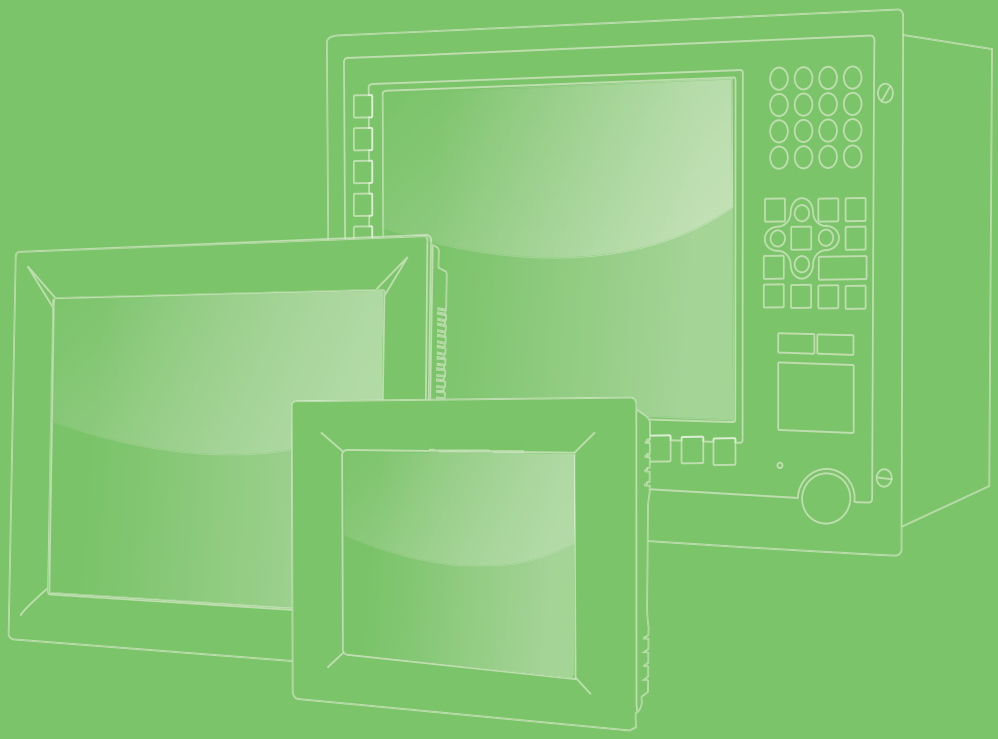

User Manual

IPPC-9151G

Rugged Industrial Panel PC with Intel® Core™ i7/i5/i3 Celeron and 15" XGA TFT LCD LED Backlight and One PCIE Slot

IPPC-9171G

Rugged Industrial Panel PC with Intel® Core™ i7/i5/i3 Celeron and 17" SXGA TFT LCD LED Backlight and One PCIE Slot

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Enabling an Intelligent Planet

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Printed in China December 2011

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

Warning! *Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.*

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Support and Assistance

1. Visit the Advantech web site at http://support.advantech.com where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

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Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated into the equipment.
    - The equipment has been exposed to moisture.
    - The equipment does not work well, or you cannot get it to work according to the user's manual.
    - The equipment has been dropped and damaged.
    - The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

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Chapter 1

General Information

This chapter provides a general description of the IPPC-9151G/ 9171G.

Sections include:

- Introduction
- Specifications
- Dimensions

1.1 Introduction

The IPPC-9151G/9171G industrial panel PC is especially designed to fit in space-limited environments where expansion is restricted.Its solid structure enables systems to operate under harsh industrial conditions.

Sturdy structure

The whole system is protected by a firm solid structure. The front panel is made of sturdy aluminum. It is shock resistant, and complies with NEMA4/IP65.The stainless steel case (SUS304) on the rear side is rugged and corrosion resistant, and enables the system to operate reliably in even the harshest environments.

Economical

AIMB-272 Motherboard supports Intel® Core™ i7, i5, Celeron mobile processors.IPPC-9151G/9171G's motherboard AIMB-272 supports Intel® Core™ i7, i5, Celeron mobile processors + Intel® QM67 chipset, which is an economical and powerful platform.Its reliable performance will ensure the system to run properly in industrial environments.

Friendly HMI

Systems in the IPPC-9151/9171 series are equipped with a 15" & 17" LCD LED backlight, which provides high resolution display quality. The result is vivid, bright, and sharp quality images.The panel PC is perfectly suited for Windows OS.The touchscreen version enables simple operation, making the Panel PC a solid industrial digital controller interface.

Rich I/O Ports

IPPC-9151G/9171G has rich I/O ports, supporting external display expansion.

1.2 Specifications

1.2.1 General

- **Dimensions (W x H x D):**
  - IPPC-9151G: 428 x 310 x 96.5 mm (16.35" x 12.2" x 3.79")
  - IPPC-9171G: 482 x 354.8 x 98 mm (18.98" x 13.97" x 3.86")
- **Chassis:** Aluminum front frame complies with NEMA4/IP65. SUS304 stainless steel back case
- **Mounting:** Rack mounting and panel mounting

Note! *For an IPPC-9151GA the rack mounting kit should be ordered separately.*

- **Power supply:** 180W MTBF 100,000 hours
- **Input voltage:** 100-240 V_{AC}, 50/60 Hz, 4A
- **Output voltage:** +3.3 V @ 16.8 A, +5 V @ 12.0 A, +12 V @ 10.0 A
- **System Cooling Fan Dimensions (W x H x D):** 60 x 60 x 10.5 mm (2.36" x 2.36" x 0.41")
- **OS Support:** Windows XP/ Windows 7
- **Weight:**
  - IPPC-9151G:10.52 kg (23.19 lbs)
  - IPPC-9171G: 14 kg (30.86 lbs)

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1.2.2 Standard PC Functions

- **CPU:** Intel® Core™ i7/i5/i3 Celeron Æ µFC-PGA988 Core i7-2710QE 2.1 GHz/ Core i5-2510E 2.5 GHz/Core i3-2330E 2.2 GHz/Celeron B810 1.6GHz Mobile Processors
- **RAM:** Up to 8 G in 2 204-pin SODIMM sockets, supports DDR3 1066/1333 SDRAM (2 x 4 GB)
- **Keyboard and mouse ports (PS2):** Supports one PS2 port (for keyboard and mouse)
- **Storage:**
  - CFast: Supports one CFast
  - HDD: Supports one 2.5" SATAII or SATA III HDD
- **Watchdog timer:** 60-level, interval 1 ~ 60 seconds.Automatically generates system reset when the system stops due to a program error or EMI.
- **Battery:** 3.0 V @ 195 mA lithium battery
- **Expansion slots:** One PCIe slot and one PCIe x16 slot for 1 x PCIe x1 or x4 (Gen 2) add-on card

1.2.3 I/O Ports

- **Serial ports:** Four RS-232 ports (COM1, COM2, COM3, COM4)
- **Ethernet Ports (LAN):** Supports two GbE LAN ports
  LAN1: Intel 82579LM; LAN2: Intel 82583V
- **Audio interface:** Supports one line-in, one line-out and one mic-in
- **VGA interface:** Supports one standard 15-pin D-SUB port
- **HD HDMI interface:** Supports one standard HDMI port
- **LVDS:** Default LVDS
  - - IPPC-9151G: Supports 1024 * 768, 24bit
  - - IPPC-9171G: Supports 1280 * 1024, 48bit
- **Universal serial bus (USB) port:** Supports five USB (version 2.0) ports, four one the rear panel and one on the front panel

1.2.4 Flat Panel Interface

- **Display type:** Simultaneously supports CRT + LVDS or HDMI + CRT or LVDS + HDMI
- **Display resolution:**
  - IPPC-9151G: 1024 * 768 24-bit
  - IPPC-9171G: 1280 * 1024 48-bit

1.2.5 Analog Resistive Touchscreen

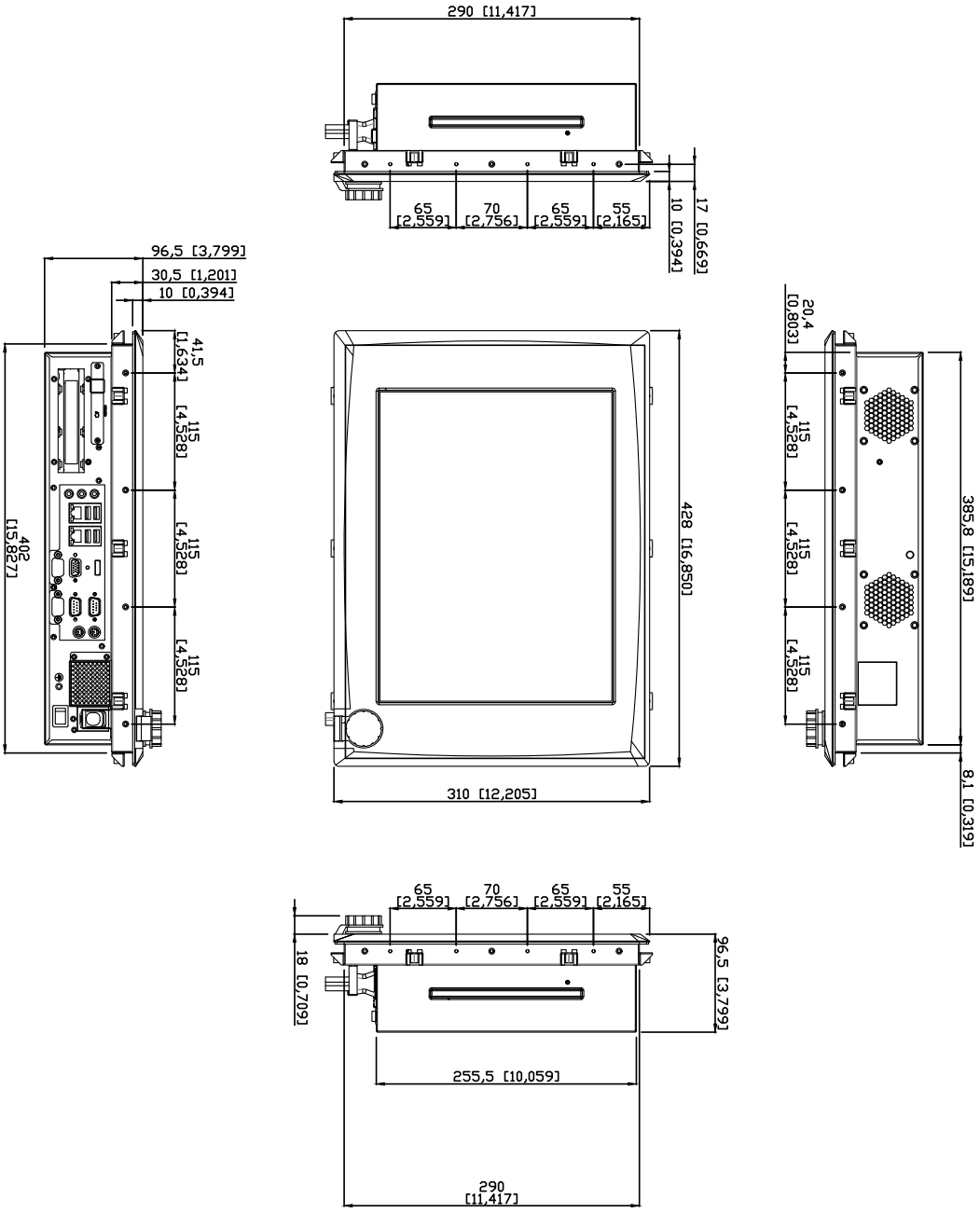
- **Type:** Analog resistive
- **Light Transmission:** >80%
- **Controller:** USB interface (use USB5)
- **Resolution:** 2048 x 2048

