IPPCxx02-RE

User Manual

Revision	Release Date
V1.0	2015/09/30

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Safety Information

Your IPPCxx02-RE 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 50˚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 OR ABOVE 60° C. 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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CHAPTER 1 INTRODUCTION

1.1 General Description

The IPPCxx02-RE is a fanless panel pc, powered by an Intel Atom processor D2550 with a speed of 1.86GHz. It supports 1x SO-DIMM that accommodates up to 4GB DDRIII 1066MHz FSB memory. Some of the main features include 4x USB connectors, 1x COM port, 1x SATA HDD space support, 1x PCI slot expansion and 9V~32V DC power input. It is ideal for industrial automation, factory automation applications.

IPPCxx02-RE overview

1.2 System Specification

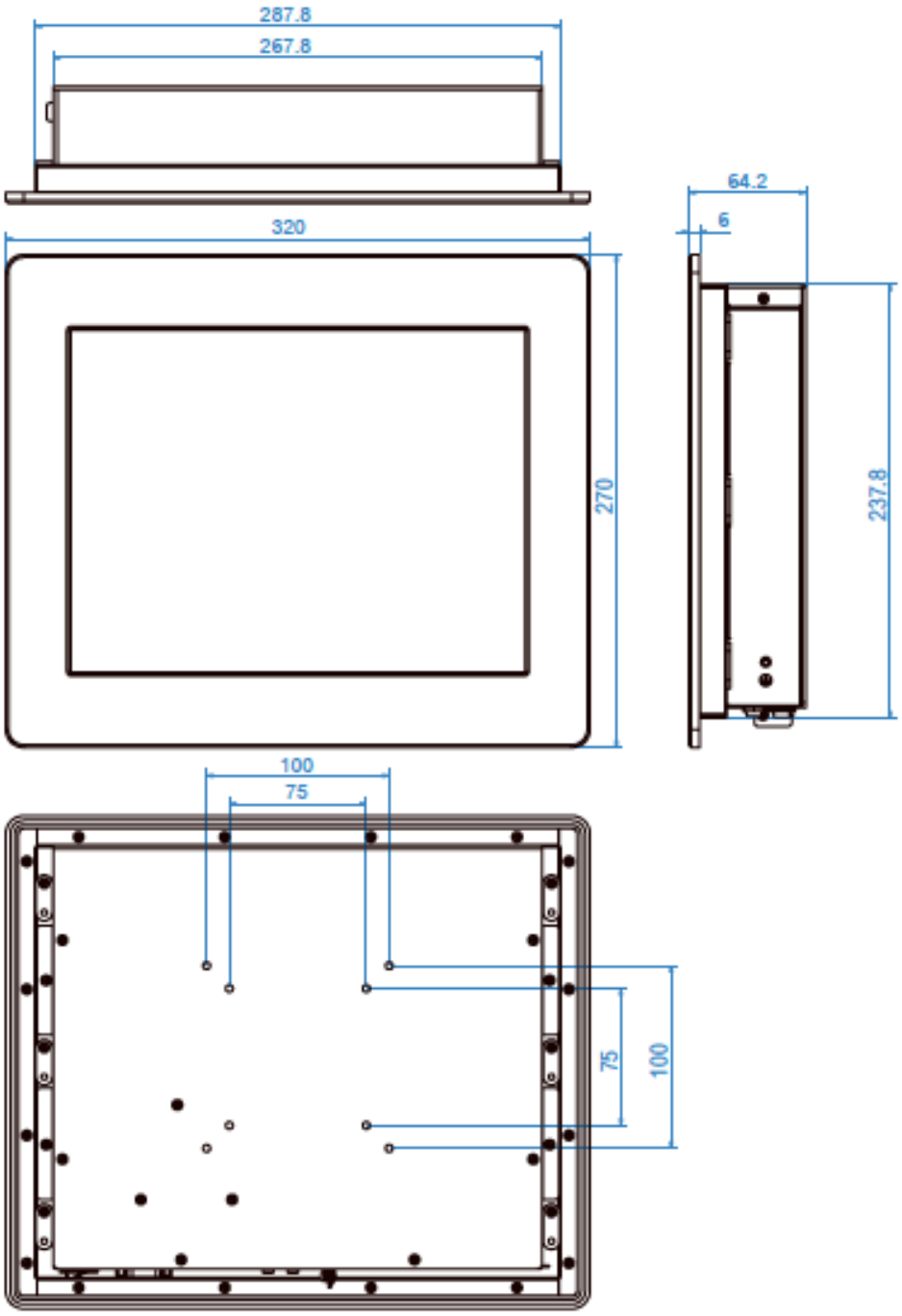
1.2.1 Hardware Specifications

Model Name	IPPC1202-RE	IPPC1702-RE
CPU	Intel Atom Process D2550 1M Cache, 1.86GHz	
Chipset	Intel NM10 Express Chipset	
Memory	1 x DDR3-1066 SO-DIMM up to 4GB, default 2GBx1	
I/O Interface	2 x Gigabit LAN (RJ45) 4 x USB 2.0 1 x COM1 RS-232/422/485 1 x VGA 1 x Line-out microjack 1 x Mic-in microjack 1 x Digital I/O 1 x DC power connector w/screw locker 1 x Power on/off rock switch	
Storage	1 x 2.5” SATA HDD space, default 500G	
Expansion Slots	1 x PCI slot	
Power Supply	+ 12C DC-in, 84W power adaptor	
LCD Size	12.1” TFT LCD	17” TFT LCD
LCD Color	16.7M colors	
LCD Resolution	1024 x 768	1280 x 1024
LCD Brightness	350 cd/m2	250 cd/m2
LCD Contrast	800:1	1000:1
LCD Viewing Angle	170(H)/170(V)	178(H)/170(V)
Backlight MTBF	30,000 hrs	50,000 hrs
Touch Screen	Resistive Touch Screen	
Construction	Aluminum front bezel, black sliver painting	
Mounting	Panel mount and VESA 75x75/100 x 100 mm	
Dimensions (W)x(H)x(D) mm	320 x 270 x 64.2	430 x 365 x 65.7
Operating Temperature	0°C~ 50°C(with SSD)/ 0°C~ 40°C(with HDD)	
Storage Temperature	-20°C ~ 60°C	
Relative Humidity	10~90% (non-condensing)	
Protection Class	IP65 front bezel	
Certification	CE/FCC Class A /CB/CCC	
Operating System Support	Windows Embedded Standard 7, Windows 7 Pro for Embedded	

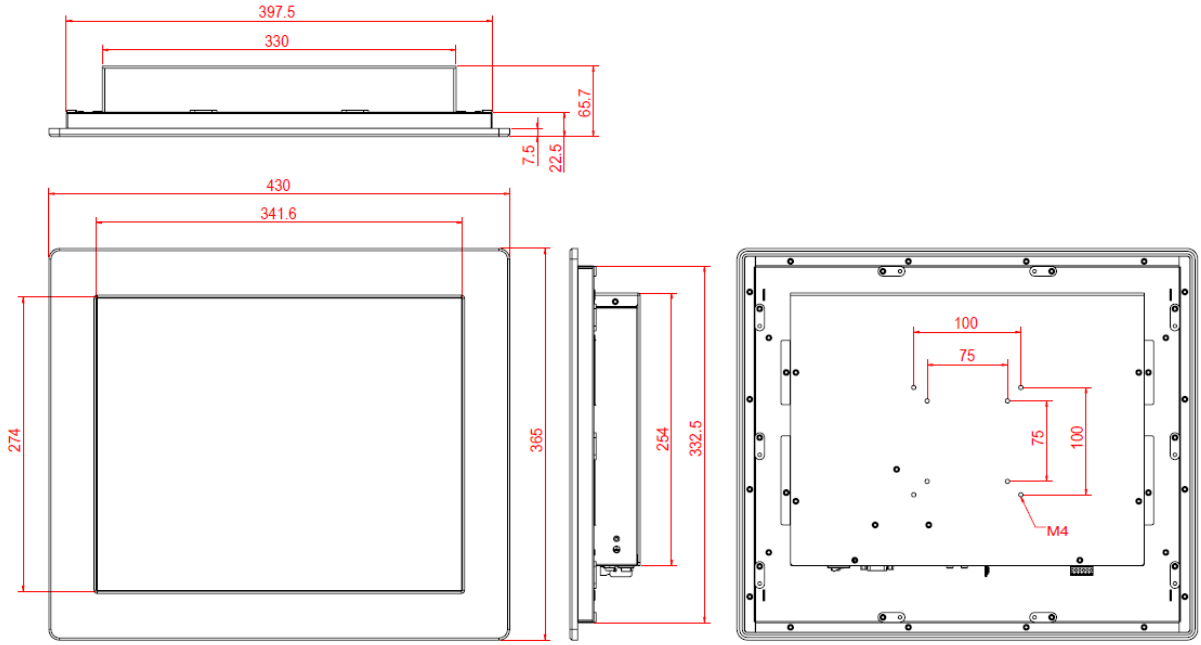
·This specification is subject to change without prior notice.

