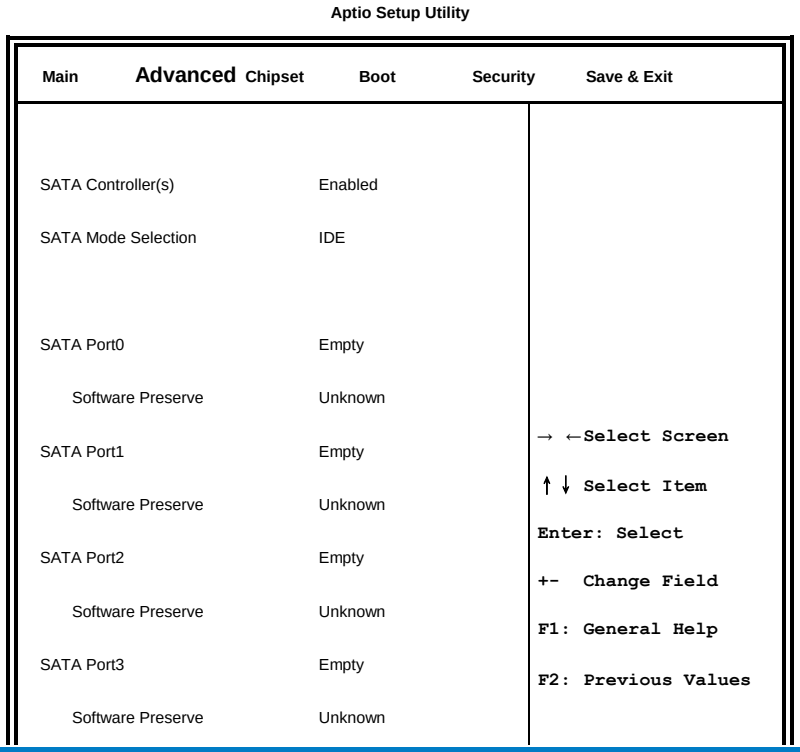
To turn on/off the Mid level Cache (L2) streamer Prefetcher.

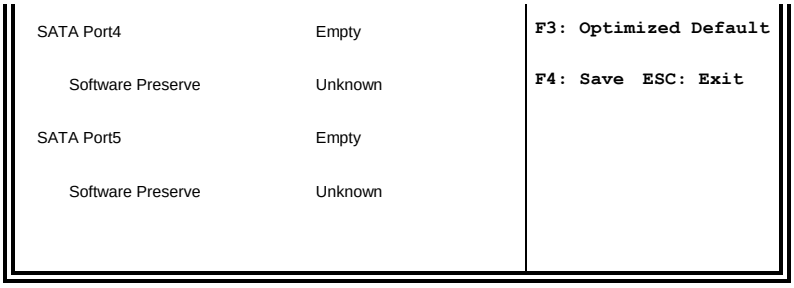
Adjacent Cache Line Prefetch

To turn on/off prefetching of adjacent cache lines.

SATA Configuration

SATA Devices Configuration.





SATA Controller(s)

Enable / Disable Serial ATA Controller.

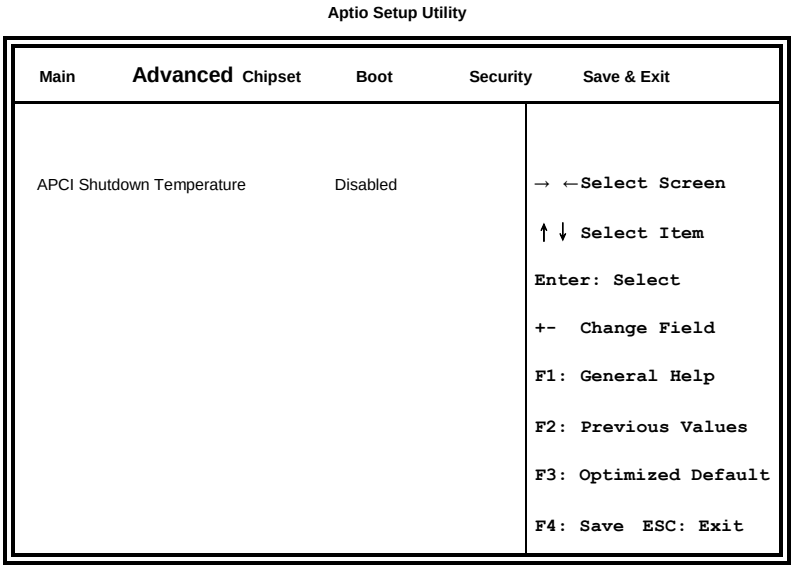
SATA Mode Selection

(1) IDE Mode.

(2) AHCI Mode.

(3) RAID Mode.

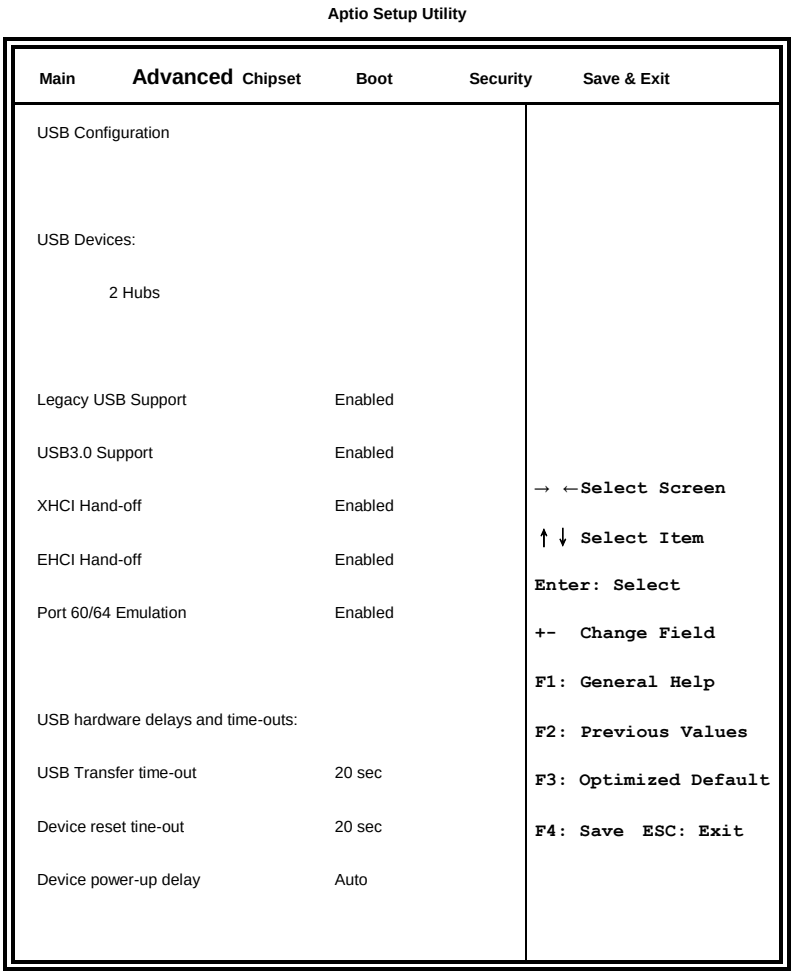
Shutdown Temperature Configuration



ACPI Shutdown Temperature

The default setting is Disabled.