1.2.6 Environmental

- **Operating temperature:** 0 ~ 50°C(32 ~ 122°F)
- **Storage temperature:** -20 ~ 60°C(-4 ~ 140°F)
- **Relative humidity:** 10 ~ 90% @ 40°C (non-condensing)
- **Shock:** 30 G peak acceleration (11 ms duration)
- **Power MTBF:** 100,000 hrs

- **Certifications:** CE, CCC, FCC Class A; meets UL, BSMI

1.3 Dimensions



Panel Cut-out Dimension: 404 mm (15.90") x 292 mm (11.49")

Figure 1.1 IPPC-9151G Dimensions

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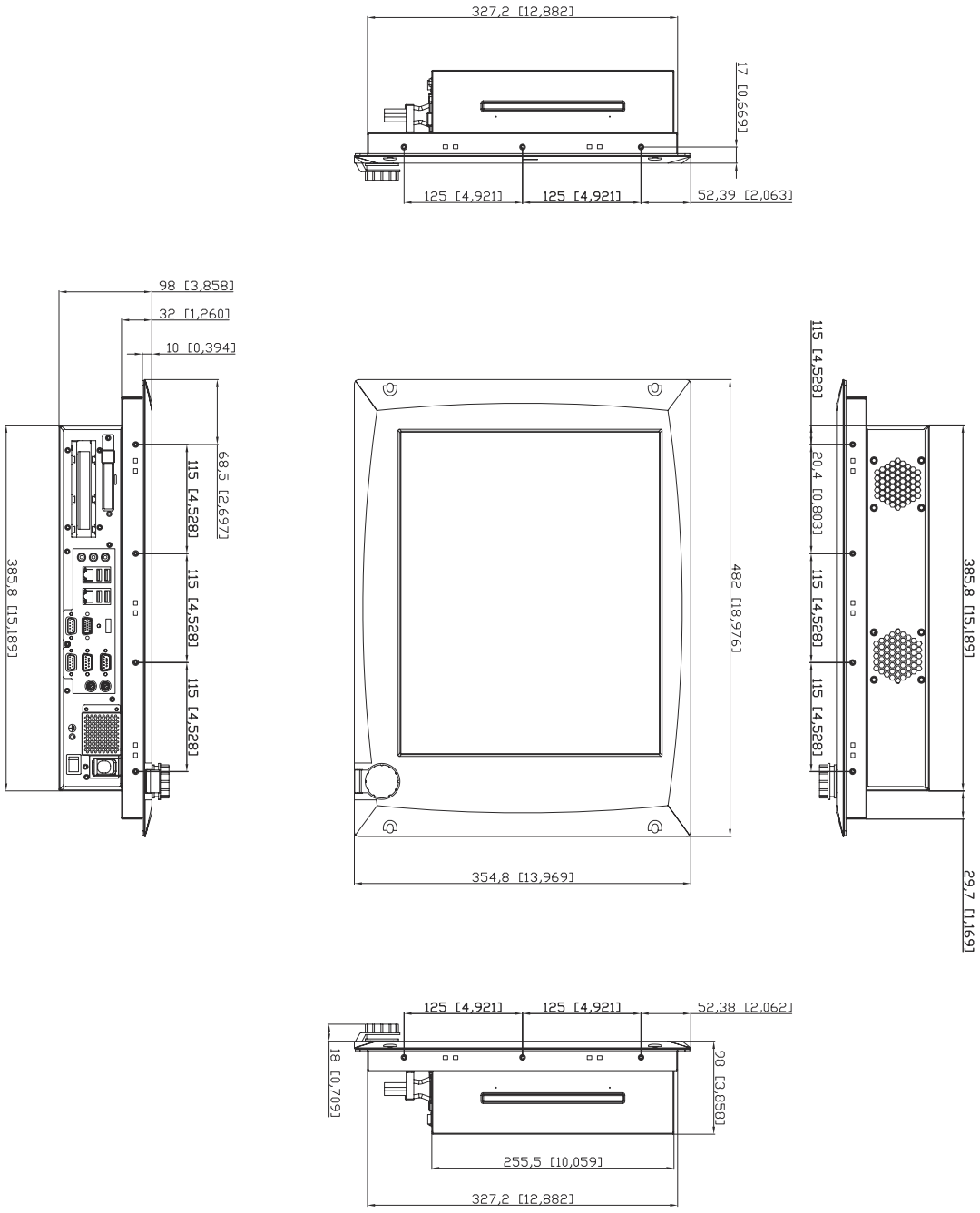

Panel Cut-out Dimension: 447 mm (17.618") x 329.50 mm (12.972")

Figure 1.2 IPPC-9171G Dimensions

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Chapter 2

System Setup

This chapter details system setup for the IPPC-9151G/9171G Series.

Sections include:

- A Quick Tour of IPPC-9151G/9171G
- Installing CPU
- Installing Memory Card
- Installing PCIe Card
- Installing CFast Card
- Installing HDD
- Mounting Instructions
- Jumpers and Connectors

2.1 A Quick Tour of IPPC-9151G/9171G

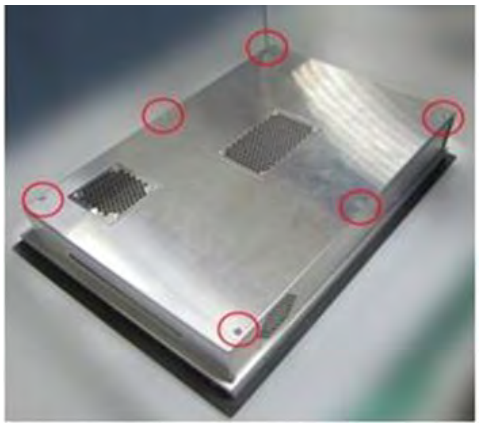
Before you start the computer, please follow these procedures to set up the system.

1. Connect the wires, cables and accessories.
2. Mount the computer.
3. Install an operating system.

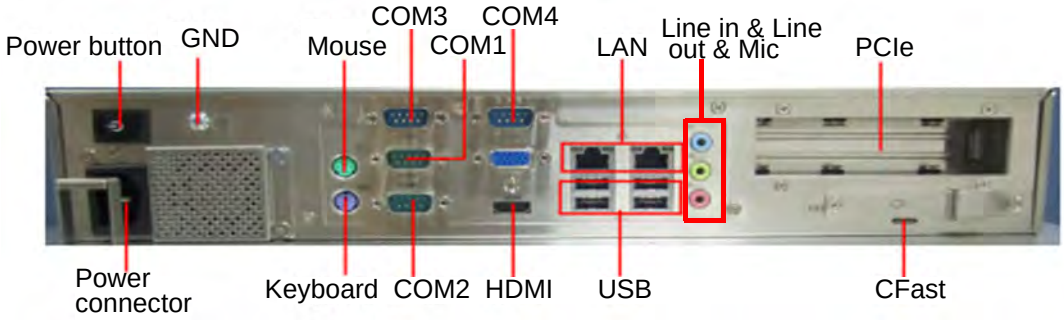
Warning!

1. *Switch off and unplug the computer every time you access its interior.*
2. *The motherboard inside the system is composed of many delicate ICs, chips and other integrated circuit components. These components are easily damaged by static shock.When you begin to install components:*
   - Avoid touching metal parts of the motherboard.
   - Wear an anti-static ring when handling a CPU or SDRAM module.
   - Put SDRAM modules and the CPU inside an anti-static bag or a similar place before installation.