1.2.2 Dimensions

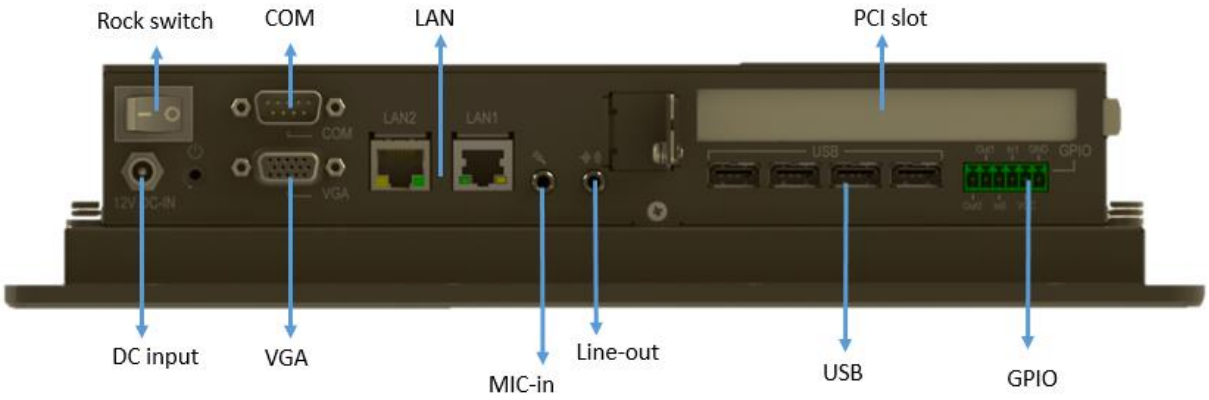
IPPC1202-RE



IPPC1702-RE



1.2.3 I/O View



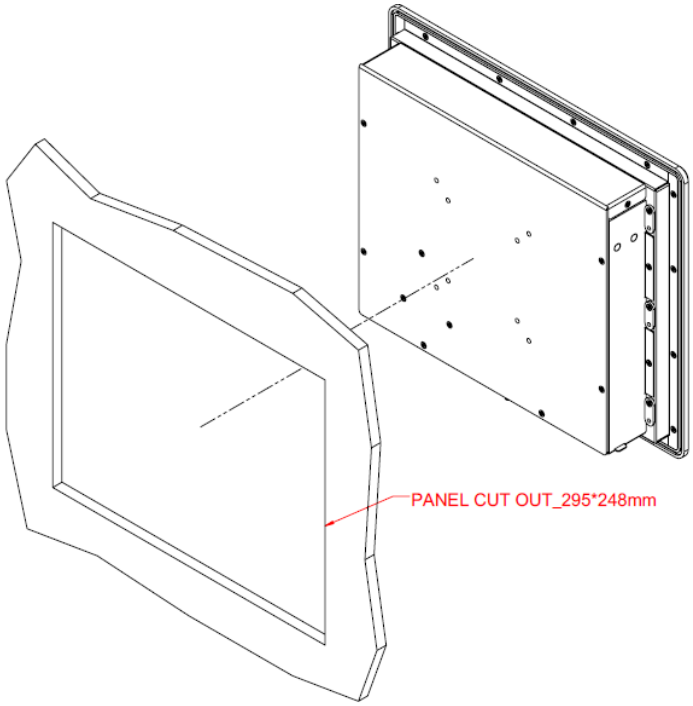
1.3 Packing List

Part No.	Description	Qty
1	Terminal block for GPIO	1 pc
2	84W power adaptor and power cord	1 pc
3	Mounting kit	1 set
4	Driver CD	1 pc

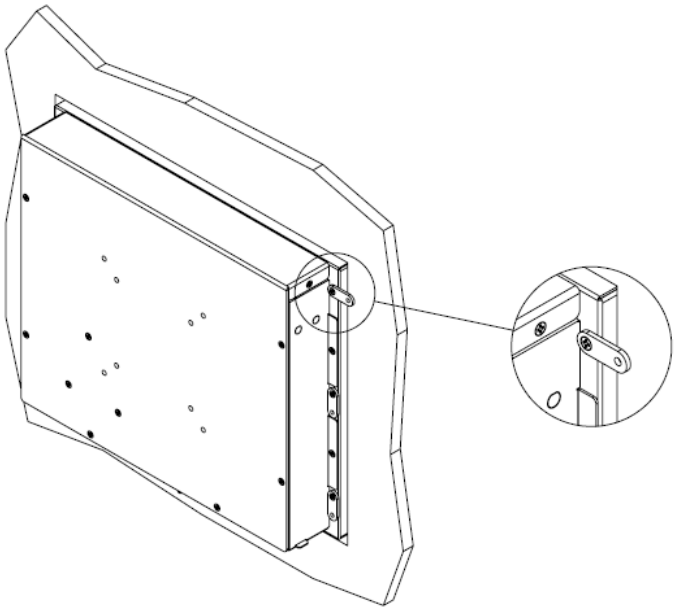
1.4 Installation

1.4.1 Installing the Panel Mount

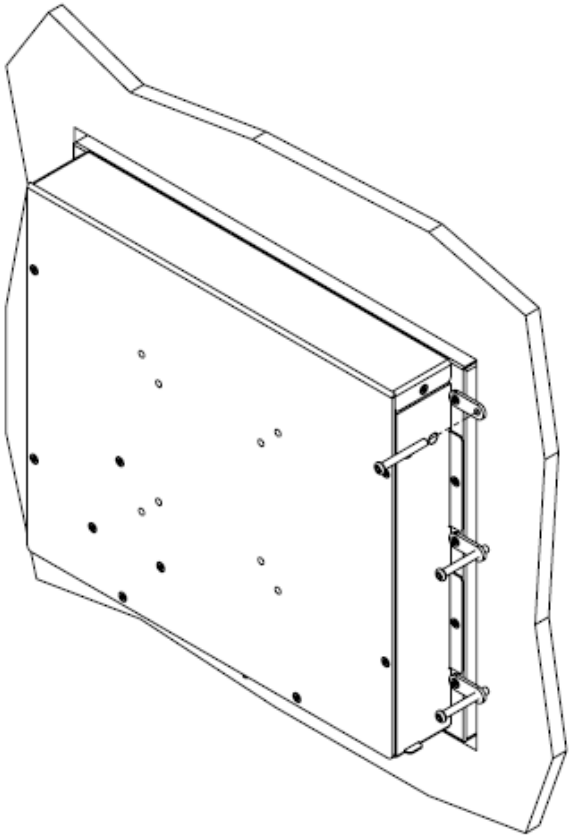
1. Put the panel pc into the wall



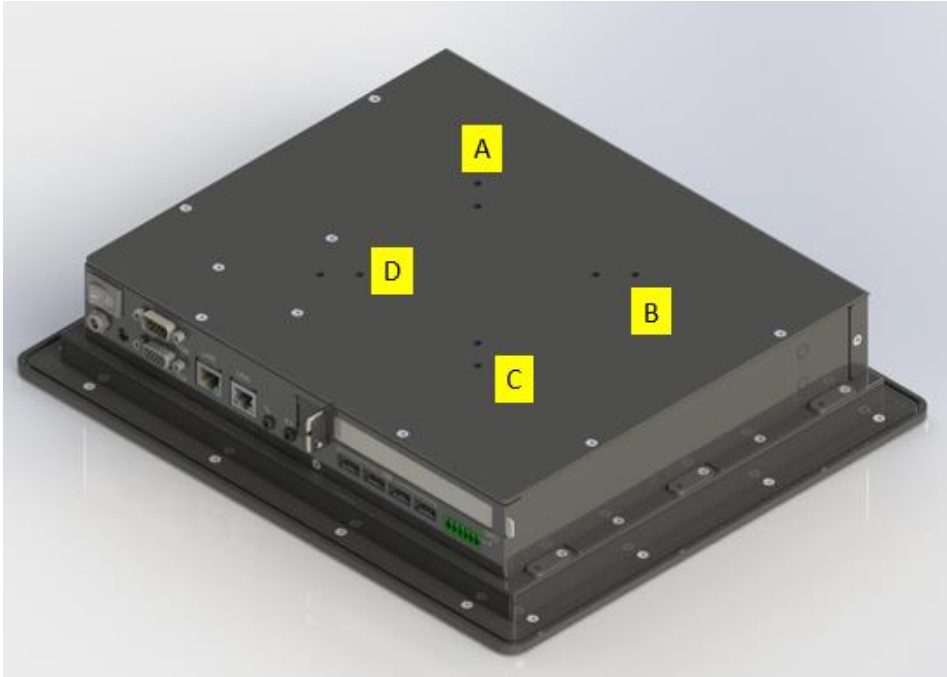
2. Install the mounting kit as shown in the picture below.



3. Assemble the screw and mounting kit as shown in the picture below.



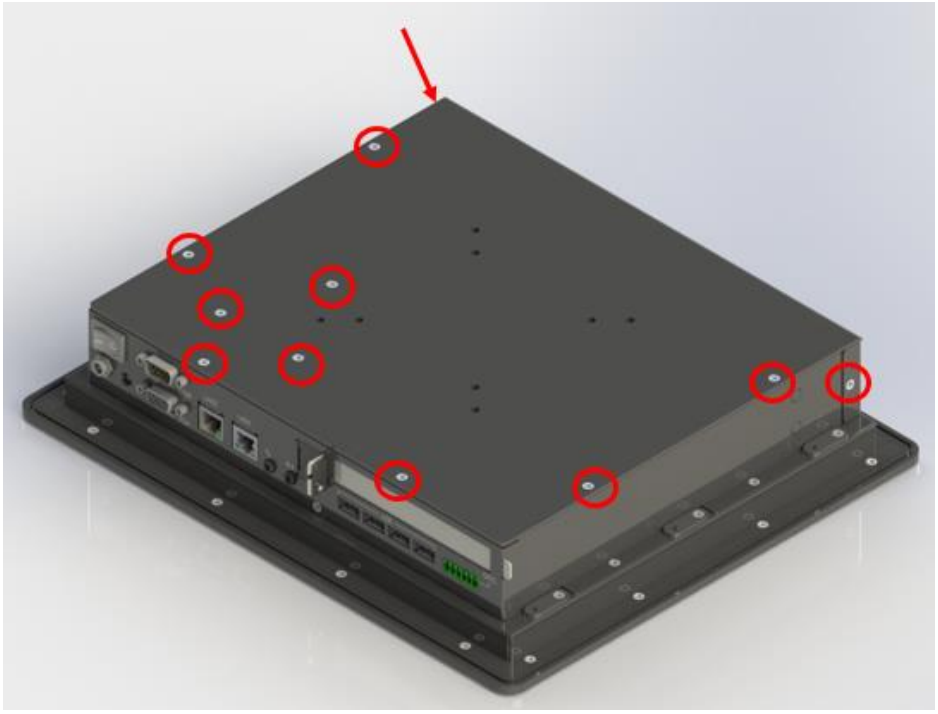
1.4.2 Installing the VESA Mount



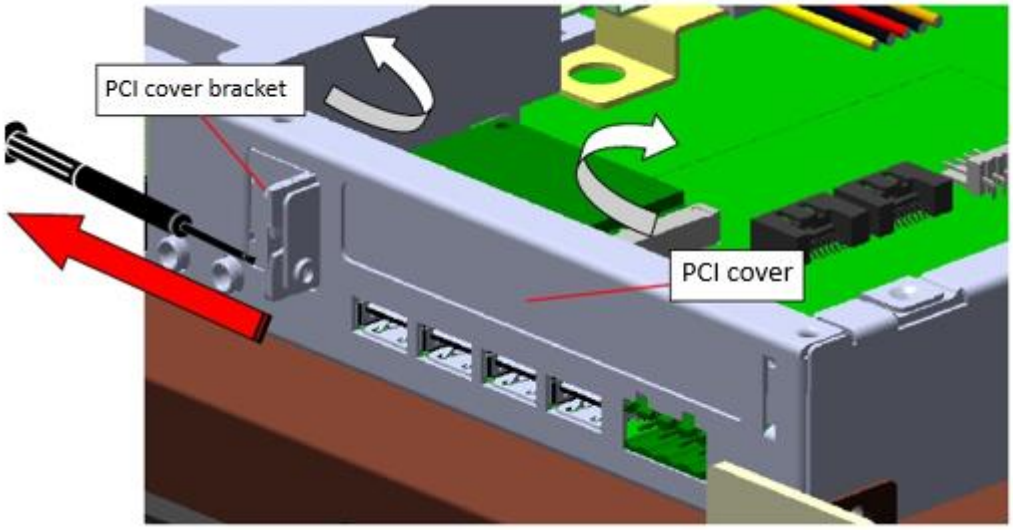
1. The VESA mount holes are compatible with VESA standard - 75x75 and 100x100
2. Put your VESA mounting kit on the letters as shown above.
3. Lock the screws from A to D.