USB Configuration



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.

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.

Port 64/60 Emulation

Enables I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.

USB Transfer time-out

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

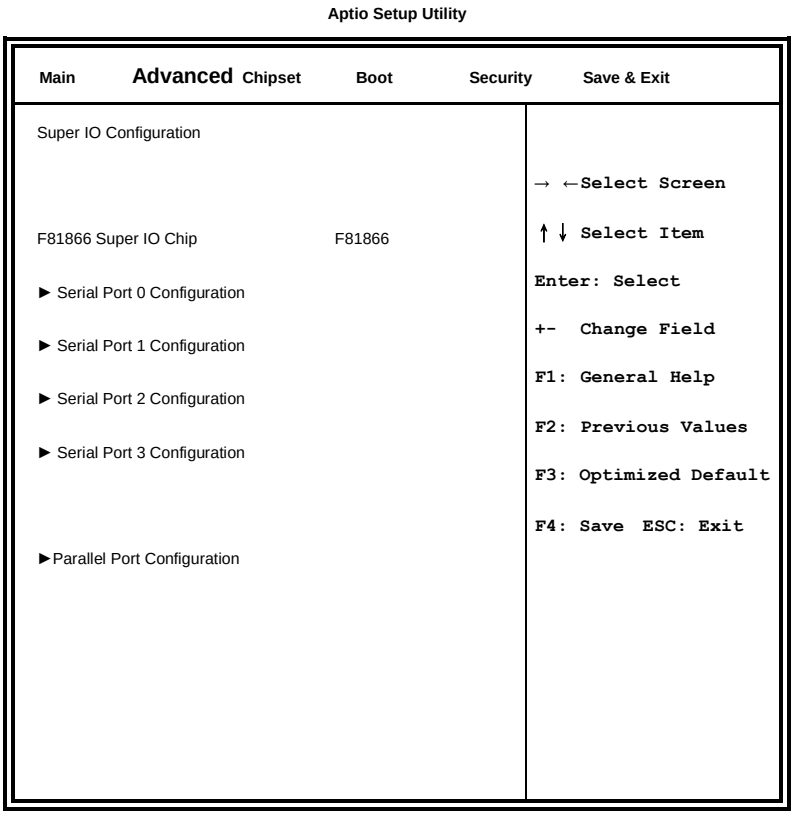
Device reset tine-out

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



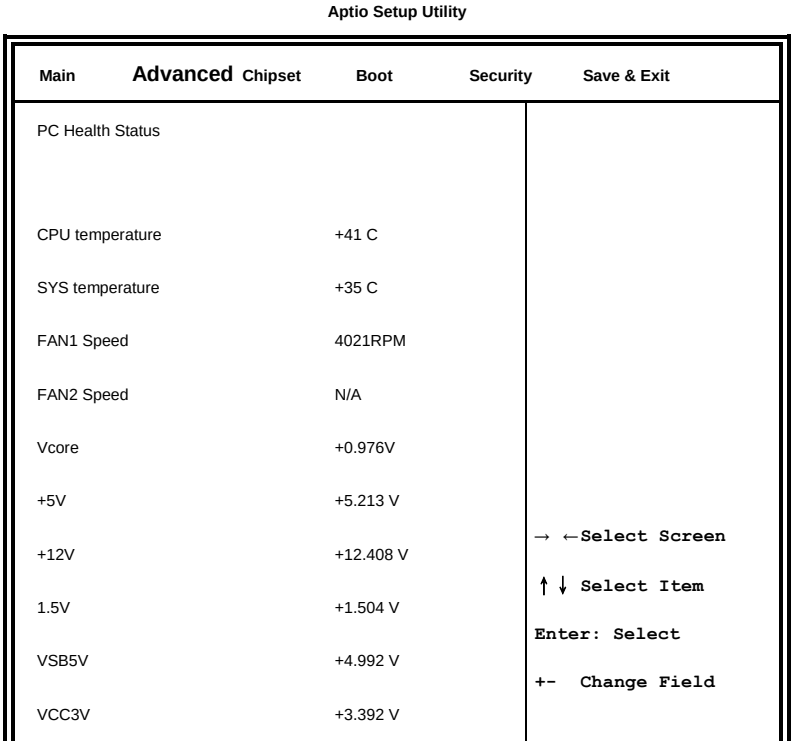
Serial Port Configuration

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

Parallel Port Configuration

Set Parameters of Parallel Port(LPT/LPTE)