1. Unscrew the six screws.



2. Remove the rear cover, refer to the below figure.



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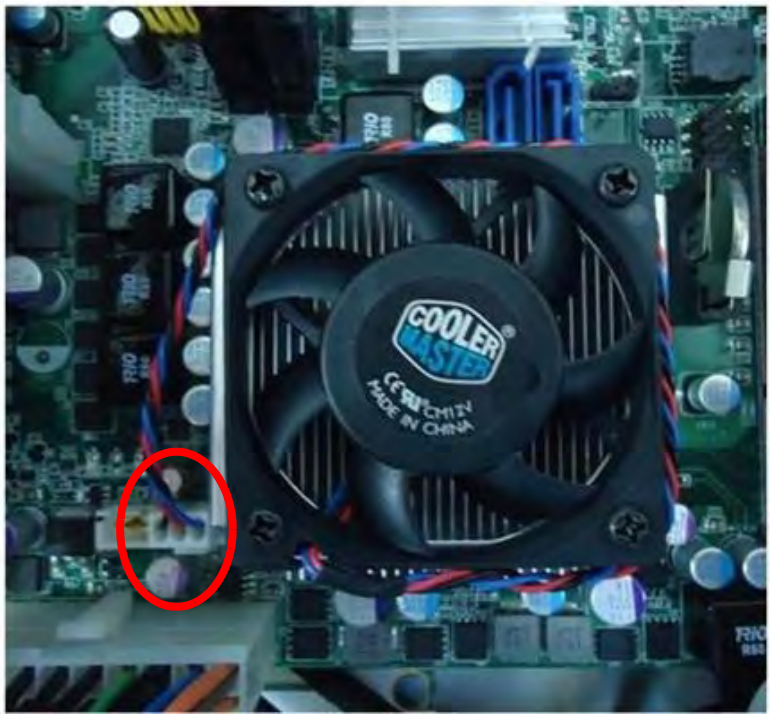
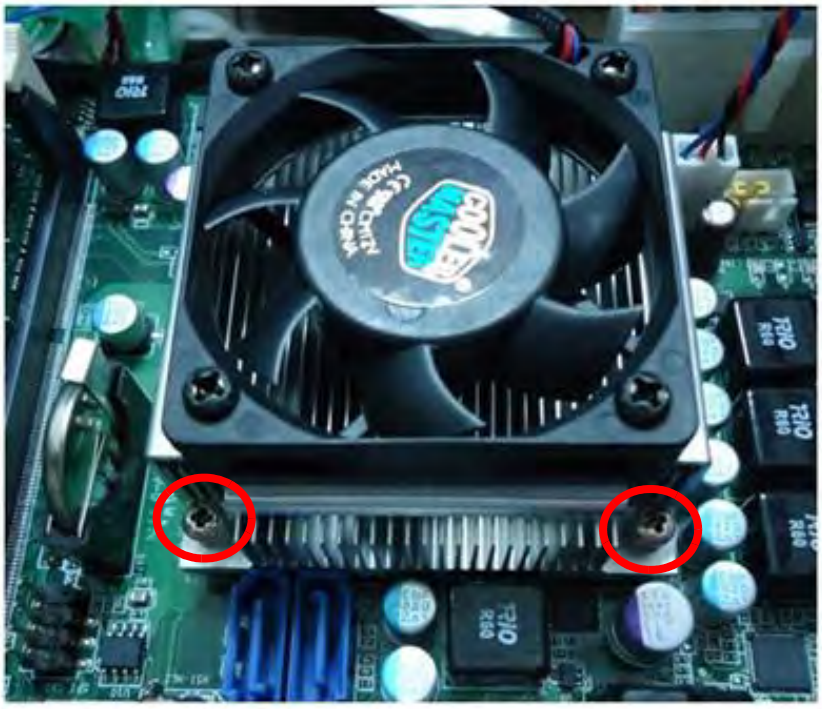
2.1.1 Installing CPU

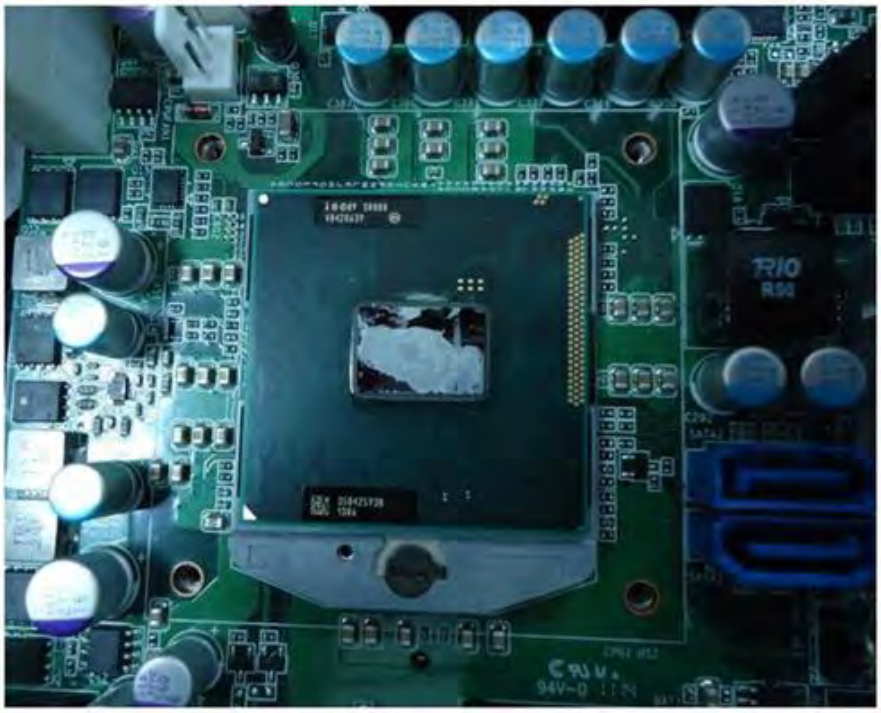
1. Unplug power cable of CPU fan.



2. Loosen four screws and take off CPU fan.



3. Take thermal grease out of the accessary box and apply evenly on CPU. Insert CPU into the socket (pay attention to the direction of both). Fasten the screws with screwdriver to secure the CPU.



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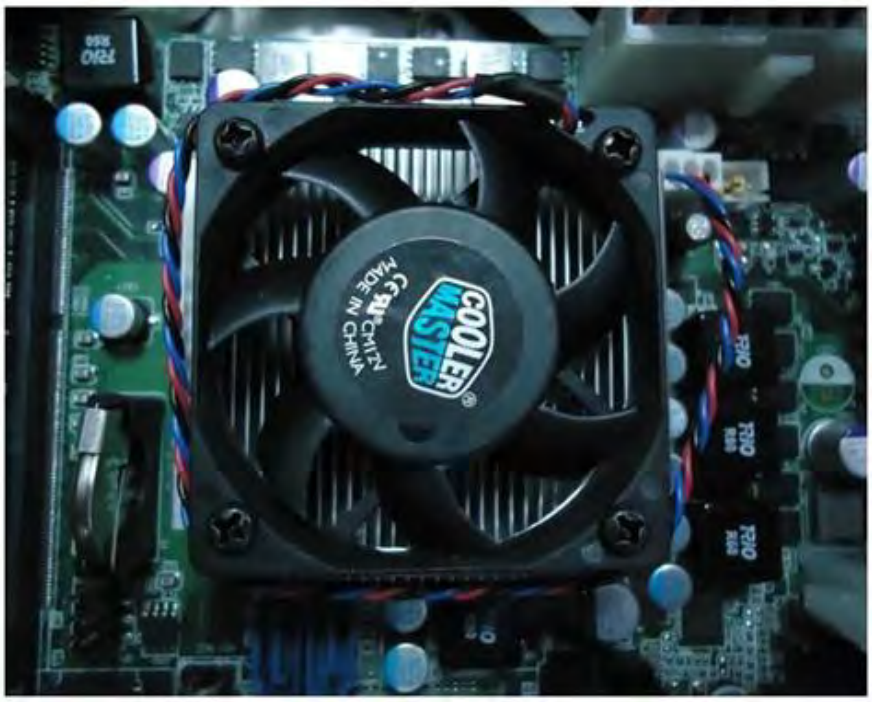
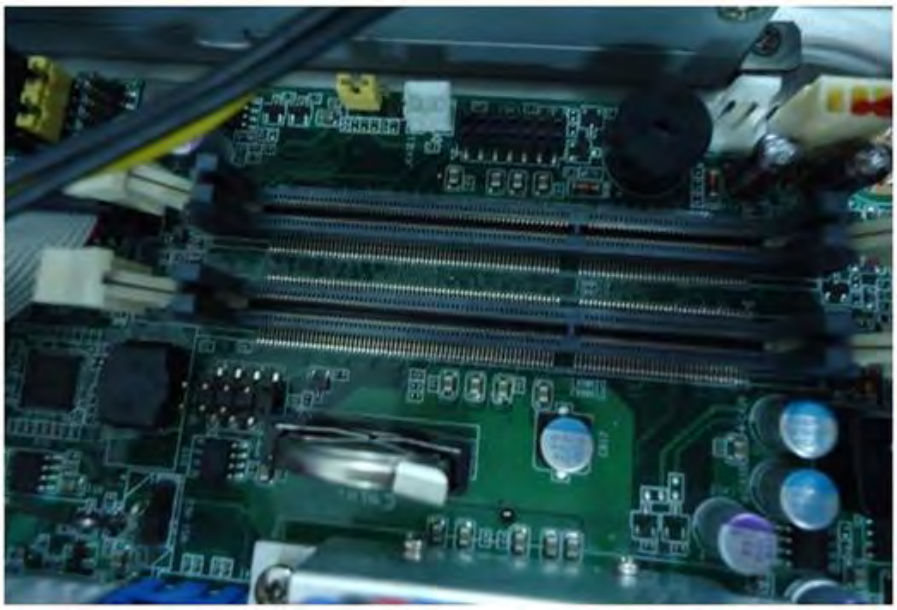
4. Re-install the CPU's cooling fan & then attach CPU fan power cable.

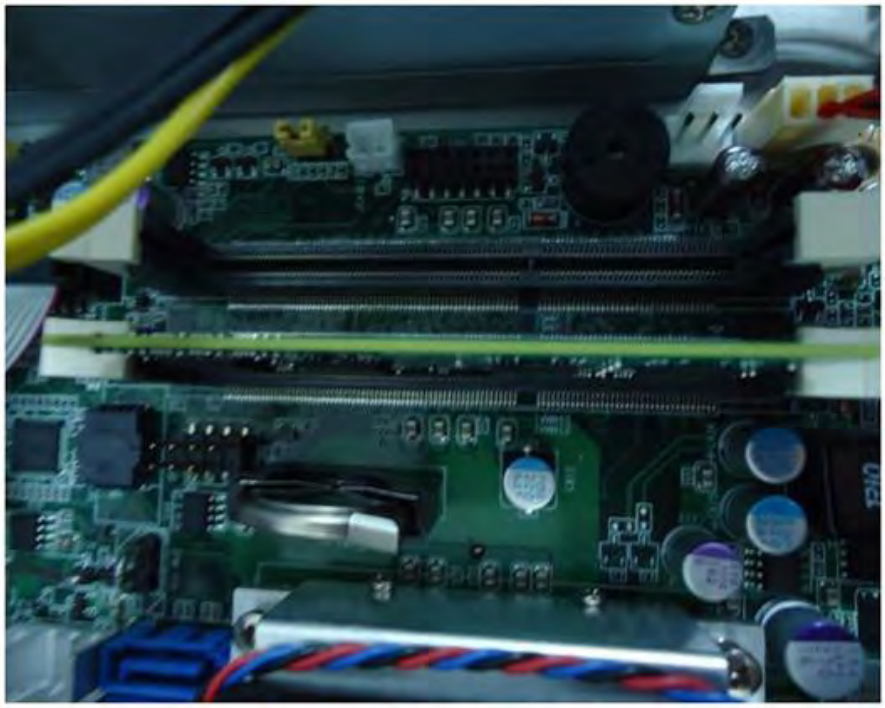


2.1.2 Installing Memory

1. Pull the two white eject levers of the ends of the memory socket. Note: select the first socket (DIMMA) if you only want to insert one memory card.