1.4.3 Installing Additional PCI Cards

1. Unlock and remove the 11 screws.
2. Remove the back cover from the PPC controller.



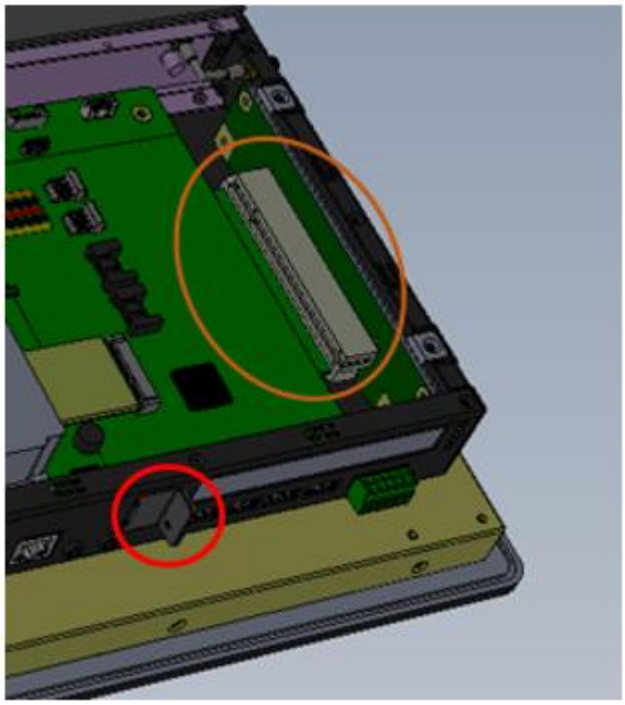
3. Remove the PCI cover and PCI cover bracket from the inside.



4. Install your PCI add-on card.

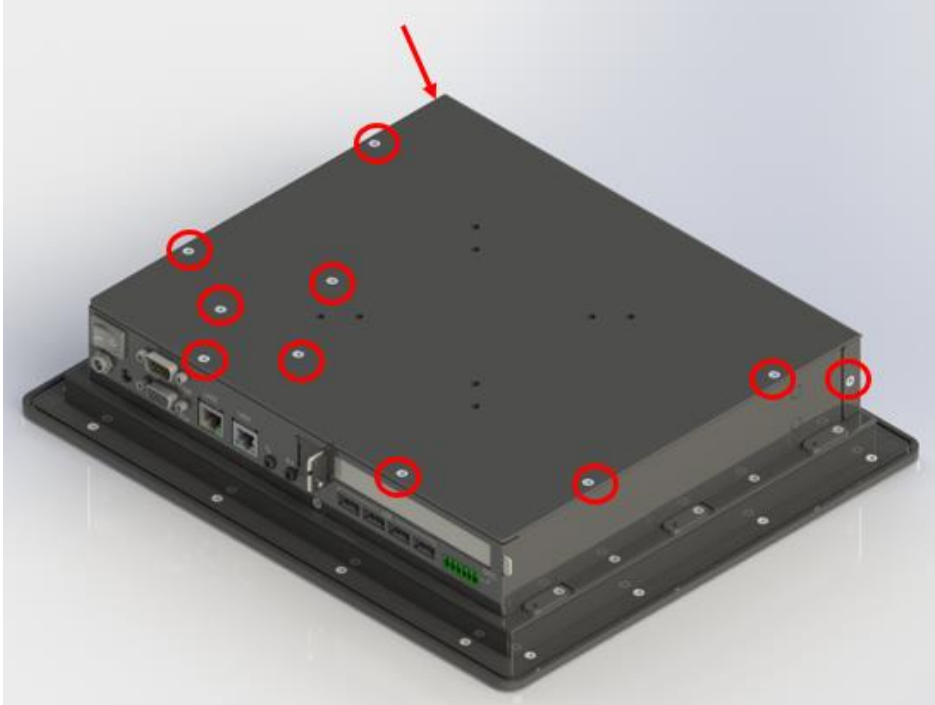
5. Put on the PCI cover bracket and lock the screw.

6. Put back the cover and lock the screws to finish the PCI add-on card installation.

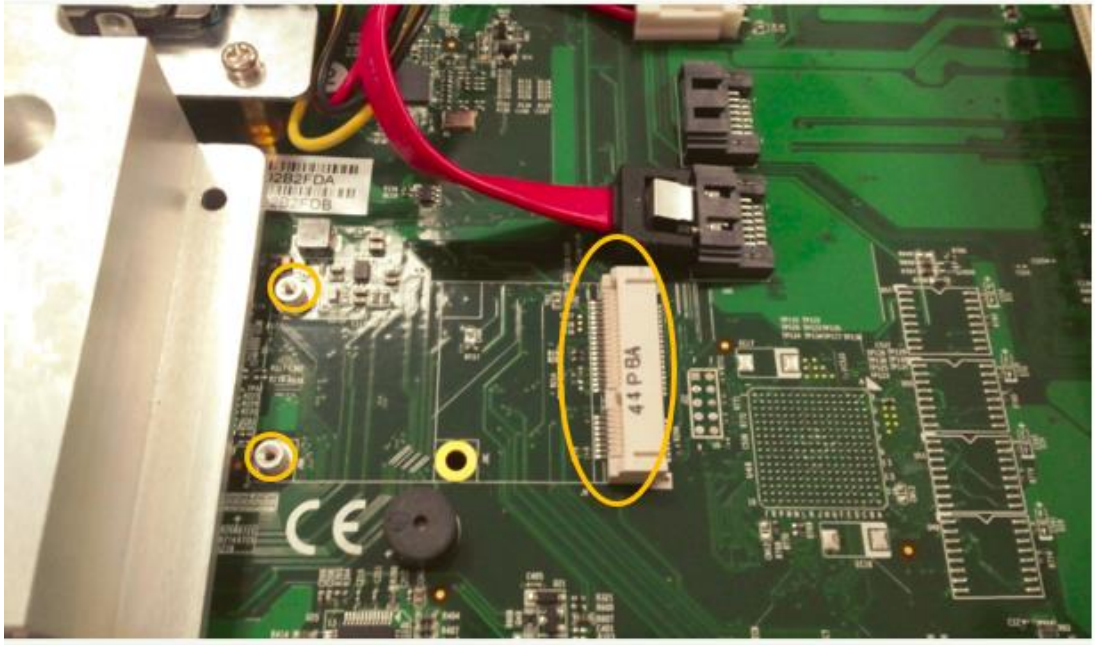


1.4.4 Installing the WIFI Module

1. Unlock and remove the 11 screws.
2. Remove the back cover from the PPC controller.



3. Push the WiFi module into the slot.
4. Use a screwdriver to turn the screw to its unlocked position.



CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Introduction

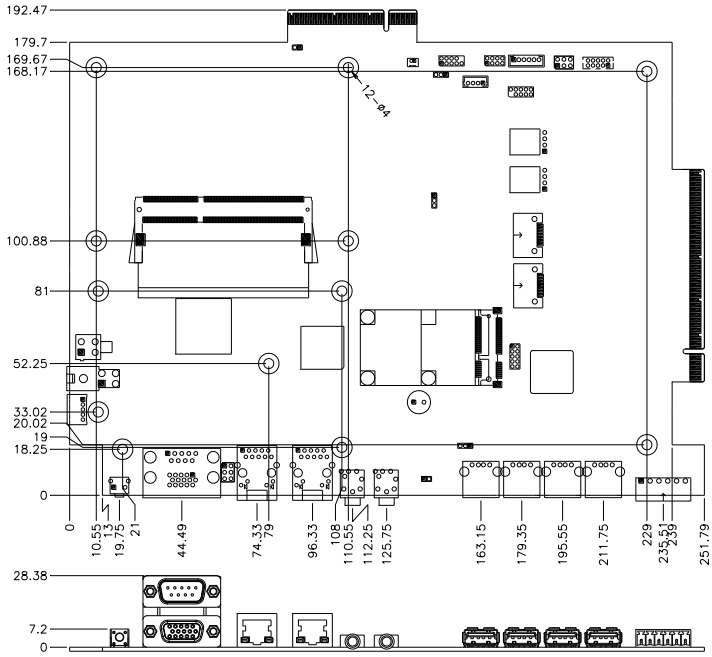
Measuring 190mm by 110mm, the IB806 motherboard is based on the Intel® Atom Cedarview chipset. Cedar Trail is a platform that uses the Intel Cedarview-D or Cedarview-M processor and Intel NM10 Express Chipset family in the desktop platforms.

The role of the processor in the system is to manage the flow of information between the following interfaces: DDR3 System Memory interface, DVI display interface, VGA graphics interface, Low Voltage Differential Signaling (LVDS) and the Direct Media Interface (DMI). The 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.