F81866 H/W Monitor



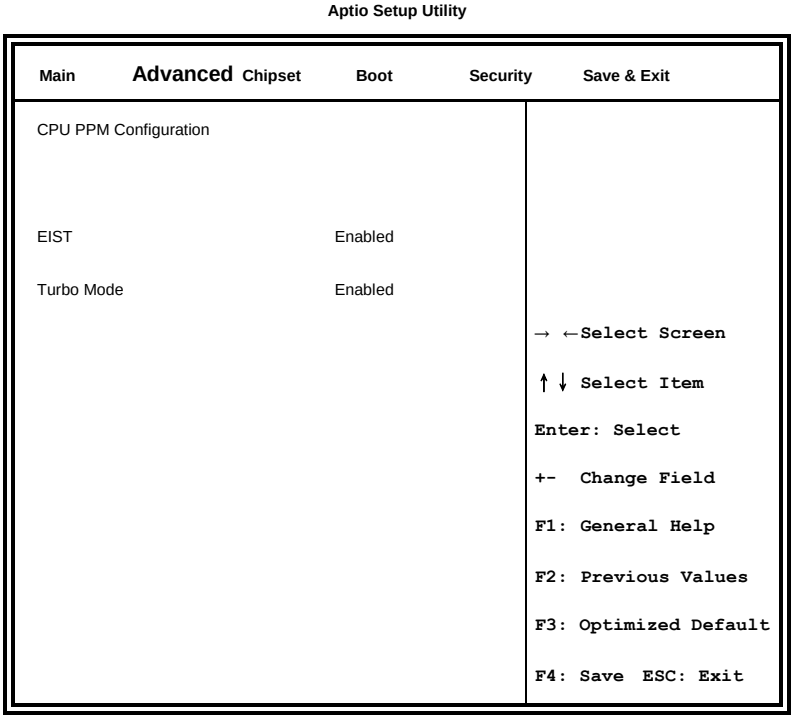
Temperatures/Voltages

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

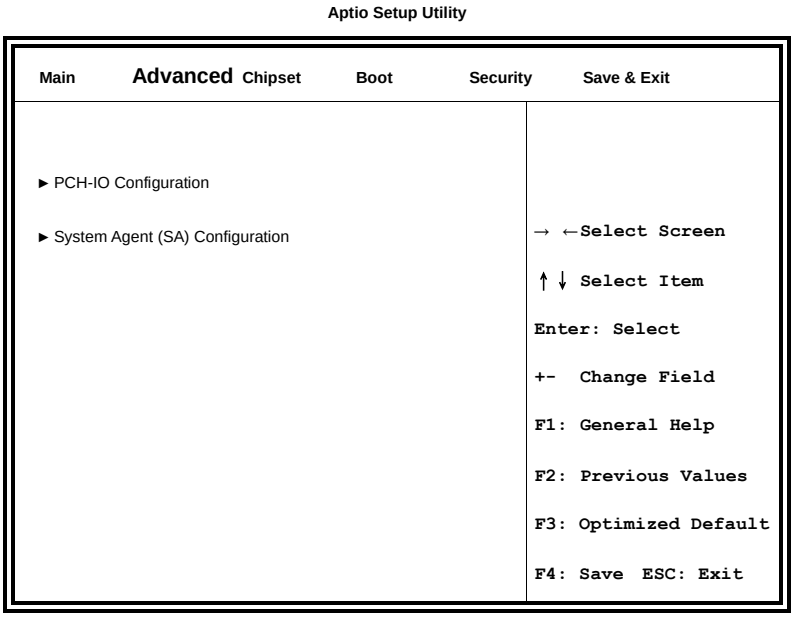


EIST

Enable/Disable Intel SpeedStep.

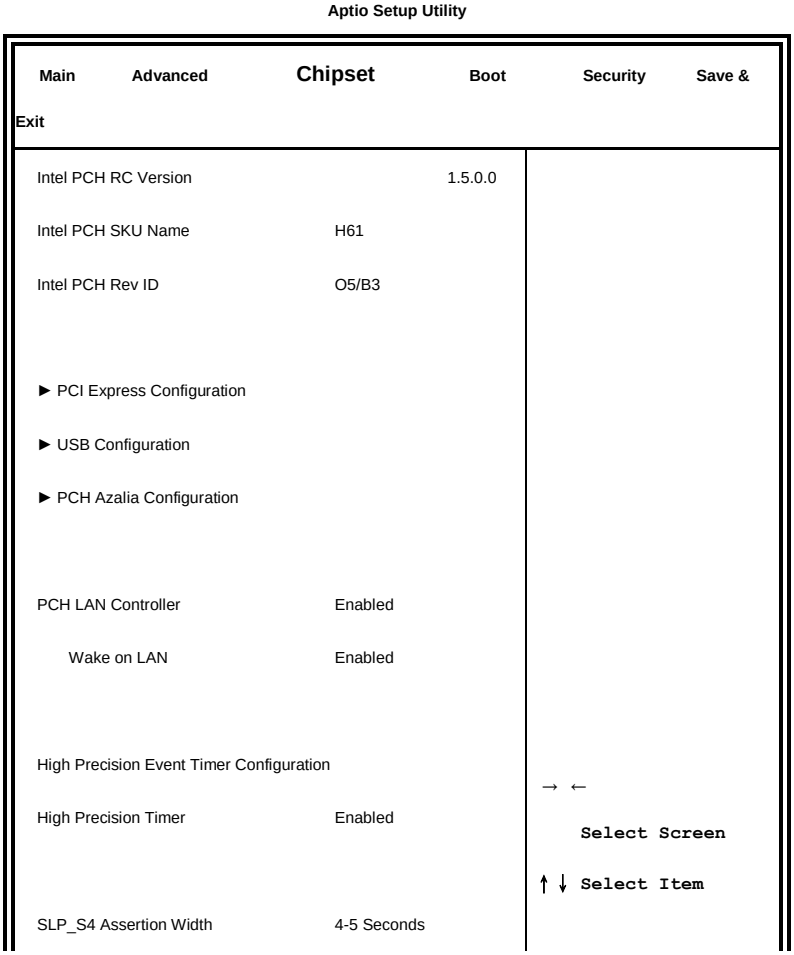
Chipset Settings

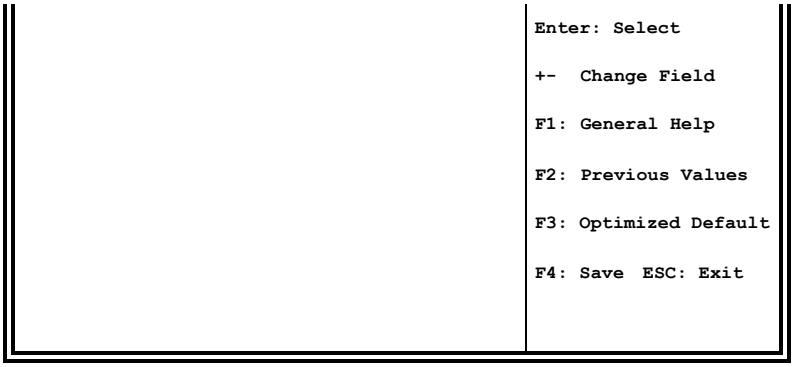
This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



PCH-IO Configuration

This section allows you to configure the North Bridge Chipset.





PCH LAN Controller

Enable or disable onboard NIC.