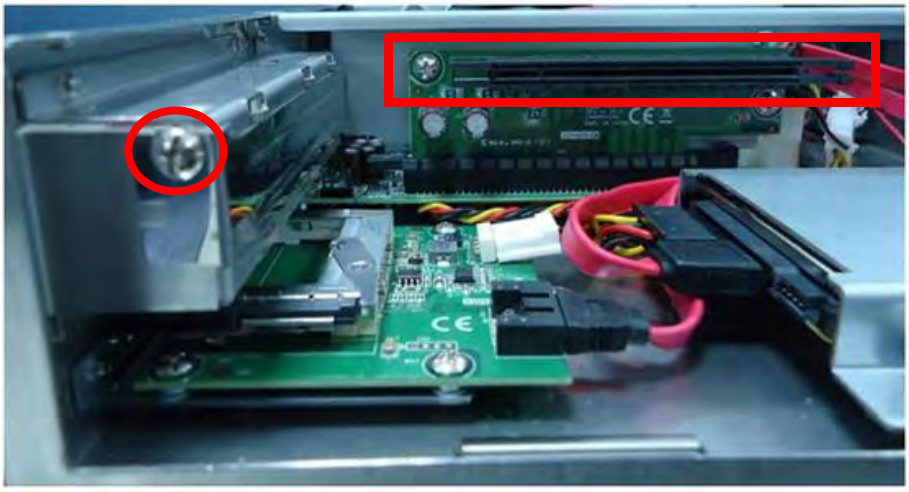


2. Insert the memory (pay attention to the direction of the memory into the socket. Push the two eject levers toward the vertical posts at each end of the socket until the module is upright.



2.1.3 Installing PCIe Card

1. Remove the screws on PCI cover, then insert PCIe card and fasten the screws.



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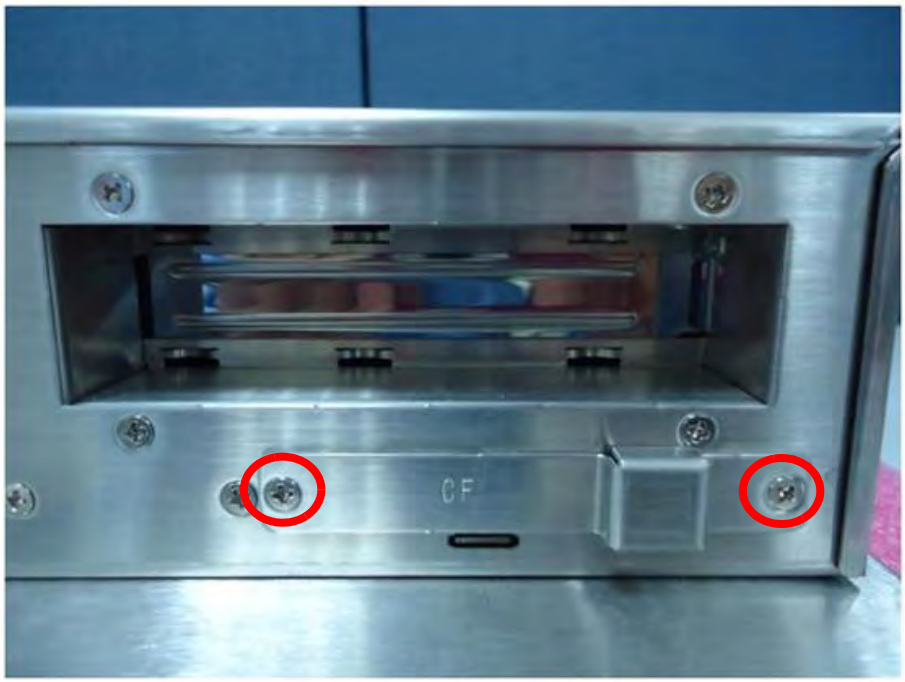
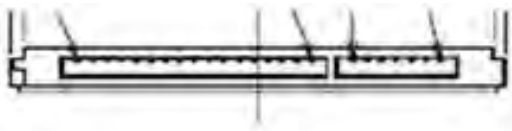
2.1.4 Installing CFast Card

1. Detach the two screws of CFast cover, then take off the cover.

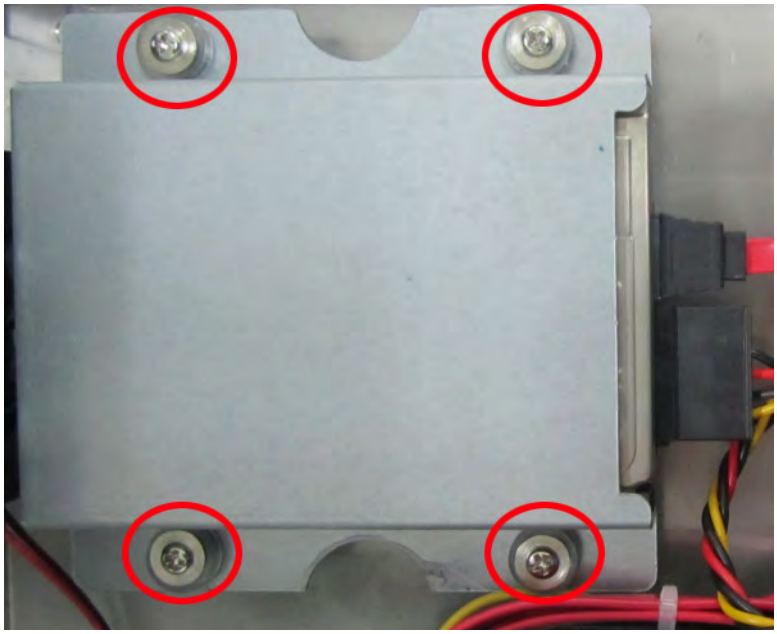


2. Insert CFast card (notice the direction of the CFast card), (the interior slot), then replace the cover.



2.1.5 Installing HDD

1. Remove four screws and remove the HDD bracket.



2. Take four M3 screws out of the accessary box and insert HDD into HDD bracket (pay attention to the direction of HDD).

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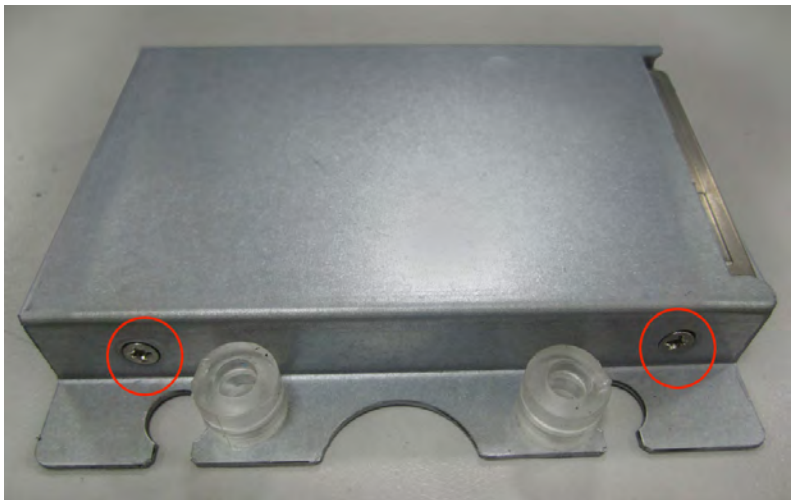
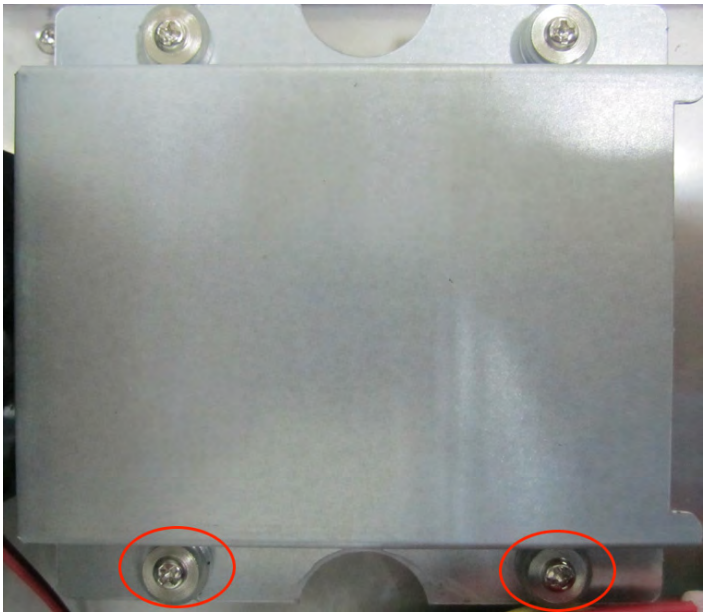
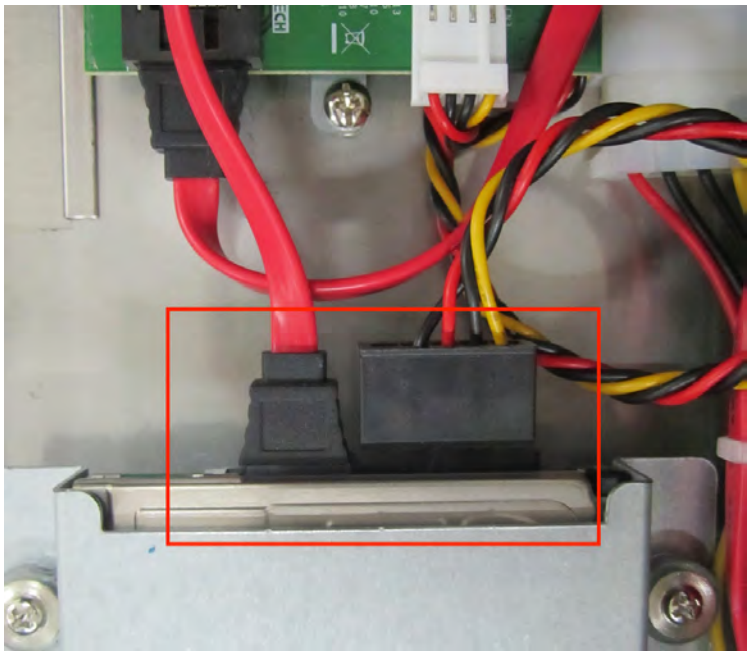


3. Put the HDD bracket into the chassis and fasten the four screws. Then attach the HDD flat cable and power cable.





2.1.6 Installing PS/2 Mouse and Keyboard

Attach the PS/2 keyboard and mouse adapter to the chassis (pay attention to the direction of the keyboard and mouse).