Specifications – Mainboard	
Model	IB806
Form Factor	Customized
CPU Type	Intel® “Cedar view” Processor, 32nm Bulk Atom™ D2550 [TDP= 10W] Package = FCBGA Type[22 mm x 22 mm] Cores / Threads = 2/2 [D2550]
CPU Speed	1.86GHz for D2550
Cache	1MB
CPU Socket	BGA437 @ component side
Chipset	Intel® “Tiger Point” NM10 PCH, CG82NM10 [TDP = 2.1W, 130nm] Package = BGA360, 17mm x 17 mm
BIOS	AMI BIOS, support ACPI Function
Memory	DRAM: Intel® Atom™ on-die memory controller supporting up to 4GB One DDR3-1066 SO-DIMM socket [Horizontal type], Non-ECC, Unbuffered, 1.5V
LVDS	24-bit single channels LVDS interface w/PCIEx8 golden finger
VGA	Supports DirectX 10.1 / OpenGL 3.0 IGP DB15 connector for VGA
LAN	Realtek® 8111E (GbE) as 1st LAN Realtek® 8111E (GbE) as 2nd LAN
Audio	Intel® NM10 PCH built-in HD Audio controller + Realtek ALC662 Codec w/ class-D speaker amplifier (2.3W per channel @ 5V power supply) [7mm x 7mm @ 48-QFN] ; support 2-channel audio out + amp

USB	Intel® NM10 PCH integrated USB 2.0 host controller: 1. 4 ports in the rear panel 2. 1 port via onboard Mini-PCIE 3. 2 ports via edge golden-finger for connecting with ID910 4. 1 ports via edge golden-finger for connecting with IP930 **Total 8 x USB 2.0 ports**
LPC I / O	Nuvoton NCT6627UD [128-pin QFP, 14x14x1.4mm] - COM #1 (RS232/422/485 jumper-less) support ring-in with power @500 mA (selectable for 5V or 12V) - COM #2 (RS232 only) support ring-in with power @500 mA (cable selectable by pin #9 or pin #10 for 5V or 12V) via onboard pin-header - COM #3(TTL for MCU usage) thru golden finger to expansion module (ID910) - COM #4 (TTL for daughter board usage) thru golden finger to expansion module [Hardware Monitor] 2x thermal inputs; 2x voltage monitoring
Expansion Slot	Mini PCI-e socket x 1, full-sized type, reserved one mounting hole for half-sized type, [USB device support]
Digital IO	2 in & 2 out with 5V Vcc 0.5A and GND [thru edge connector @ 1x6 pin terminal block type] Connector type Dinkle ECH350R-06P
Edge Connector	VGA DB15 connector, DB9 1 for COM1 Digital I/O connector @ 1x6 pin type RJ45 x2 for GbE LAN, USB 2.0 connector x 4 for USB1~4 Line-out microjack, Mic-in microjack x 1
Onboard Header/Connector	2 ports x SATA II 4-pin power connector x2 for SATA HDD 2x5-pin box header for COM #2 2x5-pin header for LPC (debug purpose only) Mini PCI-e(1x) connector [full-sized] 5-pin box header for smart battery interface 2x2-pin power connector, 2x2-pin power vertical type connector 1x power button
Watchdog Timer	Yes (256 segments, 0, 1, 2…255 sec/min)
Power management	MSP430G2433
Power Connector	+12V DC-in only for AT/ATX mode
RoHS	Yes
Golden Finger	A. PCIE(x16) golden finger x 1 for connecting with IP930 Including the signals below: - PCIe(1x) x1, PCI x1, COM(TTL) x1, USB 2.0 x 1 - 12V 4A power, 5V 2A, 3.3V 2A **Each pin for PCI-express is 1A** B. PCIE(8x) for ID910 board - COM (TTL) x1, USB 2.0 x2, 24-bit LVDS, DVI x1 - Power button x1, Reset button x1, LED signal HDD x1 - Audio x1, Audio detect pin for AMP x1 - 12V 4A power, 5V 4A power, 3.3V 4A power - SCI x1

Board Dimensions



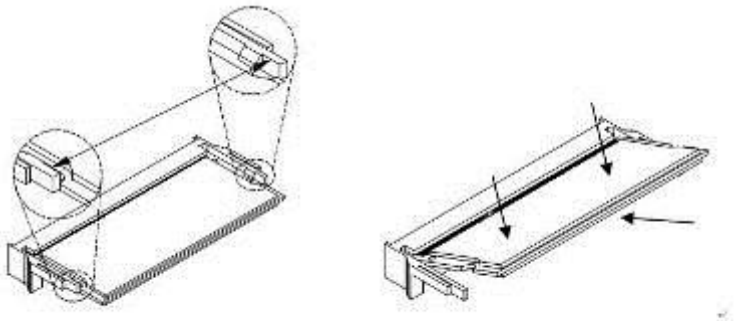
2.2 Installing the Memory

IB806 supports one DDR3 memory socket for a maximum total memory of 4GB.

Installing and Removing Memory Modules

To install the DDR3 modules, locate the memory slot on the:

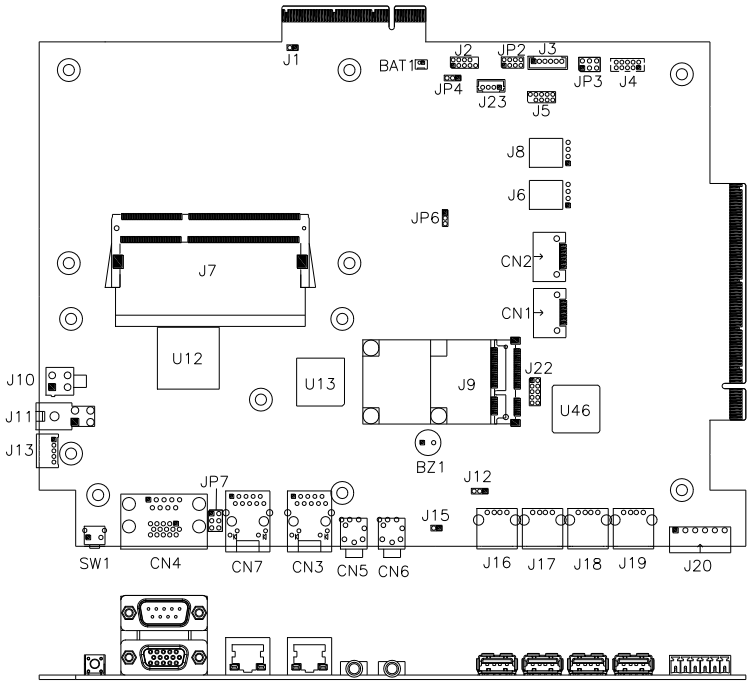
1. Hold the DDR3 module so that the key of the DDR3 module aligned with that on the memory slot.
2. Gently push the DDR3 module in an upright position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.
3. To remove the DDR3 module,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



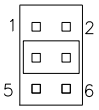
2.3 Setting Jumpers

Jumpers are used on IB806 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 IB806 and their respective functions.

Jumper Locations on IB806



JP7, JP3: COM1, COM2 RS232 RI/+5V/+12V Power Setting

JP7, JP3	Setting	Function
	Pin 1-2 Short/Closed	+12V
	Pin 3-4 Short/Closed	RI
	Pin 5-6 Short/Closed	+5V

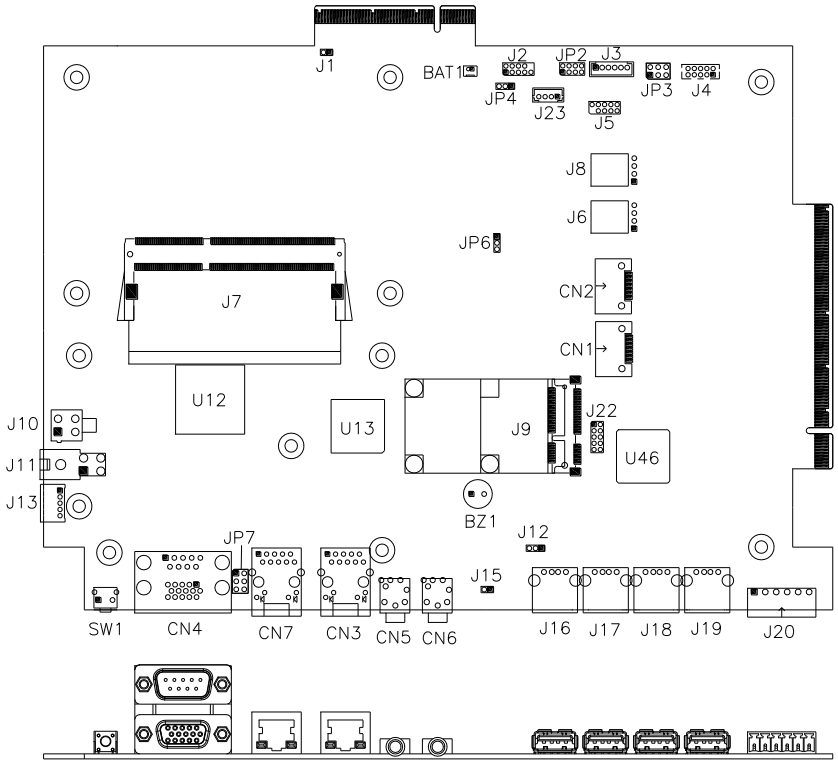
Note: The suggested setting is RI, with maximum current lower than 1A.

JP4: Clear CMOS Contents

JP4	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

2.4 Connectors

Connector Locations on IB806

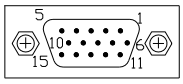


CN1, CN2: SATA Connector

CN3: Gigabit LAN (RTL8111E-VL)

This RJ45 LAN connector features for EUP LAN wakeup.

CN4: DB9+CRT Connector

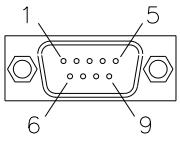


Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
VCC	9	10	GND
N.C.	11	12	DDCDATA
HSYNC	13	14	VSYNC
DDCCLK	15		

(COM1) is a DB-9 connector.

Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	6	DSR, Data set ready
RXD, Receive data	2	7	RTS, Request to send
TXD, Transmit data	3	8	CTS, Clear to send
DTR, Data terminal ready	4	9	RI, Ring indicator
GND, ground	5	10	Not Used

COM1 is jumper-less for RS-232, RS-422 and RS-485 and configured with BIOS selection.



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

Note: For RS-485, short pins Pin1/Pin3 together, also for Pin2/Pin4.

CN5: Mic Phone-Jack Connector

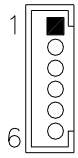
CN6: Line-out Phone-Jack Connector

CN7: Gigabit LAN (RTL8111E-VL)

This RJ45 LAN connector features LAN wakeup.