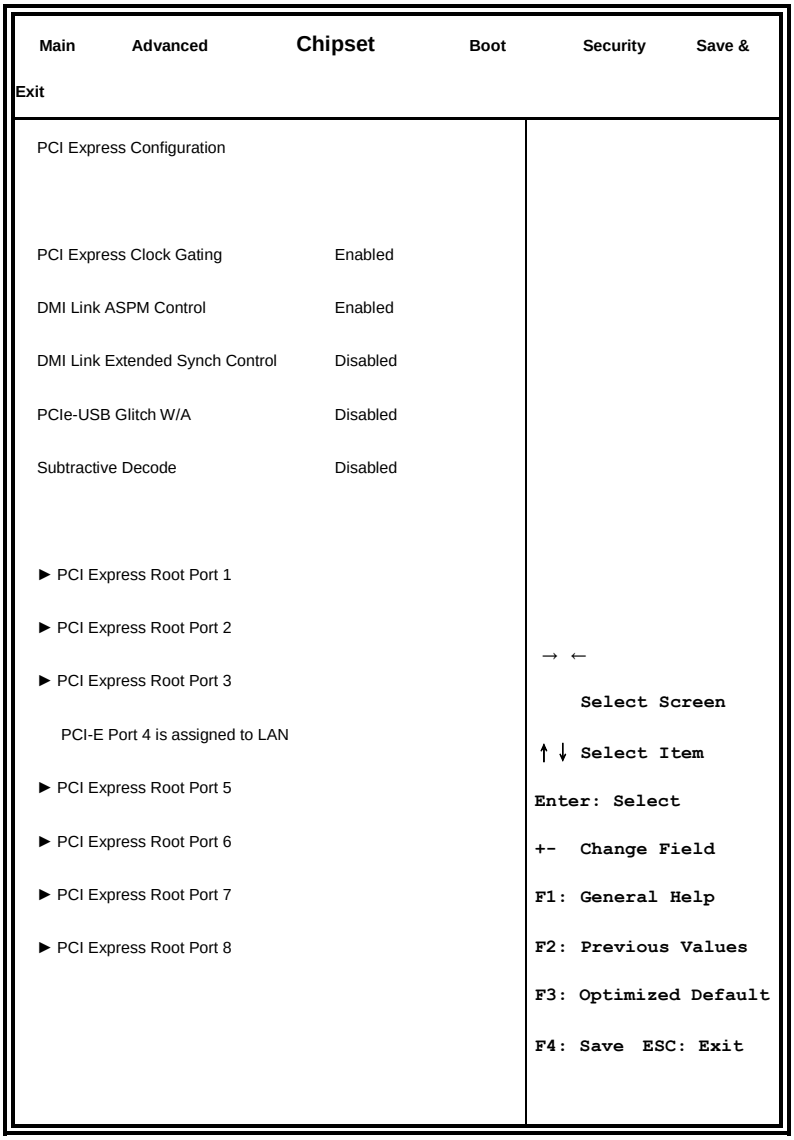
Wake on LAN

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

SLP_S4 Assertion Width

Select a minimum assertion width of the SLP_S4# signal.