2.1.7 Serial COM ports

There are four serial COM ports on the I/O section of the rear cover. You can easily attach a serial device according to the application requirements. Remember to refix the screws.

2.1.8 VGA Port

An external VGA-compatible device may be connected to the system via the 15-pin external port located on the bottom of the system unit. Remember to refix the screws after connecting any device via this port.

2.1.9 HDMI Port

An external HDMI device may be connected to the system. Pay attention to the direction of the port. Remember to fasten the screws to protect the data cable from loosing.

2.1.10 USB Port

An external USB device may be connected to the system via the 4 USB ports located on the bottom side of the system unit and one on the front panel.The USB ports support hot plug-in connection.For high-power USB device, use an external power supply.

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2.1.11 Ethernet

Connect the Ethernet cable to LAN port. Note: If the distance between the network cable and the device is to far it will result in the network cannot be connected. Add a HUB to enhance the network signal as needed.

LAN LED Indicators:

LAN mode	LAN LED	
LAN1 LED	LED1 (right)	Off when connection error occurs; Linked (On)/ Active (Blinking)
	LED2 (left)	100 Mbps(On)/10 Mbps (Off)
	LED2 (left)	1000 Mbps (On)
LAN2 LED	LED2 (right)	Off when connection error occurs; Linked (On)/ Active (Blinking)
	LED2 (left)	100 Mbps(On)/10 Mbps (Off)
	LED2 (left)	1000 Mbps (On)

2.1.12 Connecting Audio Device

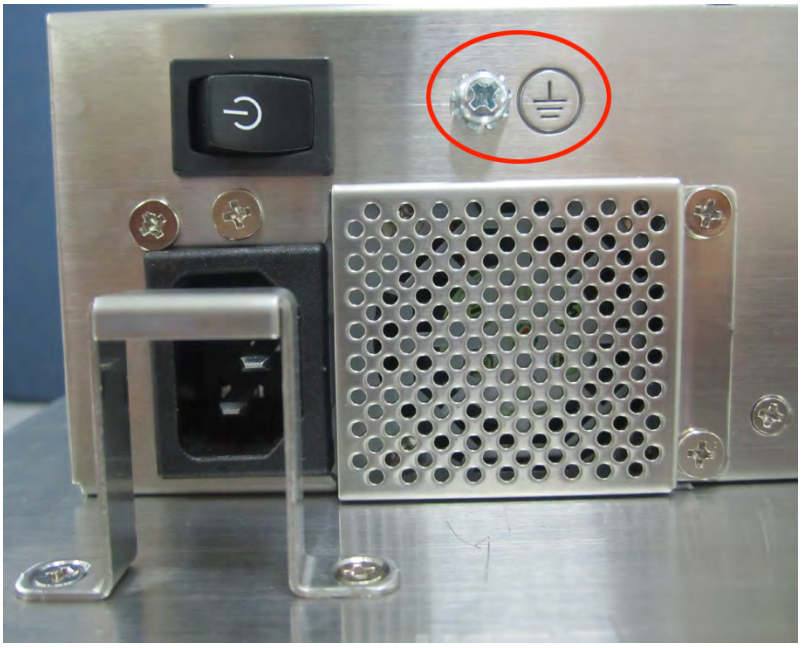
The audio interface includes three jacks: line-in, line-out and Mic-in. Attach the device when needed.

2.1.13 Connecting Power Cord

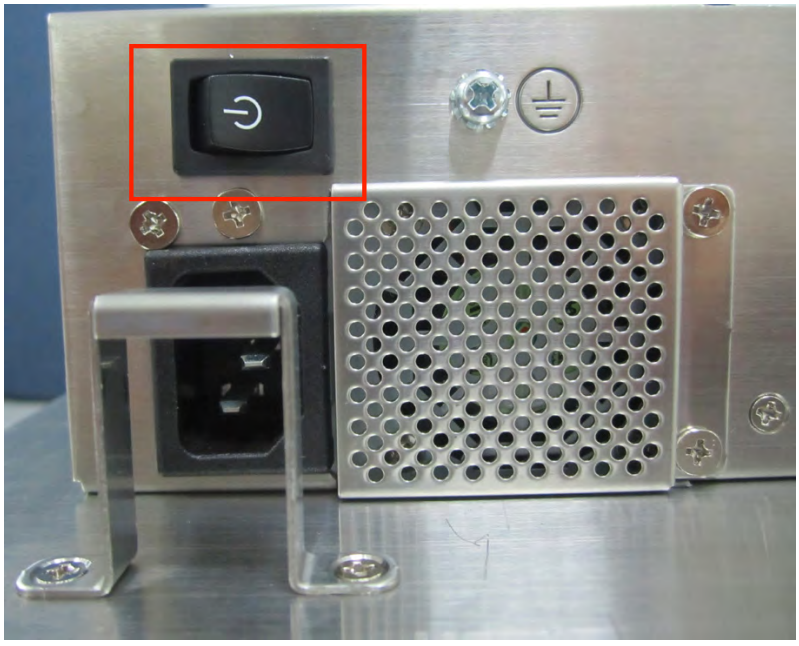
Remove the power cord bracket, then plug in the standard power cord. Replace the bracket and fasten the screws. Note: Pay attention to the input voltage of the power supply.

2.1.14 Ground Connection

For the safety of the operator and the device, connect the ground wire.
Location of the ground wire:



2.1.15 ATX Power On Switch



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2.2 Mounting Instructions

There are two ways to mount the system: panel mounting or rack mounting.

2.2.1 Panel Mounting

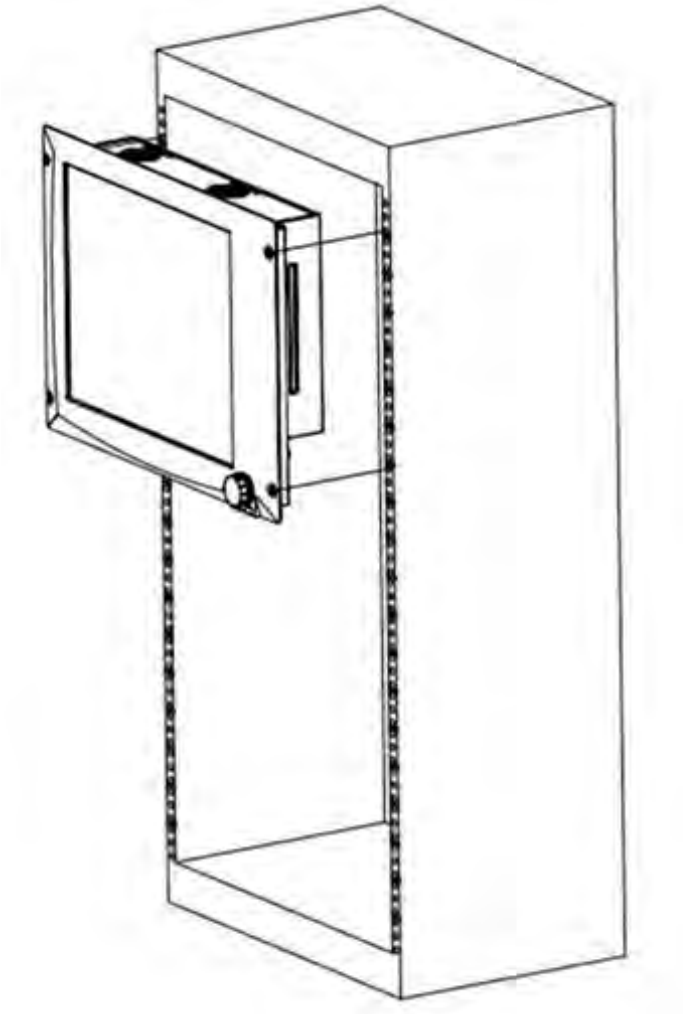
1. Take the four mounting brackets out of the accessory box.
2. Attach the four mounting brackets by inserting the screws into the keyhole slots on the cover of the monitor.
3. Use the screws to secure the brackets to the cover. Tighten the screws to secure the monitor to the back panel.

Note! *Panel's maximum thickness is 5 mm.*

2.2.2 Rack Mounting

IPPC-9151G users can optionally order 19" industrial rack mounting kit. The part number is IPPC-9151G-R1MKE.

IPPC-9171G can be directly mounted to a 19" industrial rack. Remove the rubber on the panel.



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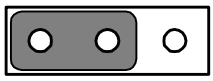
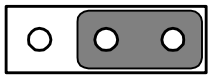
2.3 Jumper Settings and Connectors

2.3.1 Clear CMOS

Function	Jumper setting	
* Keep CMOS data		1-2 closed
* Clear CMOS data		2-3 closed

* Default

Note! *If password is set in CMOS, the above way can not clear the password. Only by refreshing BIOS can the password be cleared.*

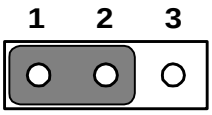
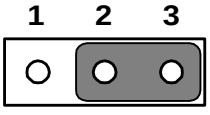
2.3.2 ATX and AT Mode

Table 2.1: PSON1: ATX, AT mode selection

Close Pins	Result
1-2	AT mode
2-3*	ATX mode

* Default

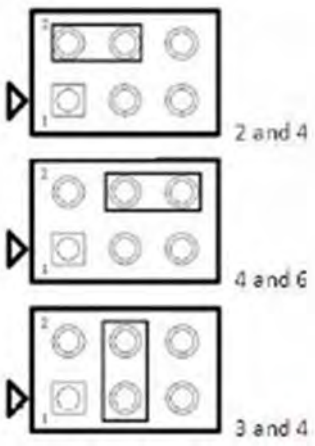
2.3.3 Control LVDS Backlight (JLVDS_CLT1) from SIO