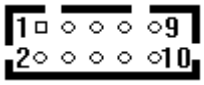
J2: Debug 80 Port Connector (factory use only)

J3: Digital I/O 2in/2out Connector



Pin #	Signal Name
1	Out2
2	Out3
3	In2
4	In3
5	VCC
6	GND

J4: COM2/RS232 Serial Port



Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	2	RXD, Receive data
TXD, Transmit data	3	4	DTR, Data terminal ready
Ground	5	6	DSR, Data set ready
RTS, Request to send	7	8	CTS, Clear to send
RI, Ring indicator	9	10	Not Used

J5: SPI Flash Connector (Factory use only)

J6, J8: SATA HDD Power Connector

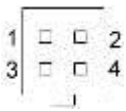
Pin #	Signal Name
1	+5V
2	Ground
3	Ground
4	+12V

J7: DDR3 SO-DIMM Socket

J9: Mini PCIE Connector

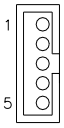
J10, J11: 12V Power Connector

This connector supplies the CPU operating voltage.



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

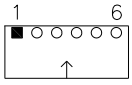
J13: Smart Battery Interface Connector



Pin #	Signal Name
1	RST
2	EXTSMI
3	Ground
4	DATA
5	CLK

J16, J17, J18, J19: USB2.0 Connectors

J20: Digital I/O 2in/2out Connector



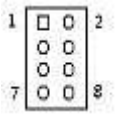
Pin #	Signal Name
1	Out0
2	Out1
3	In0
4	In1
5	VCC
6	GND

J22: SRAM CPLD Flash Connector (factory use only)

J23: MCU Flash Connector (factory use only)

JP2: Front Panel Connector

The following table shows the pin outs of the 2x4 pin header



Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	PWR_SW
PWR_LED+	3	4	PWR_LED-(GND)
HDD_LED+	5	6	HDD_LED-
Ground	7	8	RESET

PCIE1: PCIEx8 Goledn Finger

(Includes DVI, USBx2, COMx1, LVDS Single Channel 24bit Signal)

PCIE2: PCIEx16 Goledn Finger

(Includes PCI 32bit master x2, USBx1, COMx1, PCIEx1 Signal)

CHAPTER 3 BIOS SETUP

3.1 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.

3.2 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> 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.*

System Language

Choose the system default language.

System Date

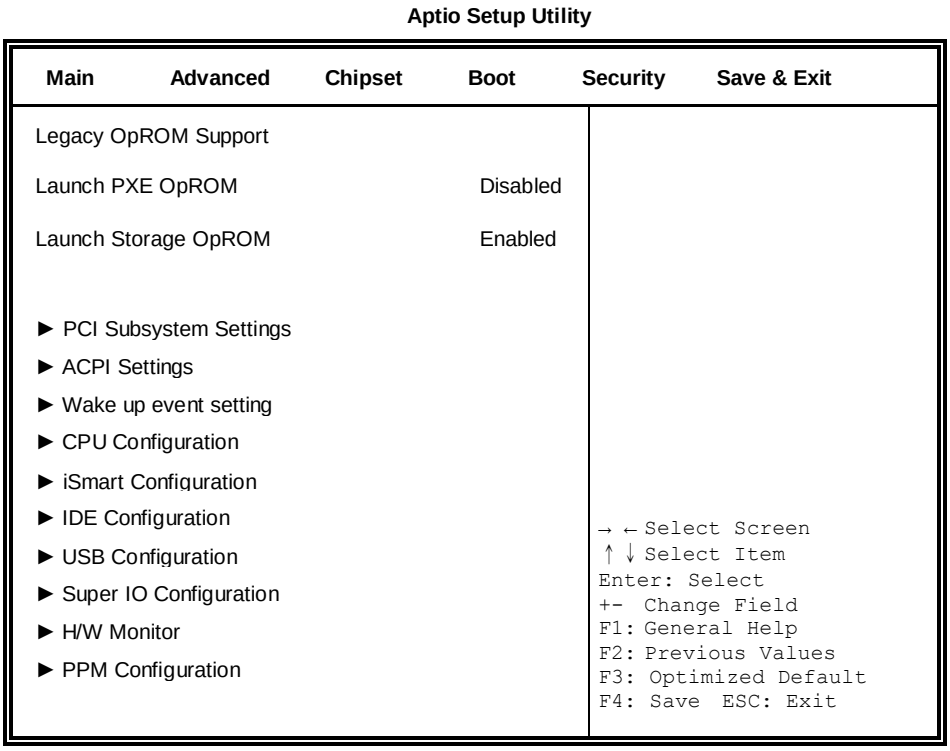
Set the Date. Use Tab to switch between Data elements.

System Time

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

3.3 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.



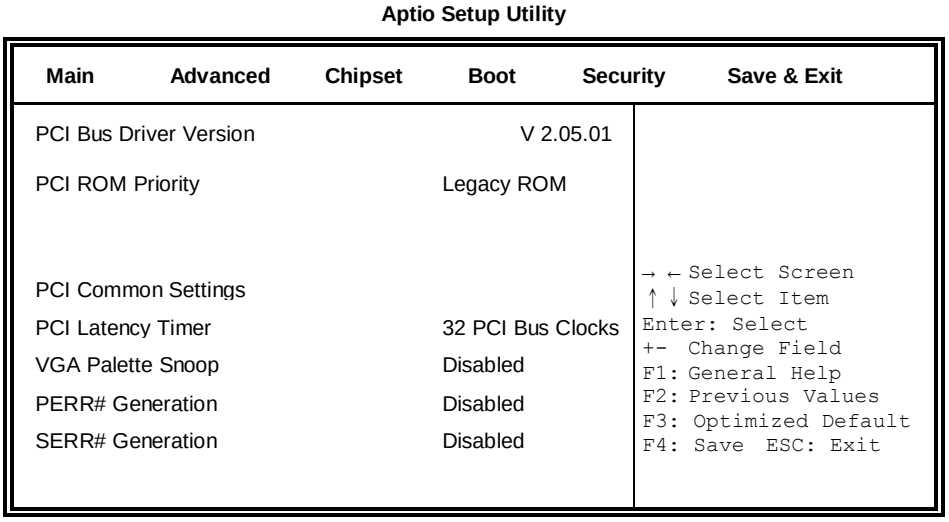
Launch PXE OpROM

Enable or Disable Boot Option for Legacy Network Devices.

Launch Storage OpROM

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

PCI Subsystem Settings



PCI ROM Priority

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

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or Disables VGA Palette Registers Snooping.

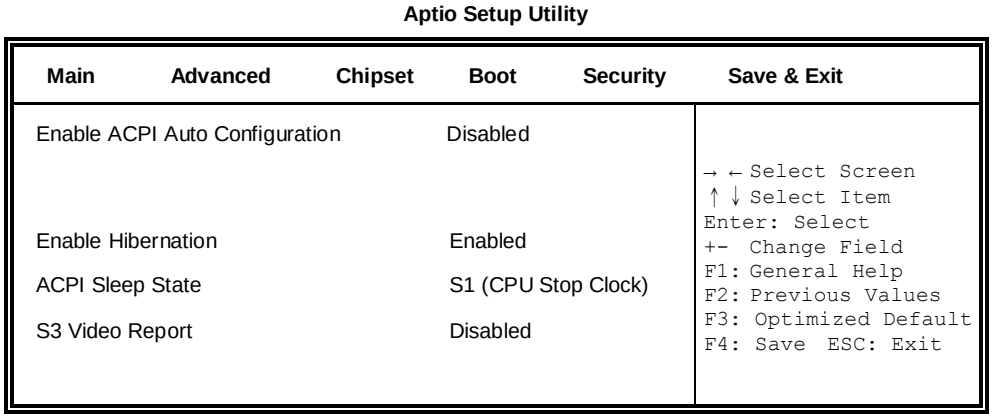
PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

ACPI Settings



Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

Enable Hibernation

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

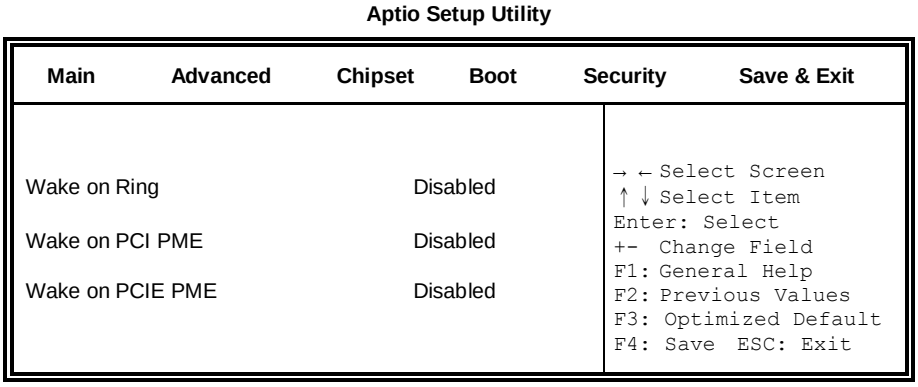
ACPI Sleep State

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

S3 Video Report

The default setting is Disabled.

Wake up event settings



Wake on Ring

The options are Disabled and Enabled.

Wake on PCI PME

The options are Disabled and Enabled.

Wake on PCIE PME

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
CPU Configuration					
Processor Type			Intel(R) Atom(TM) CPU		
EMT64			Not Supported		
Processor Speed			2132 MHz		
System Bus Speed			533 MHz		
Ratio Status			16		
Actual Ratio			16		
System Bus Speed			533 MHz		
Processor Stepping			30661		
Microcode Revision			262		
L1 Cache RAM			2x56 k		
L2 Cache RAM			2x512 k		
Processor Core			Dual		→ ← Select Screen
Hyper-Threading			Supported		↑ ↓ Select Item
					Enter: Select
Hyper-Threading			Enabled		+- Change Field
Execute Disable Bit			Enabled		F1: General Help
Limit CPUID Maximum			Disabled		F2: Previous Values
					F3: Optimized Default
					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.