PCI Express Configuration



PCI Express Clock Gating

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

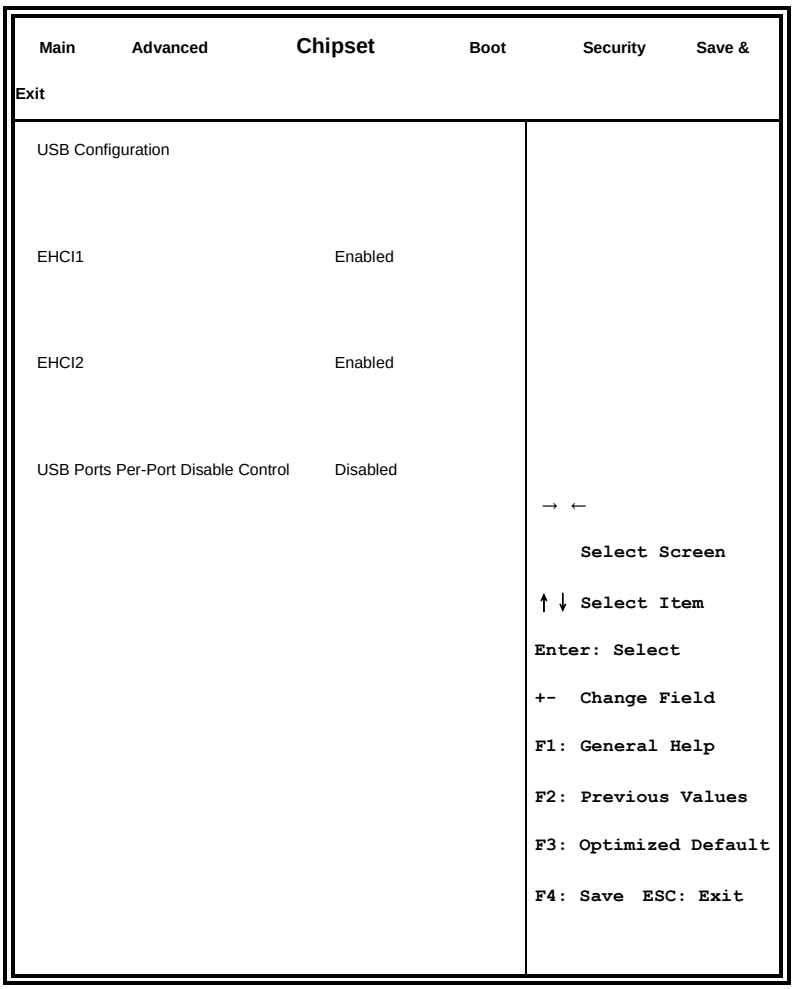
DMI Link ASPM Control

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



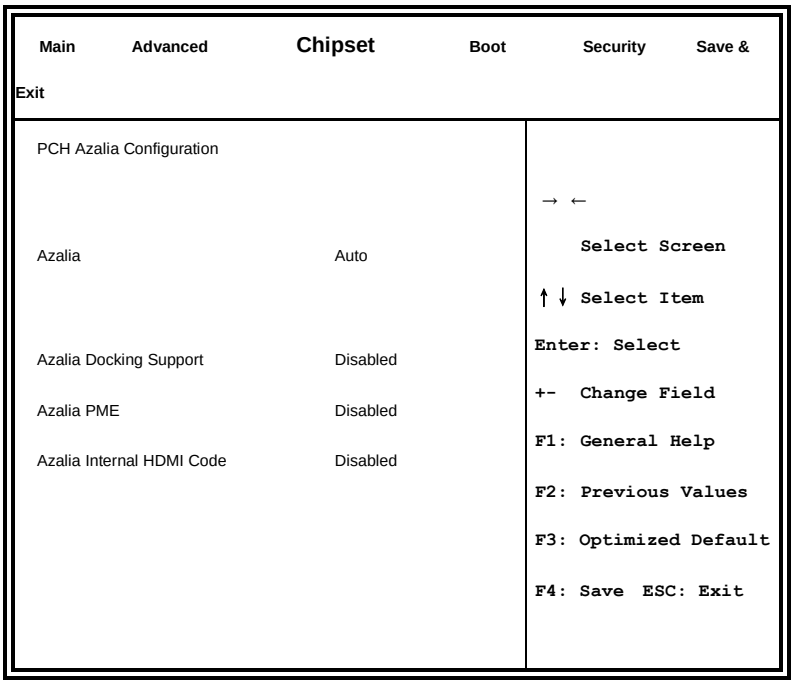
EHCI1/2

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



Azalia

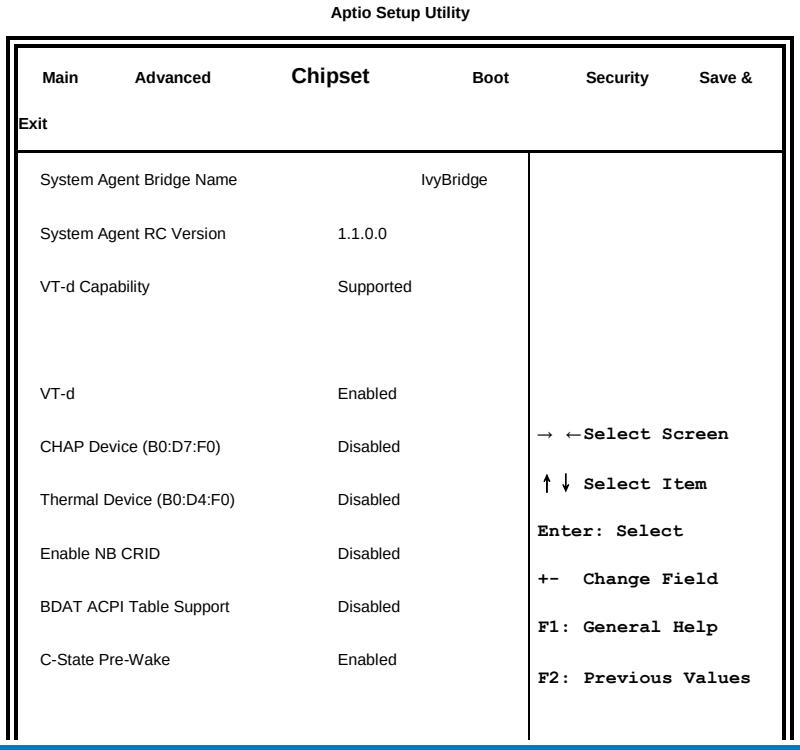
Control Detection of the Azalia device.

Disabled = Azalia will unconditionally disabled.

Enabled Azalia will be unconditionally enabled.

Auto = Azalia will enabled if present, disabled otherwise.

System Agent (SA) Configuration



VT-d

Check to enable VT-d function on MCH.

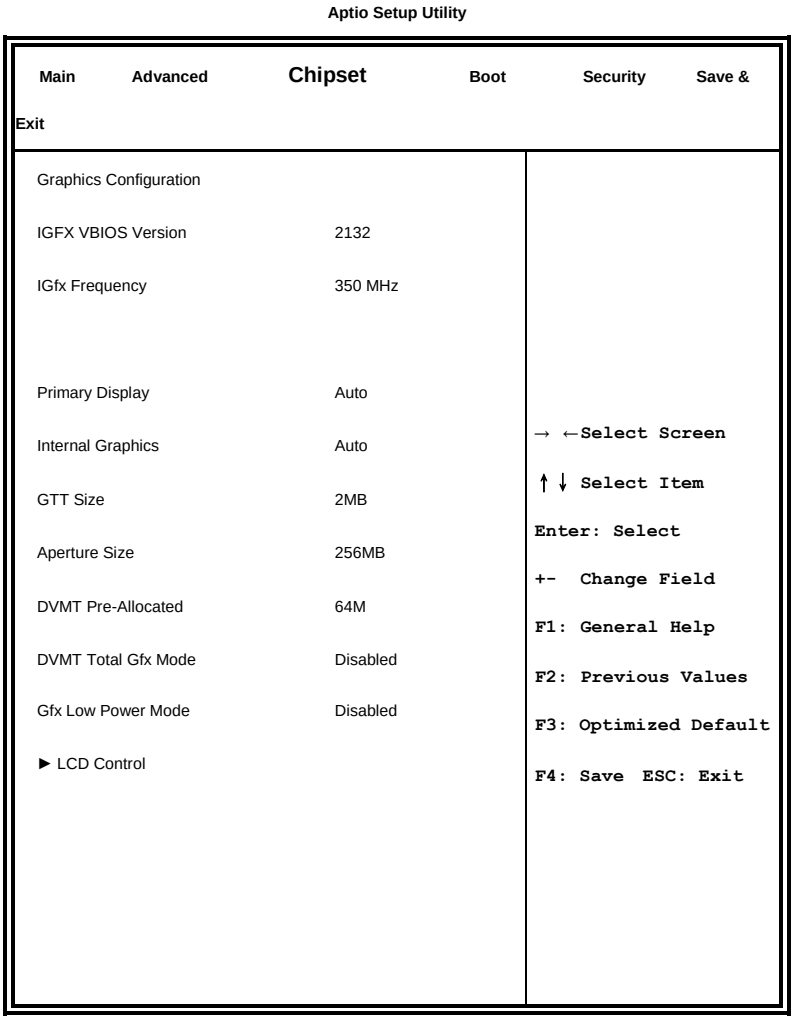
Enable NB CRID

Enable or disable NB CRID WorkAround.

C-State Pre-Wake

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

Graphics Configuration



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.

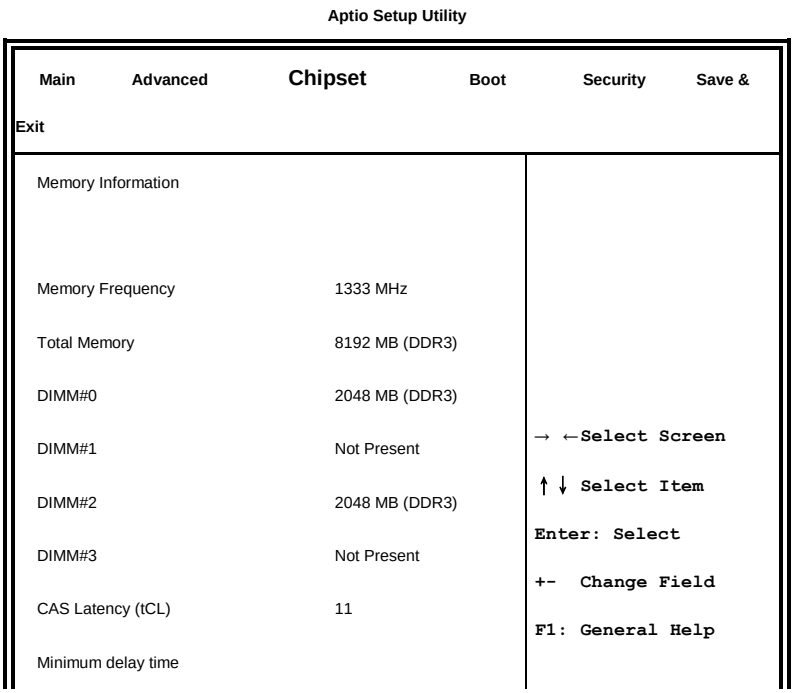
Gfx Low Power Mode

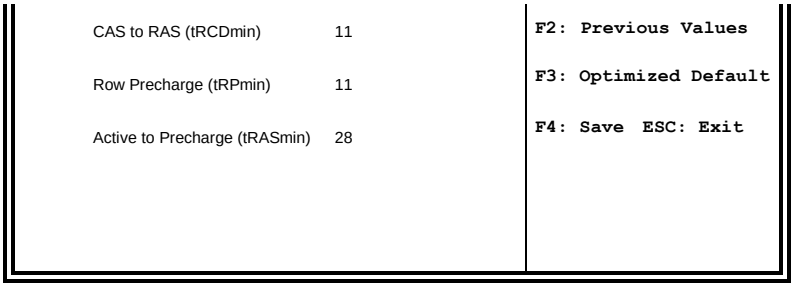
This option is applicable for SFF only.