Linear brightness control		1 and 2
PWM brightness control (default)		2 and 3

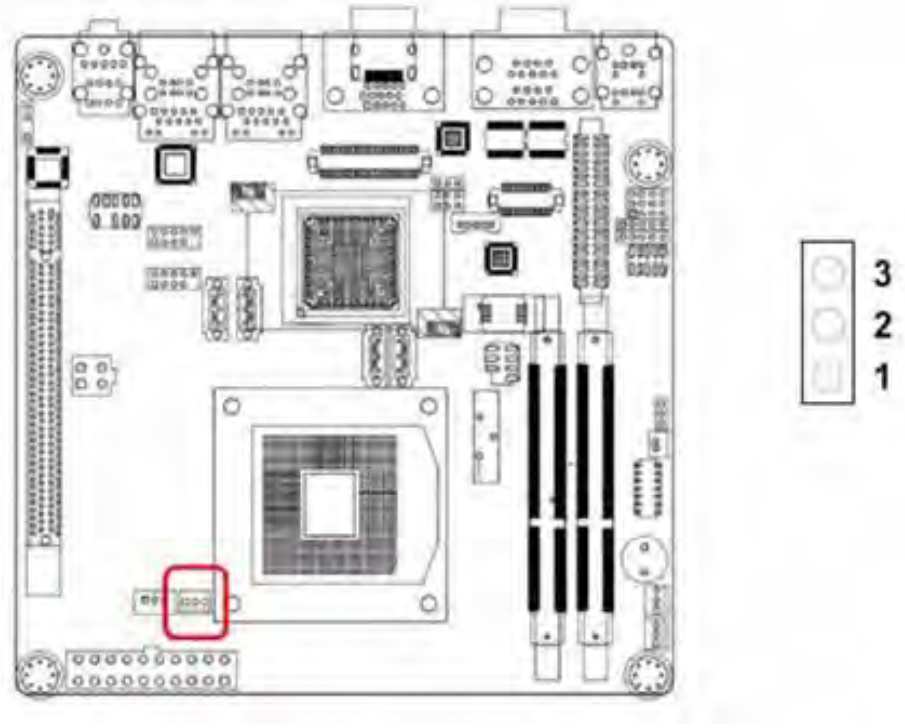
2.3.4 JLVDS1 Power Selector

- IPPC-9151G: Default 4-6, 3.3 V
- IPPC-9171G: Default 2-4, 5 V

Close Pins	Result
JLVDS1	
2-4	For jumpers of 5 V LVDS panel
4-6	For jumpers of 3.3V LVDS panel
3-4	For jumpers of 12 V LVDS panel



2.3.5 CPU Fan Connector (CPU_FAN1)



If a fan is used, this connector supports cooling fans of 500 mA (6 W) or less.

2.3.6 System Fan Connector (SYSFAN1/2)

Note! *System fan has no signal detection, so the fan speed will not show in CMOS.*

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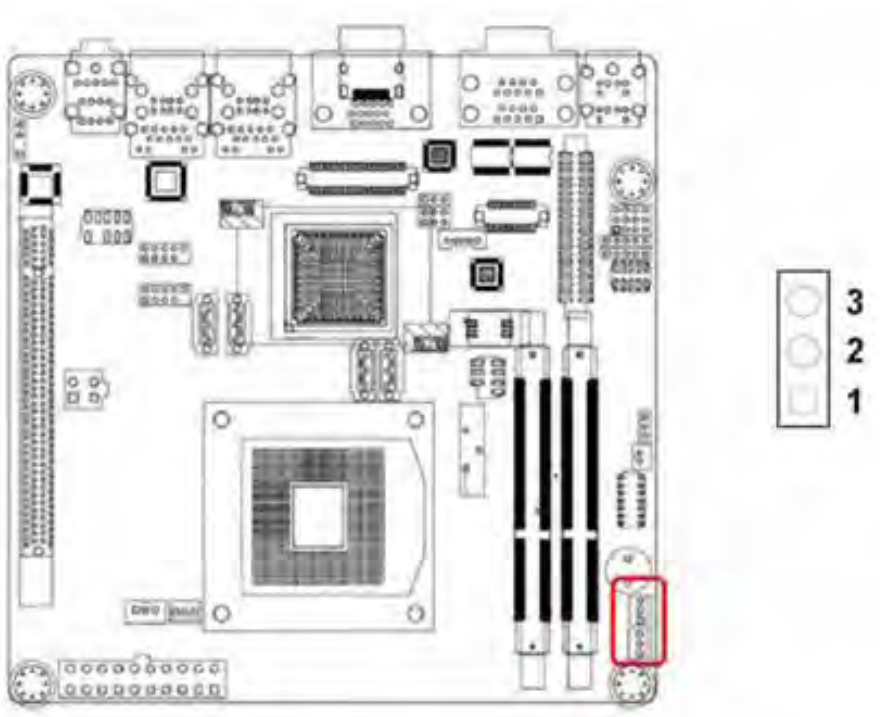
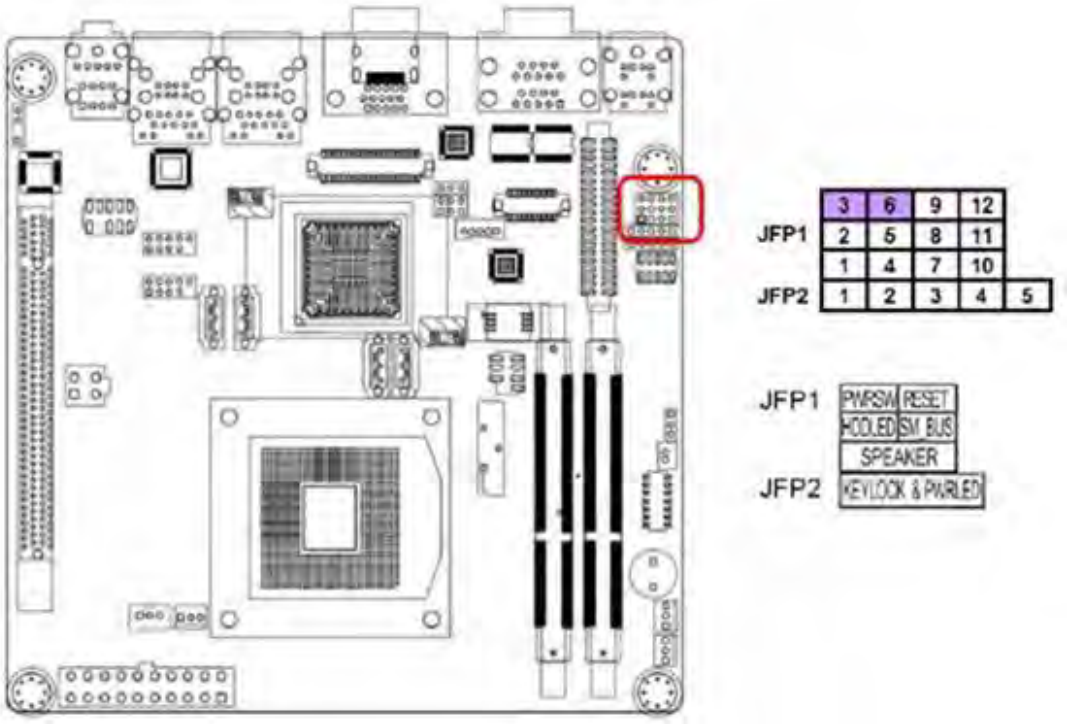


If a fan is used, this connector supports cooling fans of 500 mA (6 W) or less.

2.3.7 PWRSW (Power Switch Connector)

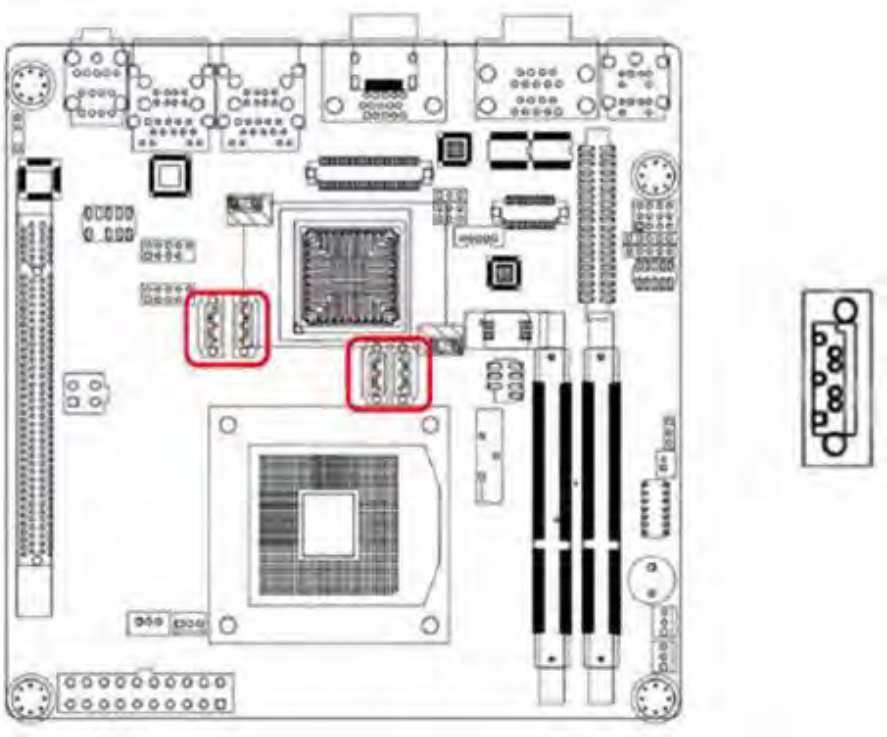
If your computer case is equipped with an ATX power supply, you should connect the power on/off button on your computer case to (JFP1/ PWR_SW).