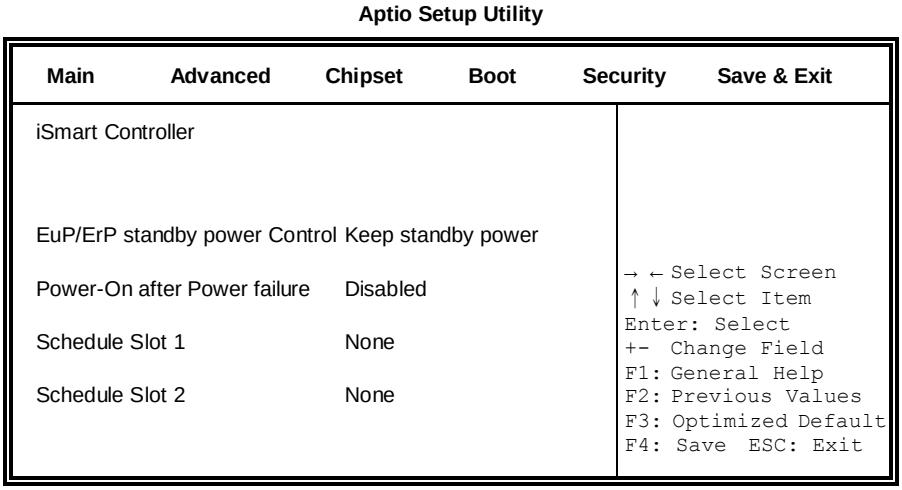
Execute Disable Bit

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.)

Limit CPUID Maximum

Disabled for Windows XP.

iSmart Controller



EuP/ErP standby power Control

Saving the power consumption on power off.

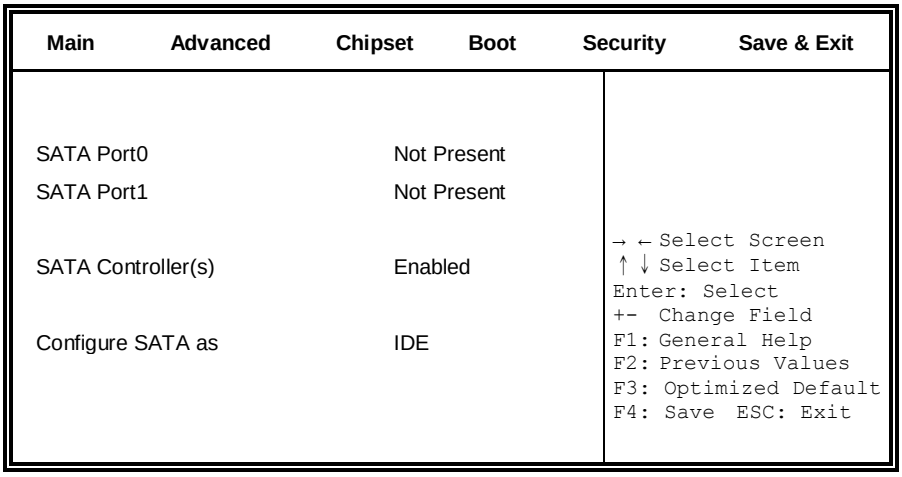
Power-On after Power failure

This field sets the system power status whether on or off when power returns to the system from a power failure situation.

Schedule Slot

None / Power On / Power On/Off – Setup the hour/minute for system power on

IDE Configuration



SATA Controller(s)

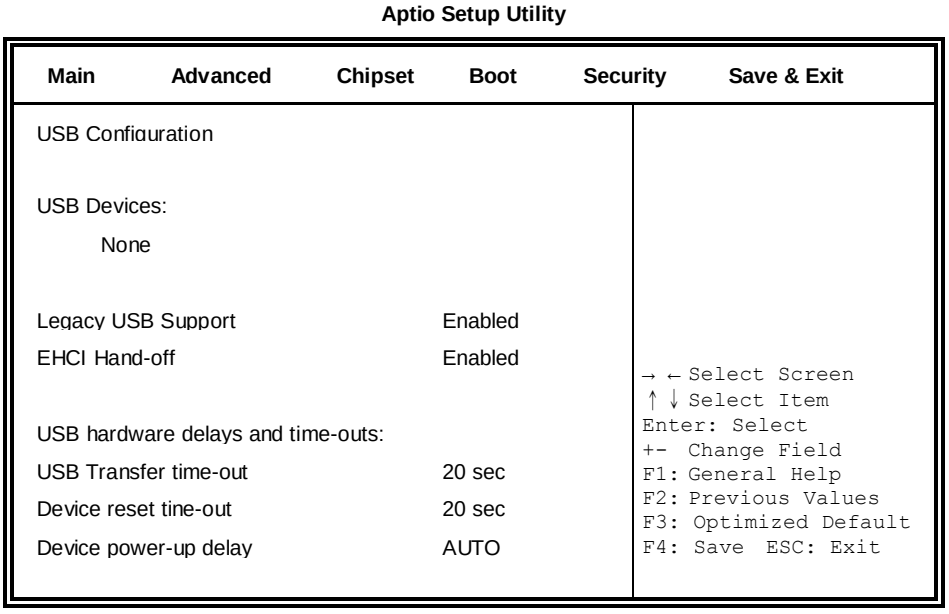
Enable / Disable Serial ATA Controller.

Configure SATA as

(1) IDE Mode.

(2) AHCI Mode.

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.

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.

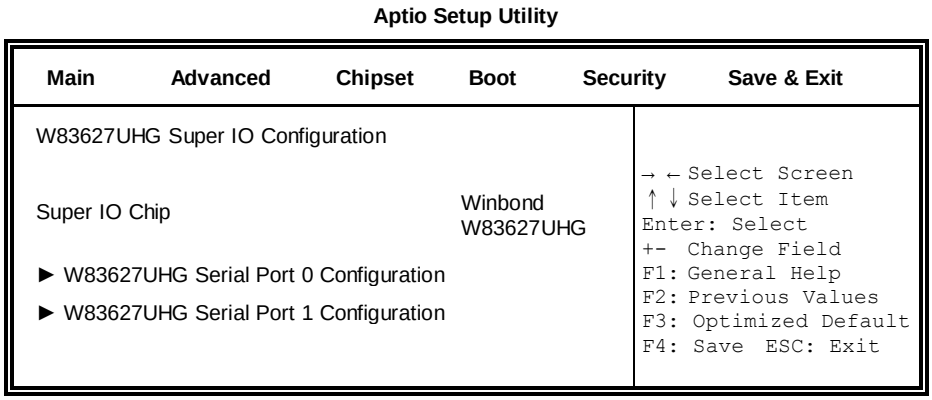
Device reset tine-out

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.

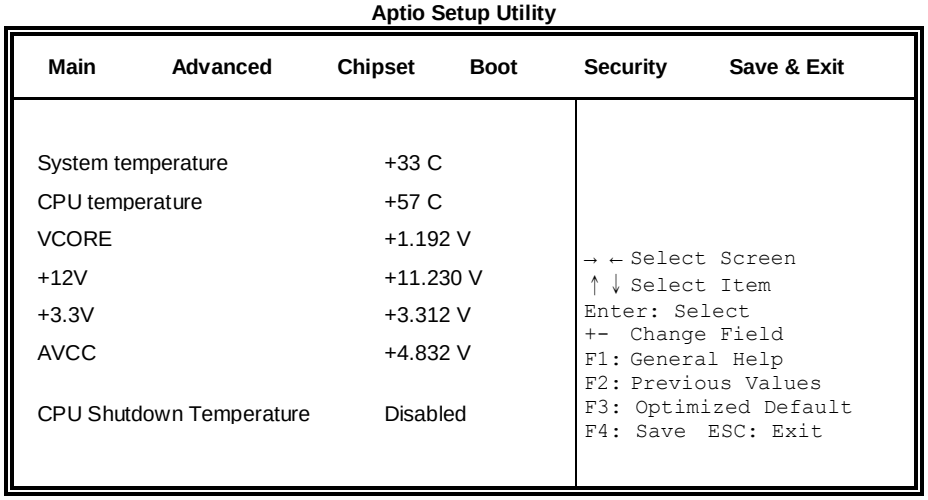
Super IO Configuration



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.

H/W Monitor



CPU Smart Fan Control

Disabled (default)

70 ℃ / 75 ℃ / 80 ℃ / 85 ℃ / 90 ℃ / 95 ℃

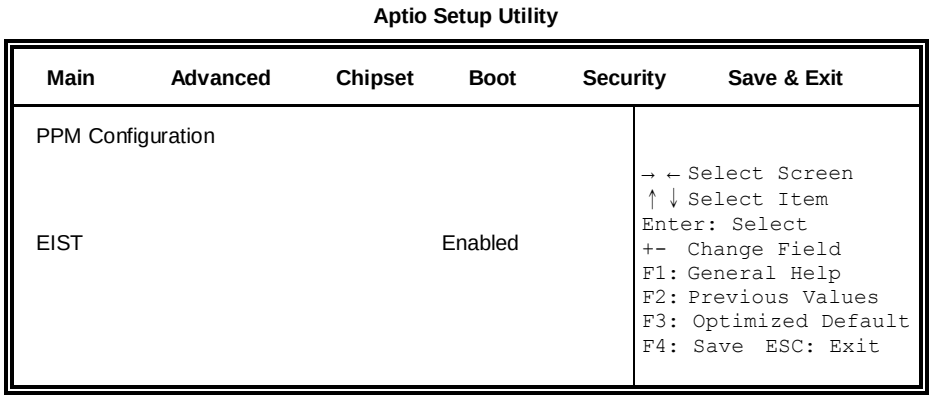
Temperatures/Voltages

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.

CPU Shutdown Temperature

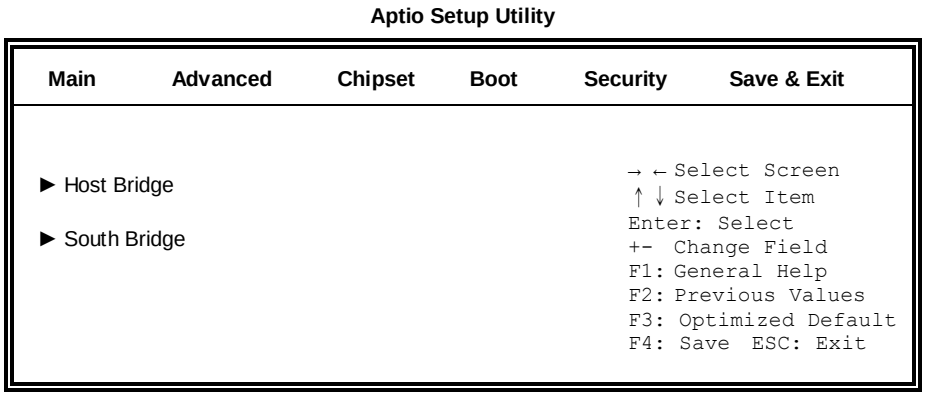
The default setting is Disabled.