Primary IGFX Boot Display (LCD Control)

Select the Video Device that will be activated during POST. This has no effect if external graphics present. Secondary booty display selection will appear based on your selection. VGA modes will be supported only on primary display.

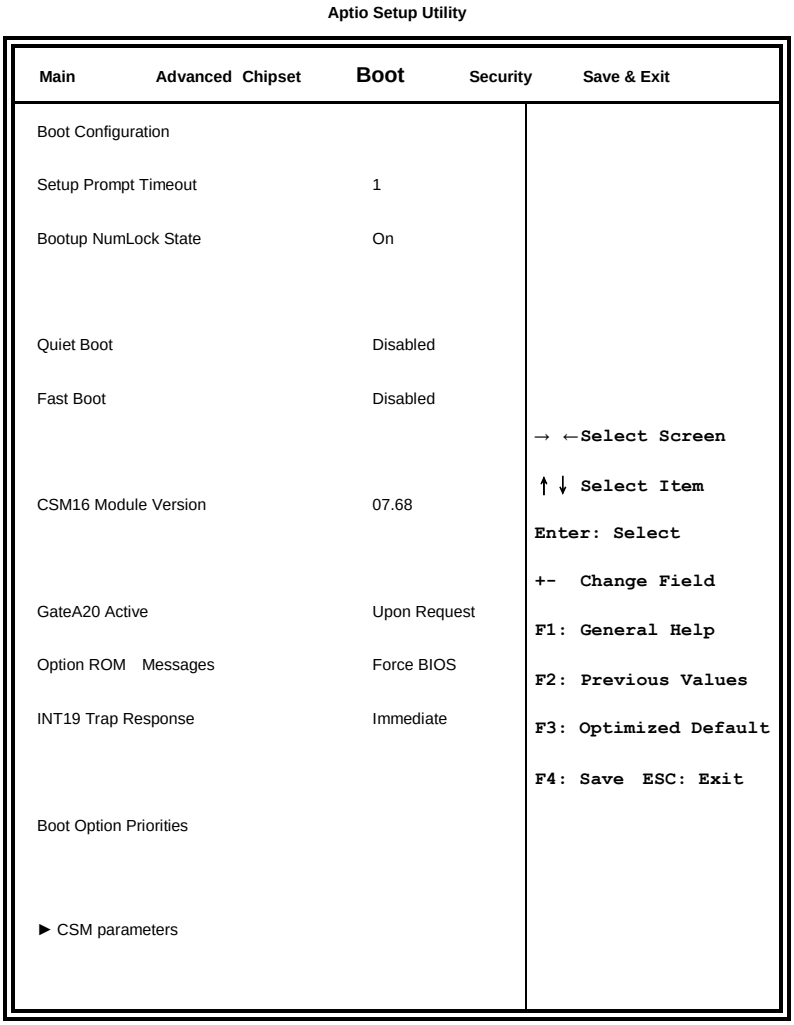
Memory Configuration





Boot Settings

This section allows you to configure the boot settings.



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

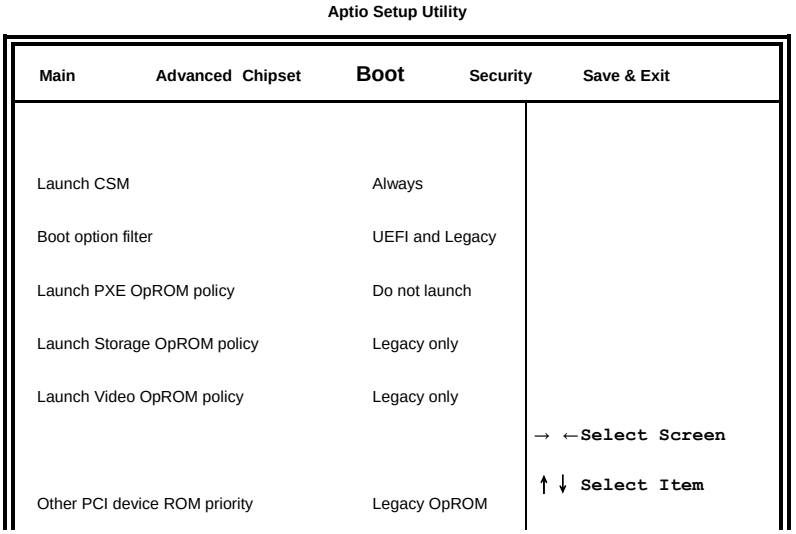
Enable: Allows Option ROMs to trap Int 19.

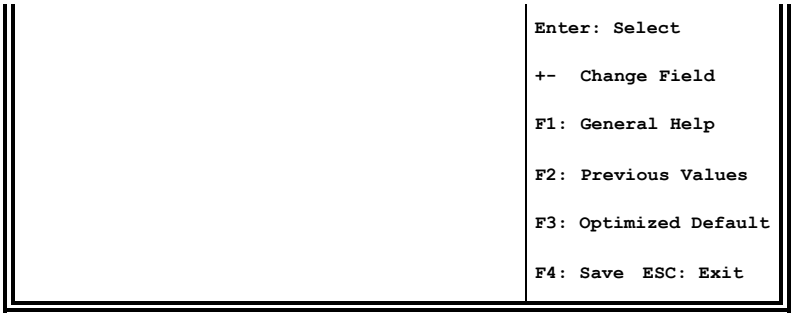
Boot Option Priorities

Sets the system boot order.

CSM parameters

This section allows you to configure the boot settings.