PPM Configuration



3.4 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.



Host Bridge

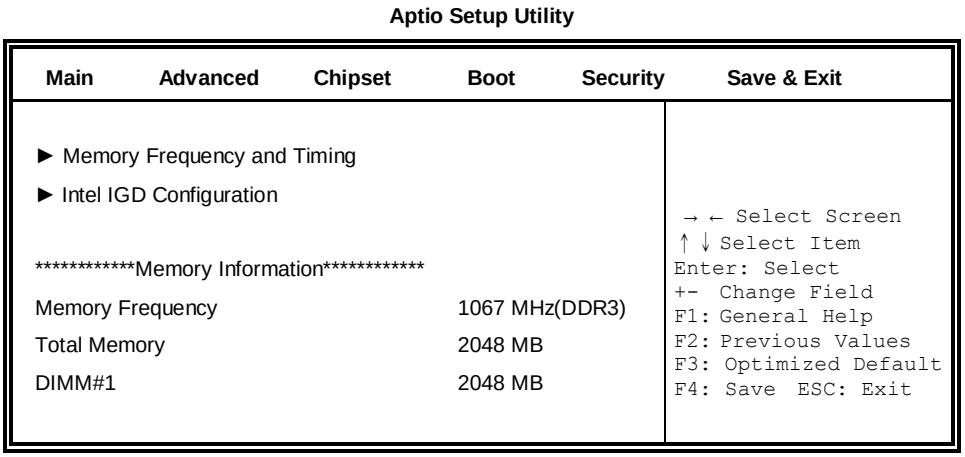
This item shows the Host Bridge Parameters.

South Bridge

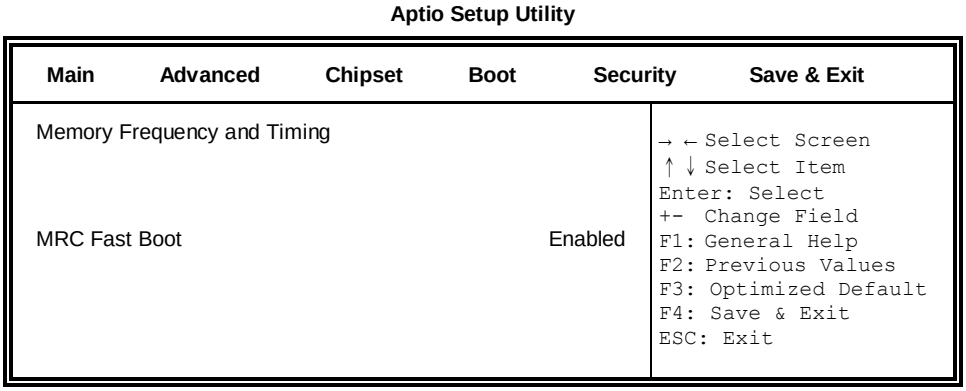
This item shows the South Bridge Parameters.

Host Bridge

This section allows you to configure the Host Bridge Chipset.



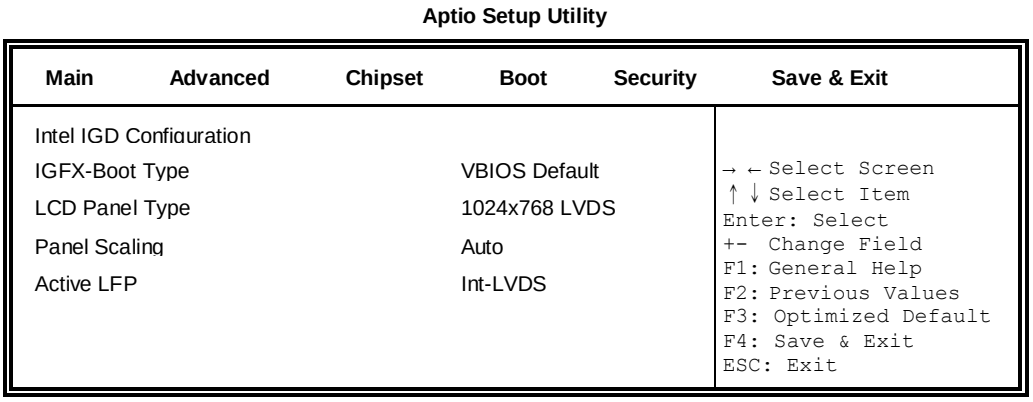
Memory Frequency and Timing



MRC Fast Boot

The options are Disabled and Enabled.

Intel IGD Configuration



IGFX-Boot Type

Select the video Device which will be activated during POST .

Panel Color Depth

Select the LFP Panel Color Depth: 18 Bit, 24 Bit.

LCD Panel Type

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item: 640x480 LVDS ~ 2048x1536 LVDS.

Panel Scaling

Select the LCD panel scaling option used by the Internal Graphics Device: Auto, Off, Force Scaling.

Active LFP

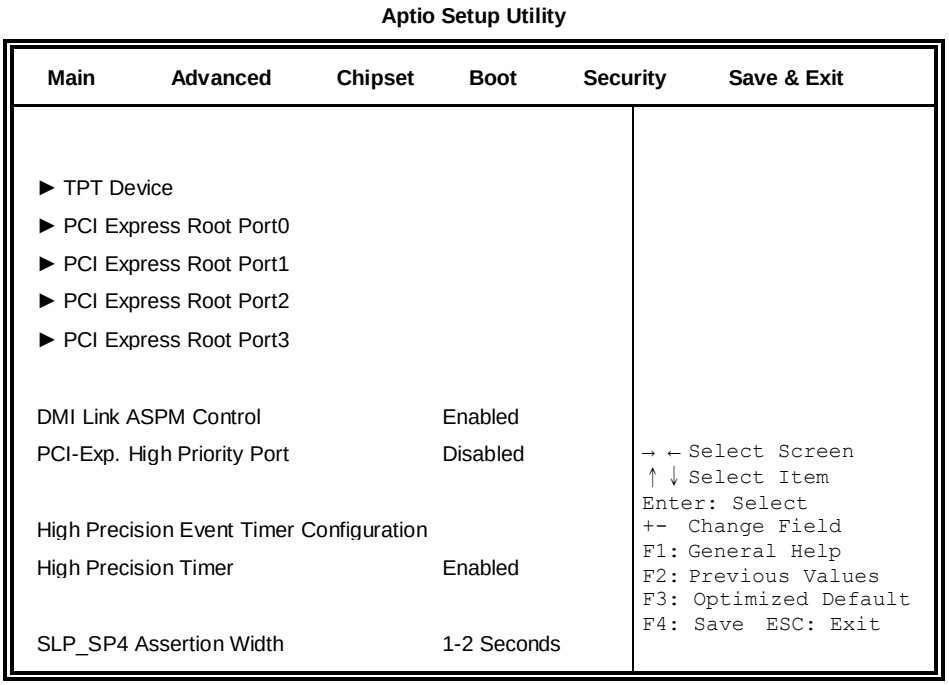
Select the Active LFP Configuration.

No LVDS: VBIOS does not enable LVDS.

Int-LVDS: VBIOS enables LVDS driver by Integrated encoder.

South Bridge

This section allows you to configure the South Bridge Chipset.



DMI Clink ASPM Control

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

PCI-Exp. High Priority Port

The options are Disabled, Port1, Port2, Port3, and Port4.

High Precision Event Timer Configuration

Enable/or Disable the High Precision Event Timer.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

TPT Device

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

Azalia Controller	HD Audio	
UHCI #1 (port 0 and 1)	Enabled	→ ← Select Screen
UHCI #2 (port 2 and 3)	Enabled	↑ ↓ Select Item
UHCI #3 (port 4 and 5)	Enabled	Enter: Select
UHCI #4 (port 6 and 7)	Enabled	+- Change Field
USB 2.0(UHCI) Support	Enabled	F1: General Help
		F2: Previous Values
		F3: Optimized Default
		F4: Save ESC: Exit

PCI Express Root Port0

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

PCI Express Port 0	Enabled	
Port 0 IOxAPIC	Disabled	→ ← Select Screen
Automatic ASPM	Manual	↑ ↓ Select Item
		Enter: Select
		+- Change Field
		F1: General Help
		F2: Previous Values
		F3: Optimized Default
		F4: Save ESC: Exit

PCI Express Root Port1

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

PCI Express Port 1	Auto	
Port 0 IOxAPIC	Disabled	→ ← Select Screen
Automatic ASPM	Auto	↑ ↓ Select Item
		Enter: Select
		+- Change Field
		F1: General Help
		F2: Previous Values
		F3: Optimized Default
		F4: Save ESC: Exit

PCI Express Root Port2

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 2		Auto			
Port 0 IOxAPIC		Disabled			
Automatic ASPM		Auto			

→ ← Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized Default
F4: Save ESC: Exit

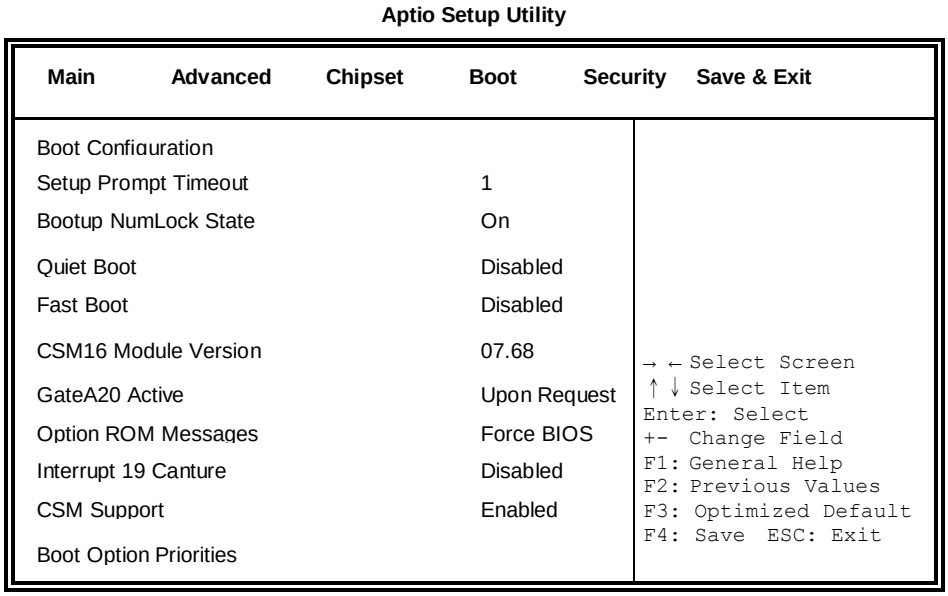
PCI Express Root Port3

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 3		Enabled			
Port 0 IOxAPIC		Disabled			
Automatic ASPM		Auto			

→ ← Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized DefaultF4:
Save ESC: Exit

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.