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

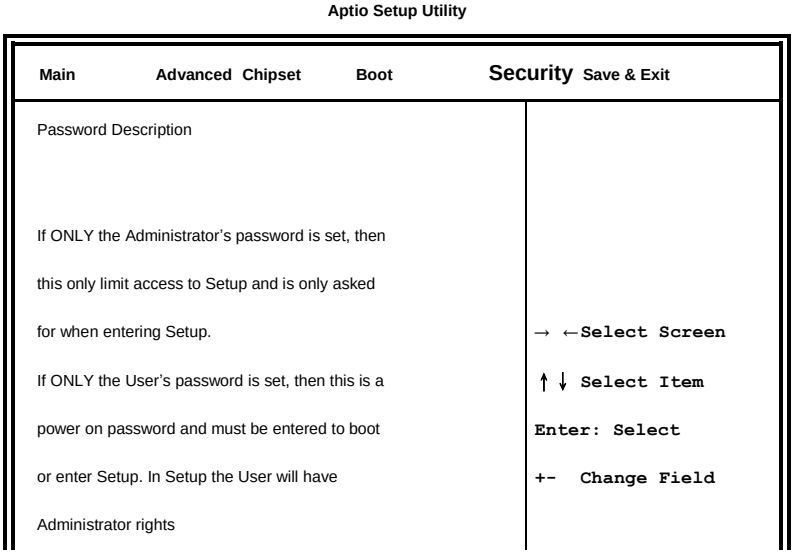
Controls the execution of UEFI and Legacy Video OpROM.

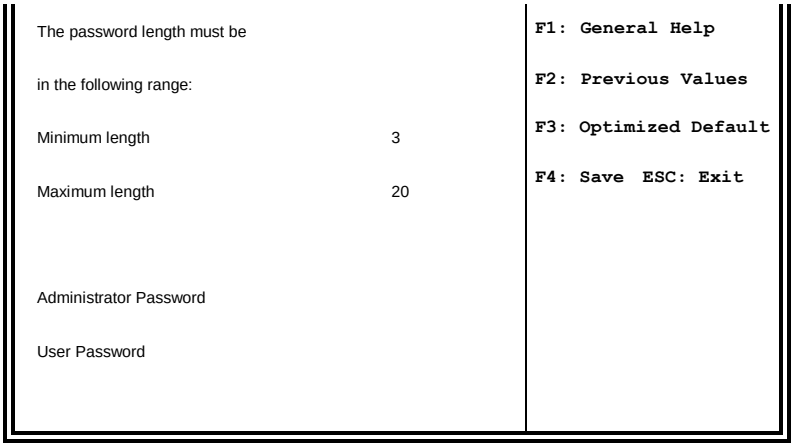
Other PCI device ROM priority

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.





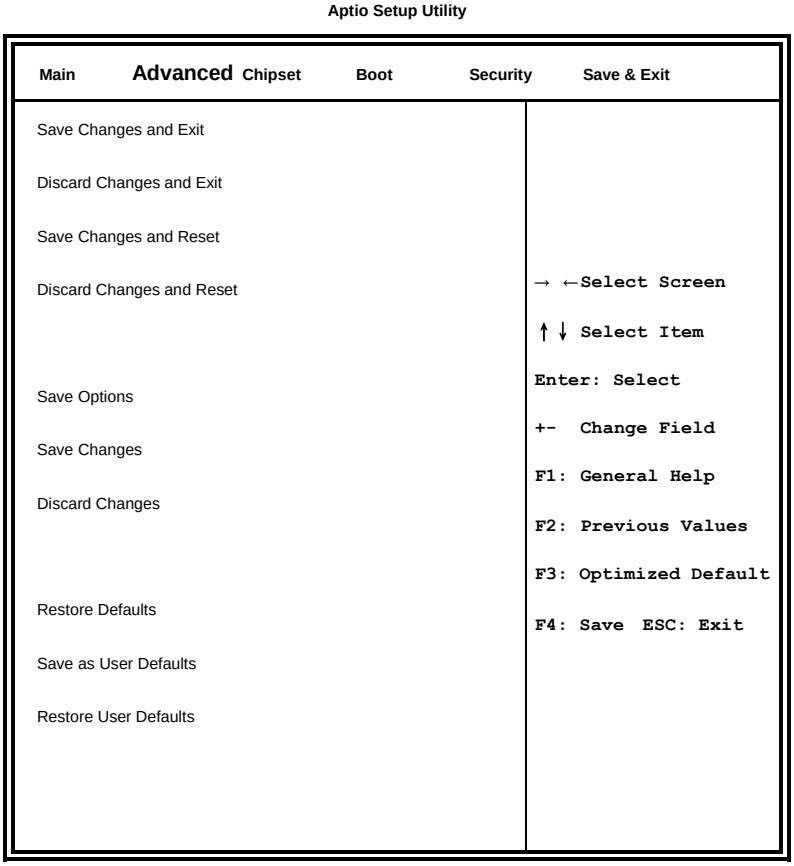
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings



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 4 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.

4.1 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.

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.

4.2 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***.

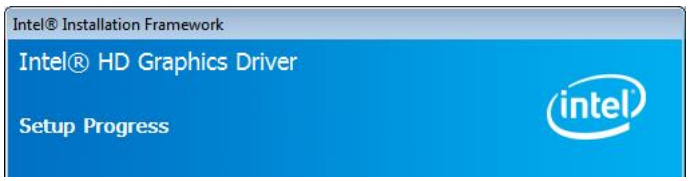
2. Click ***Intel(R) Q77 Chipset Family Graphics Driver.***

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

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

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.

4.3 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.

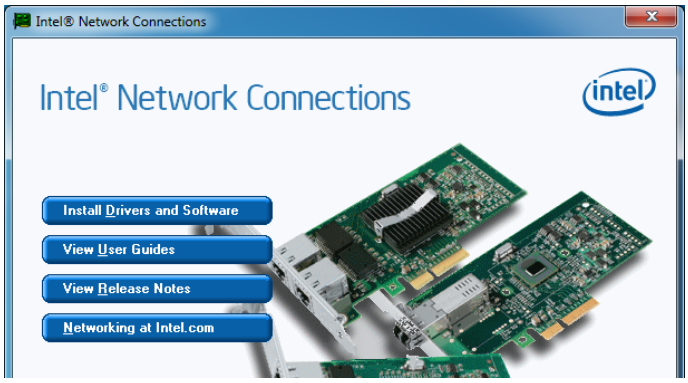
4. The InstallShield Wizard Complete. Click ***Finish*** to restart the computer and for changes to take effect.

4.4 LAN Drivers Installation

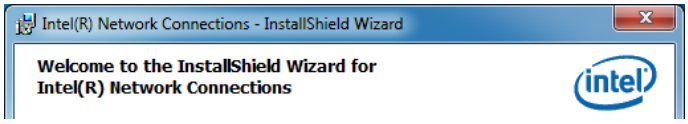
1. Insert the CD that comes with the board. Click ***Intel*** and then ***Intel(R) Q7 Series Chipset Drivers***.