Option ROM Messages

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

Interrupt 19 Capture

Enable: Allows Option ROMs to trap Int 19.

CSM Support

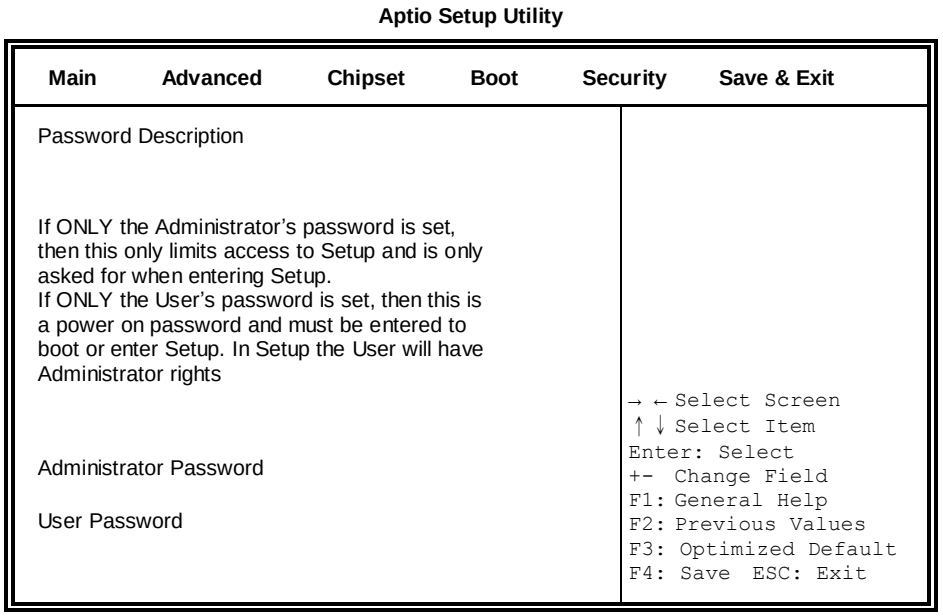
Enables/Disables/Auto CSM Support.

Boot Option Priorities

Sets the system boot order.

3.5 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.



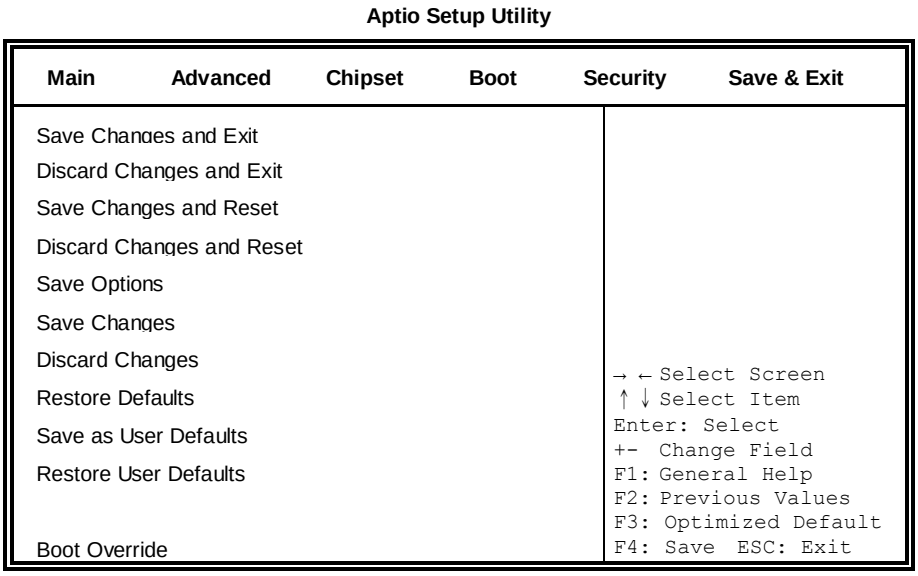
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

3.6 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.

Boot Override
Pressing ENTER causes the system to enter the OS.

CHAPTER 4 DRIVERS INSTALLATION

This section describes the installation procedures for software and drivers. The software and drivers are included with the motherboard.

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 disc that comes with the board. Click ***Intel*** and then ***Intel(R) Cedarview 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. Click ***Yes*** to accept the software license agreement and proceed with the installation process.

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

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

4.2 VGA Drivers Installation

1. Click ***Intel(R) Cedarview Graphics Driver.***

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

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

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

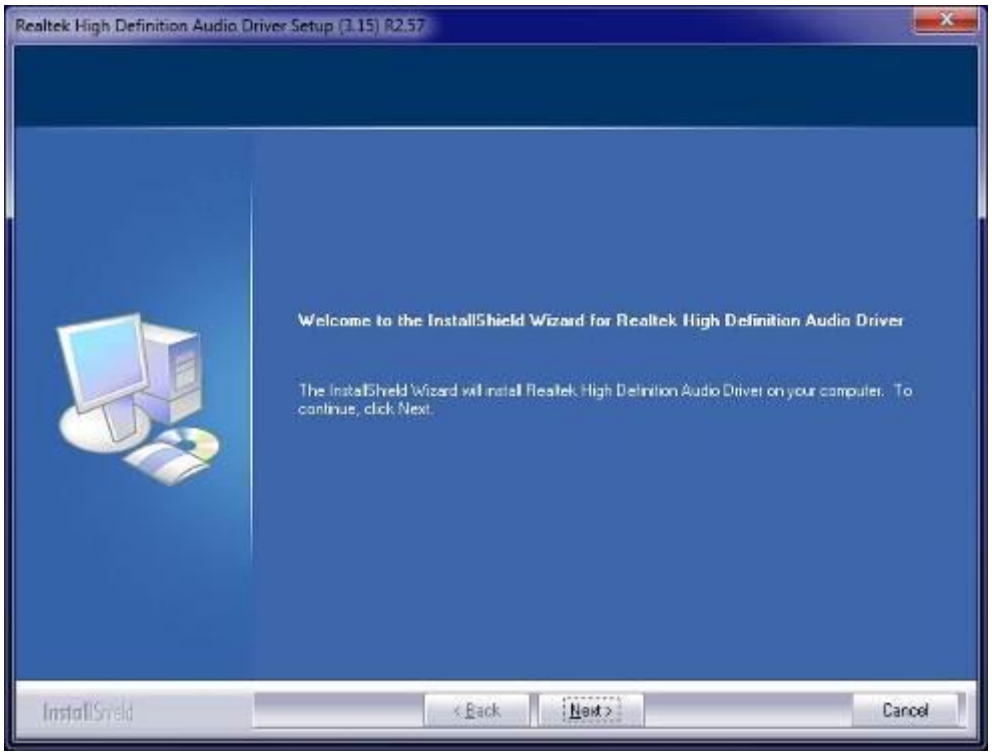
5. On the Setup Progress screen, click ***Next*** to continue.

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

4.3 Realtek HD Audio Driver Installation

1. Click ***Realtek High Definition Audio Driver.***

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

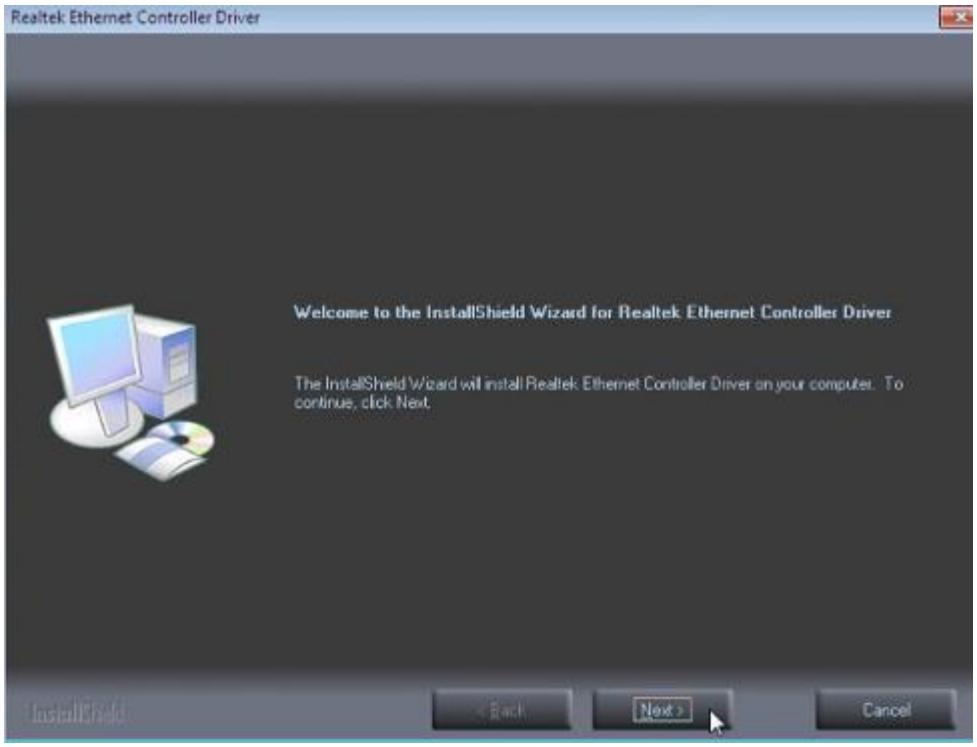


4. Restart the computer when prompted.

4.4 LAN Drivers Installation

1. Click ***Realtek LAN Controller Driver.***

2. Click ***Next*** to proceed with and complete the installation process.



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

4. When setup is complete, click ***Finish*** to restart the computer and for changes to take effect.

4.5 ALTERA FPGA Driver Installation

1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***ALTERA FPGA Drive***r.

2. When the Welcome to Peripheral Controller Driver 2.0 for Windows XP/Vista Setup Wizard screen appears, click ***Next*** to continue.

3. When the Ready to Install screen appears, click ***Install*** to continue.

4. The Setup process is now complete, Click ***Finish*** to restart the computer.