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

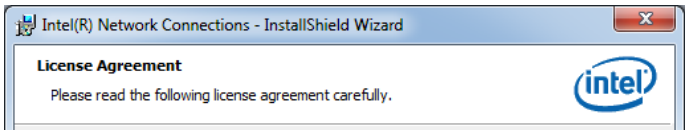
3. Click ***Install Drivers and Software.***



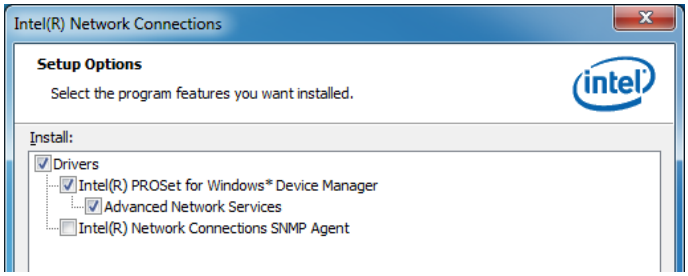
4. When the Welcome screen appears, click ***Next***.



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



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



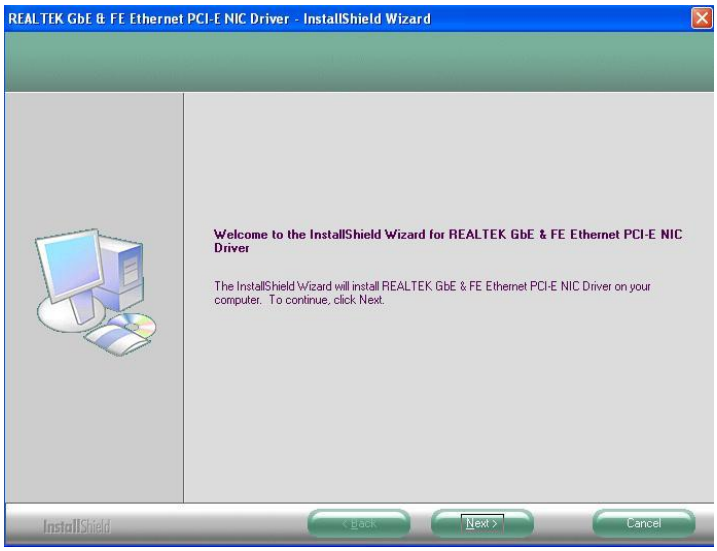
4.5 Realtek LAN Controller Drivers Installation

Follow the steps below to install the Realtek LAN Drivers.

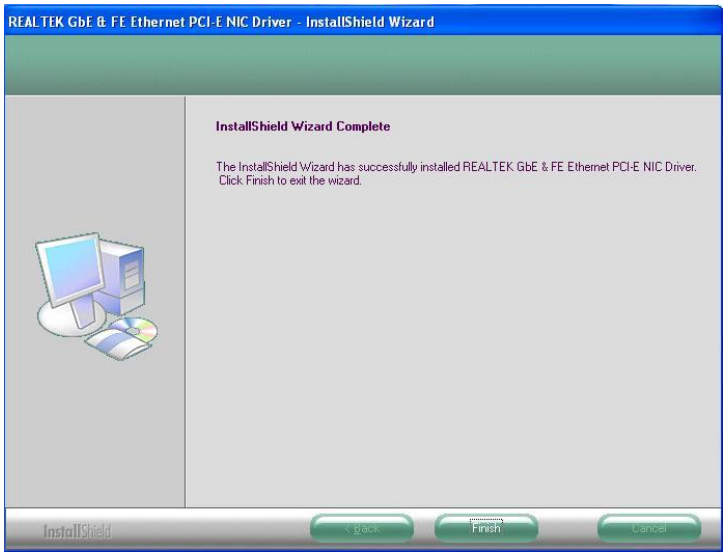
1. Insert the CD that comes with the board. Click ***Intel***, then ***LAN Card,*** and then ***Realtek Lan Controller Drivers***.

2. Click ***Realtek RTL8111E LAN Drivers.***

3.When the welcome screen to InstallShield Wizard appears, click ***Next*** to start the installation.

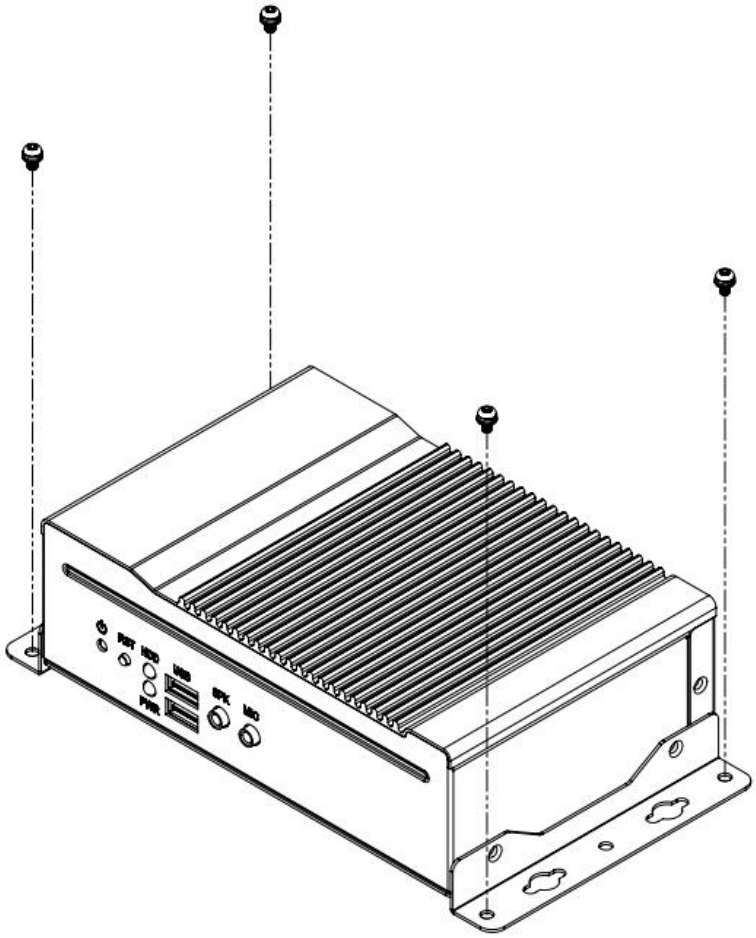


4.When the InstallShieldWizard has finished installing the Realtek LAN drivers, click ***Finish***.



Appendix

Mounting CSB200-897 to the Wall



You can install CSB200-897 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 [Four M3 length 4.4mm for VESA mounting] 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.