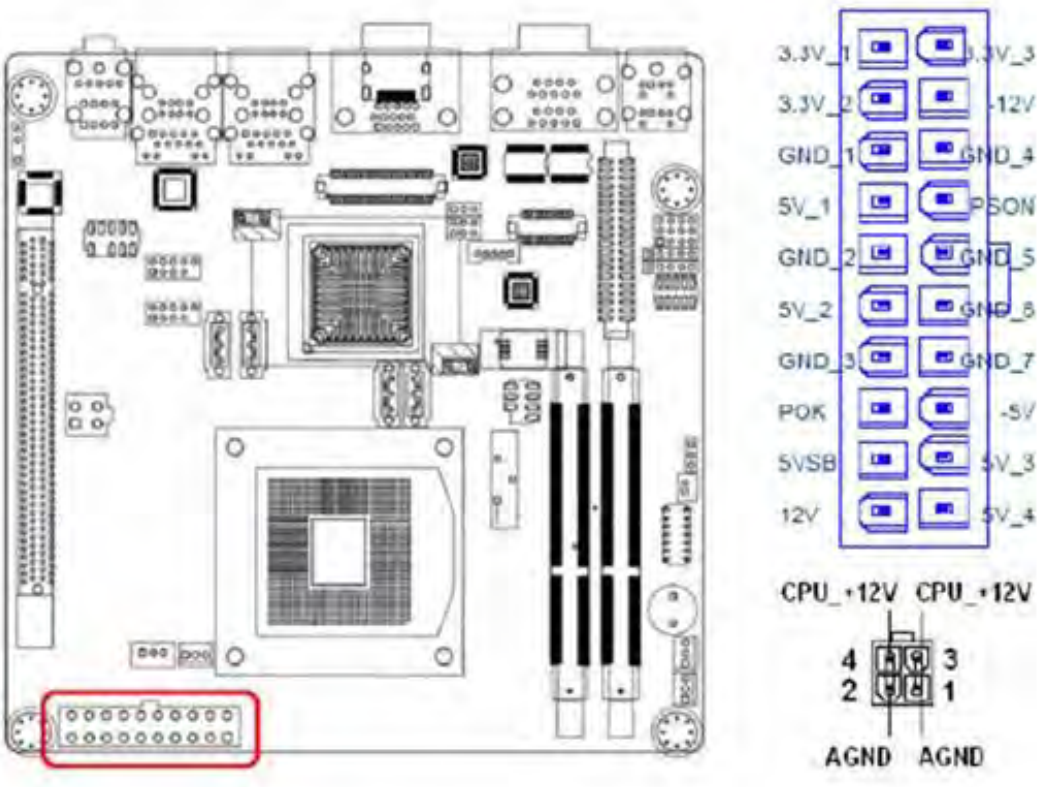
2.3.8 SATA Interface

The blue one is for SATA 3.0 interface(1.2), the black one is for SATA2.0 interface(3.4).

Default: SATA1 for HDD
SATA2 for CFast board.



2.3.9 ATX Power Connector (EATXPWR1, ATX12V1)



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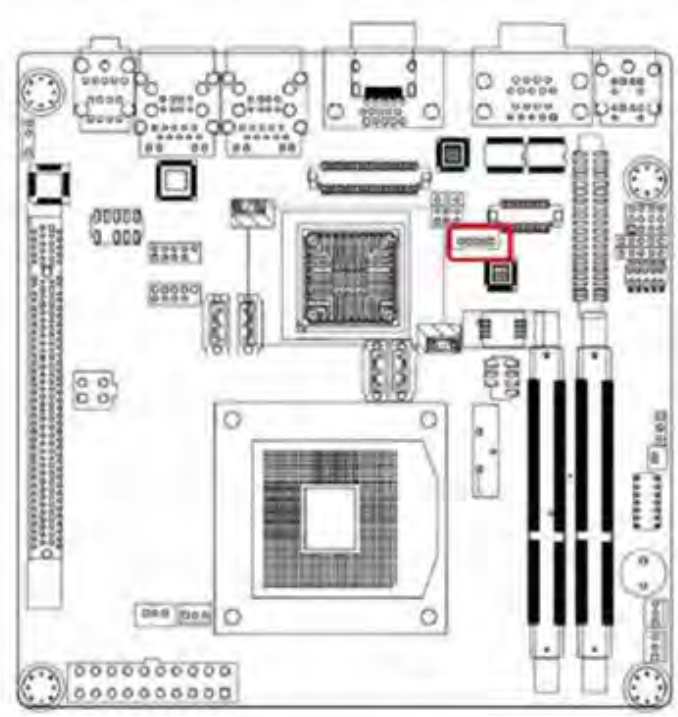
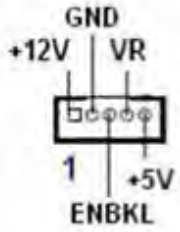
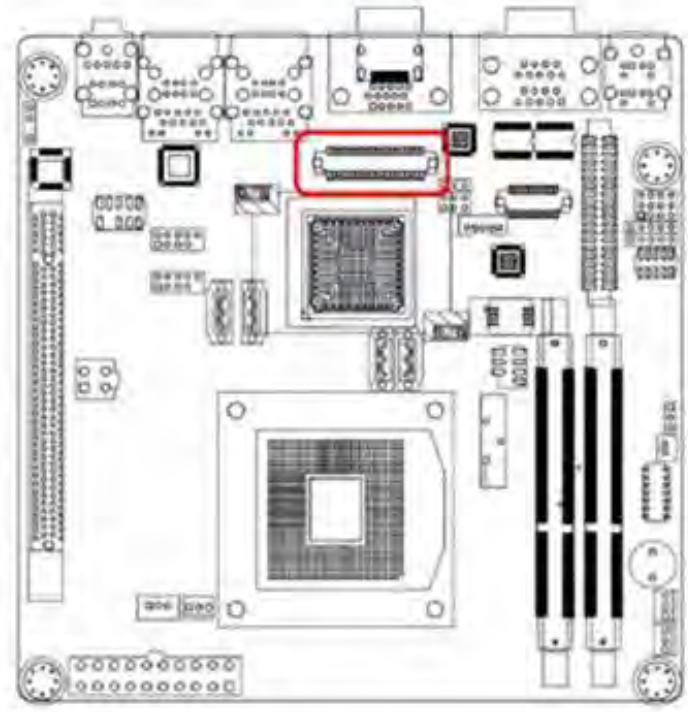
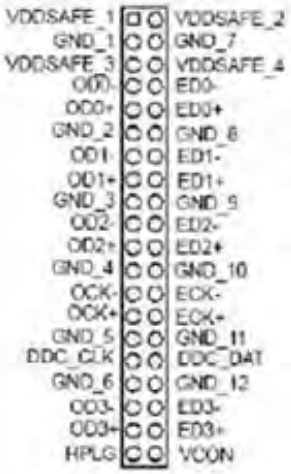
2.3.10 Display Backlight Connector (INV1)



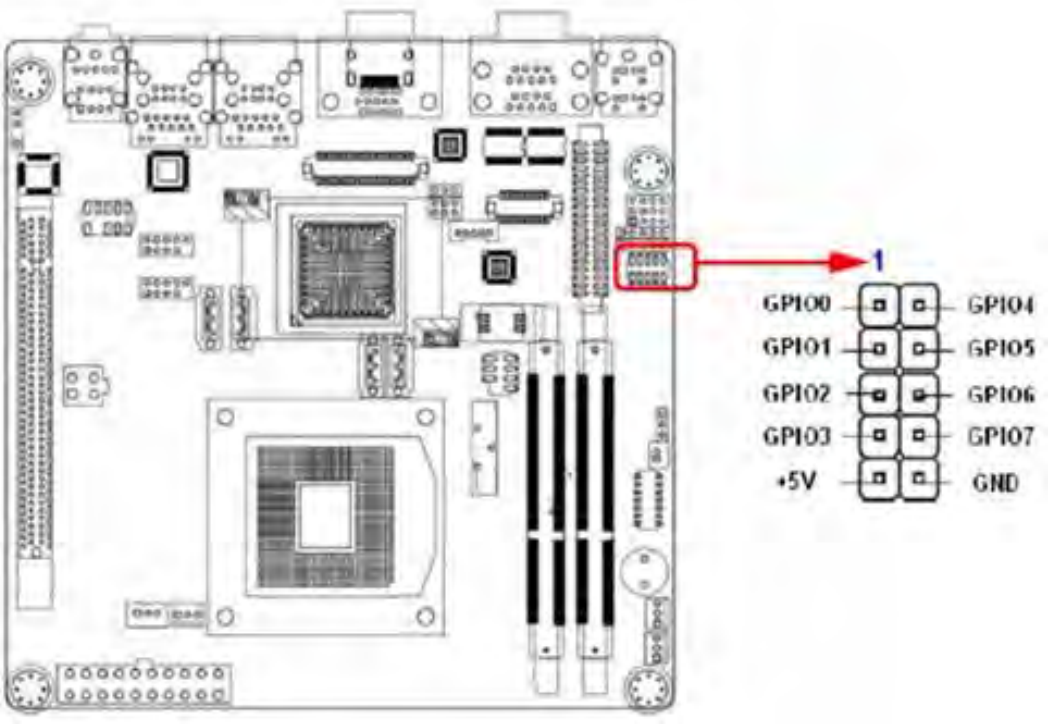


2.3.11 LVDS Port (LVDS1)





2.3.12 GPIO Port (GPIO1)



2.3.13 PCIe Slot

Note! *Intel QM67 chipset supports PCIe x16 slot (Gen 2.0), but it still has some compatibility issues with certain interface cards.*

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Chapter 3

BIOS Setup

3.1 BIOS Introduction

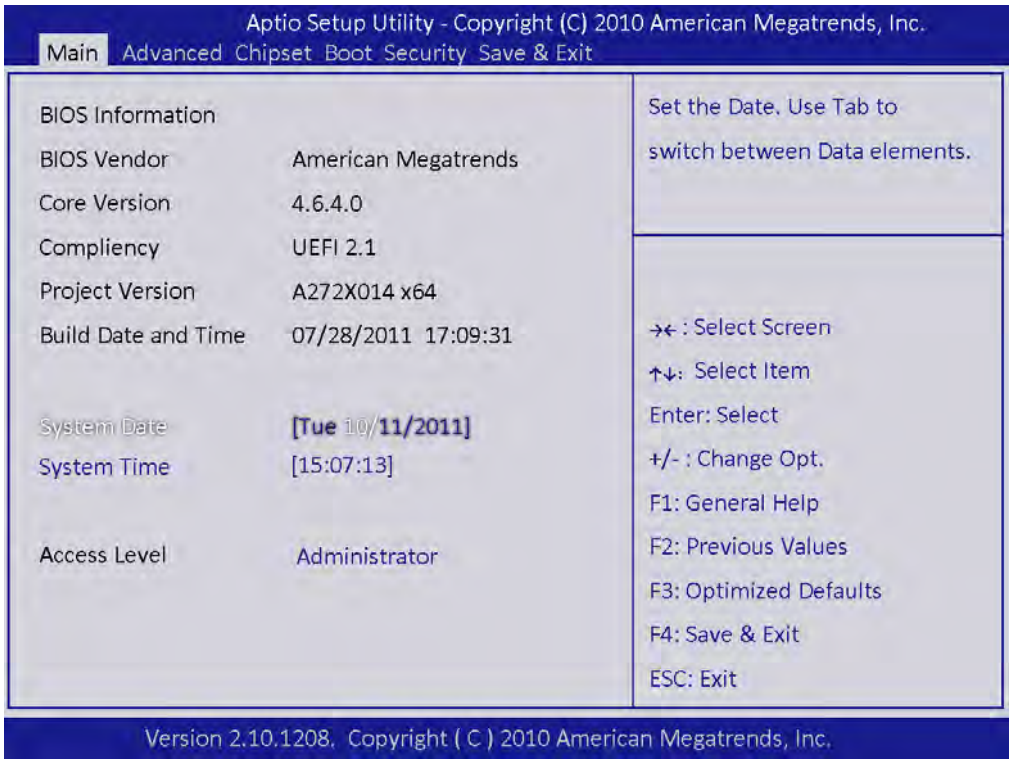
IPPC-9151G/9171G has AMI EFI 64 Mbit SPI BIOS, with a CMOS SETUP utility that allows users to configure required settings or to activate certain system features. When the power is turned on, pressing the <Del> button or F2 will take you to the CMOS SETUP screen.Functions of the control keys in CMOS screen:

→←	Move to selected screen
↑ ↓	Move to selected item
Enter	Select item
+/-	Change Opt.
F1	General help
F2	Previous values
F3	Optimized default
F4	Save and exit
ESC	Exit

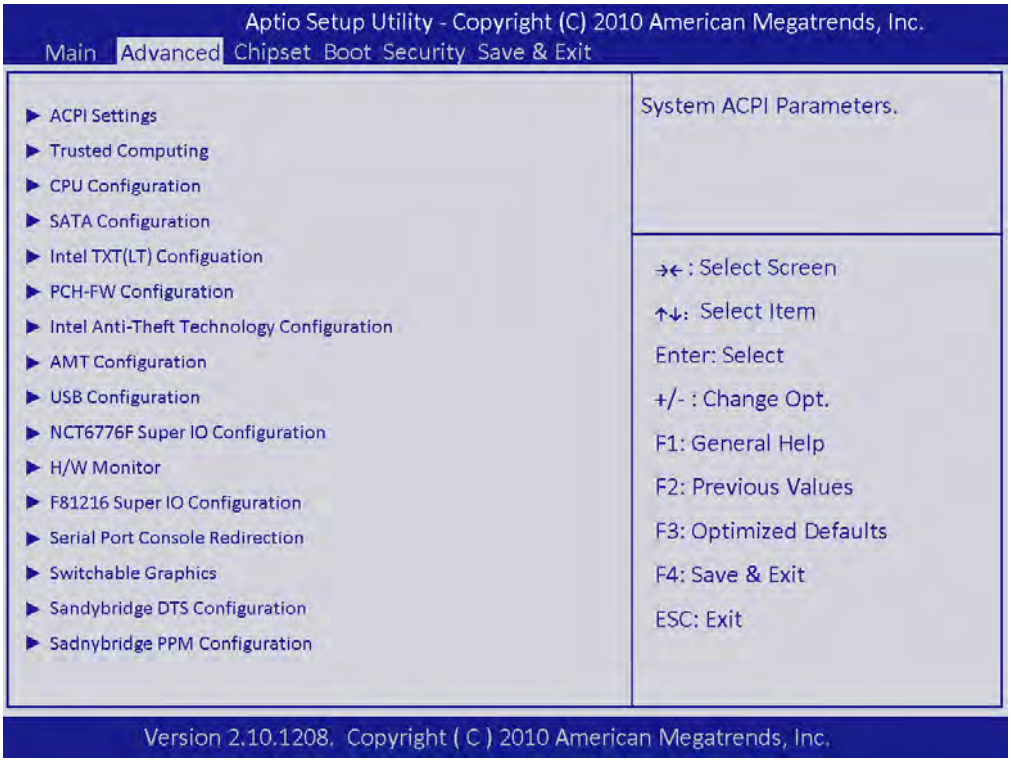
3.2 Main Menu

It displays information about BIOS version, etc. The user can use this option to change the system time and date.

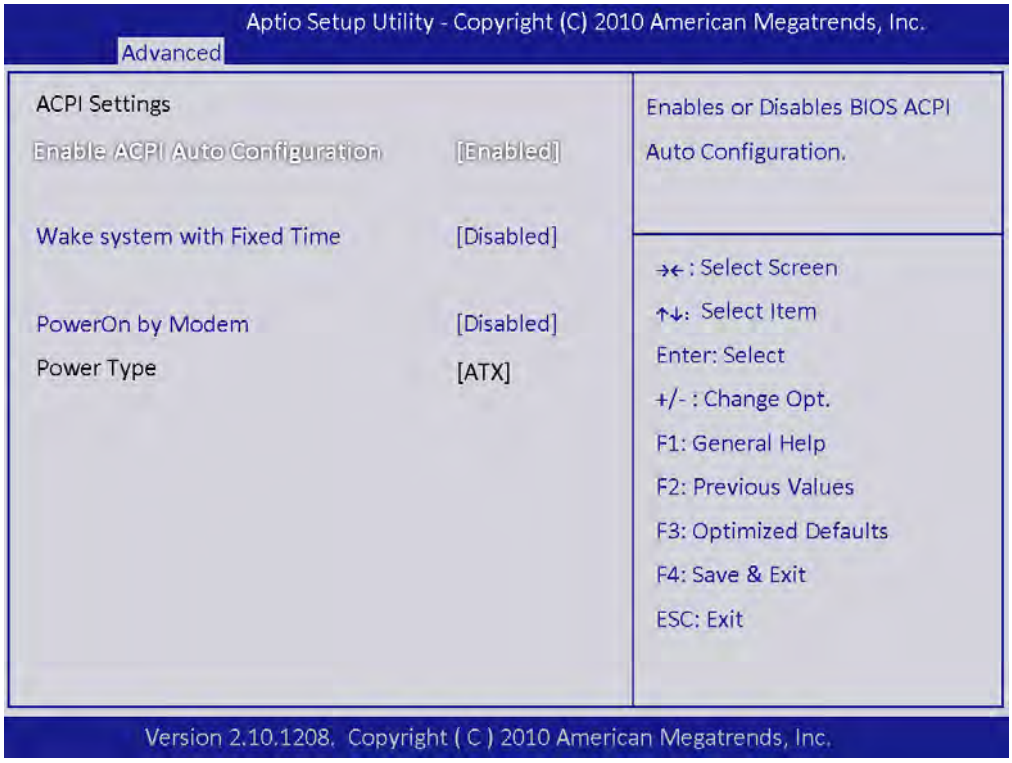
Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields.The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.



3.3 Advanced BIOS Features



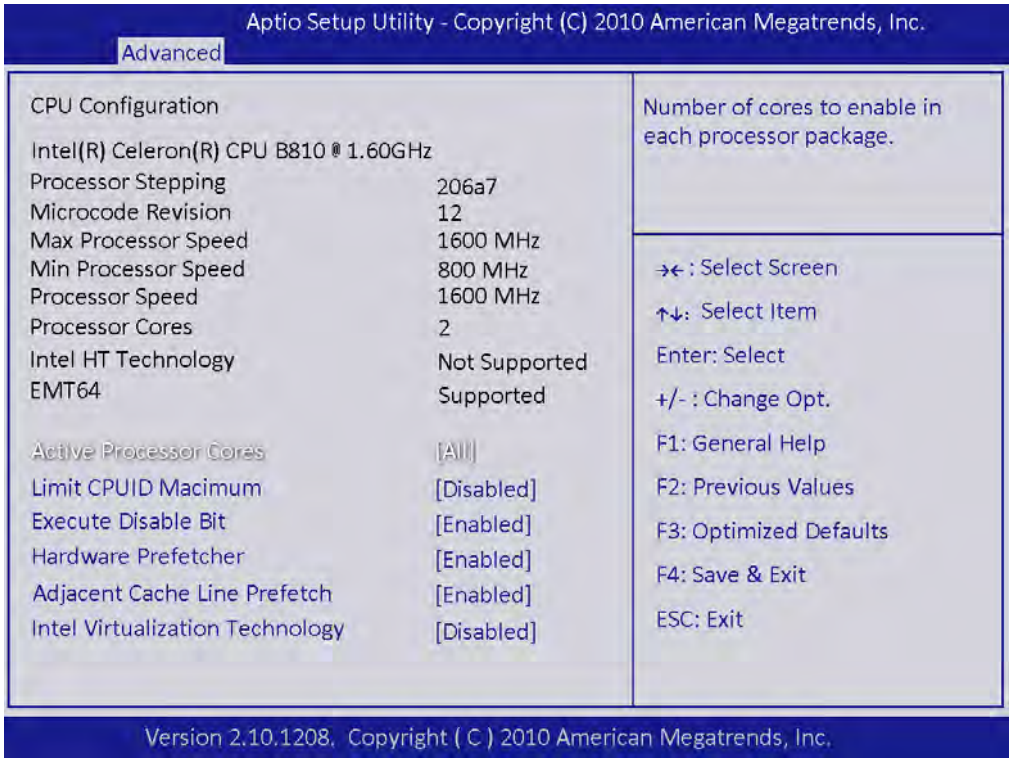
3.3.1 ACPI Settings



- **Enable ACPI Auto Configuration**
  The default setting is "Enabled".ACPI is short for Advanced Configuration and Power Interface.
- **Wake system with Fixed Time**
  The default setting is "Disabled".
- **PowerOn by Modem**
  The default setting is "Disabled".
- **Power Type**
  The power type is ATX. (This cannot be modified)

3.3.2 CPU Configuration

The information depends on CPU model.



- **Active Processor Cores [ALL]**
  Active multi-core processors. The default setting is “ALL”.
- **Limit CPUID Maximum [Disabled]**
  This item allows you to limit CPUID maximum value. The default setting is “Disabled”.
- **Execute Disable Bit [Enabled]**
  This item allows you to enable or disable the No-Execution page protection technology. The default setting is “Enabled”.
- **Hardware Prefetcher [Enabled]**
  Hardware detection. The default setting is “Enabled”.
- **Adjacent Cache Line Prefetch [Enabled]**
  This item allows users to enable or disable the adjacent cache line prefetcher feature. The default setting is “Enabled”.

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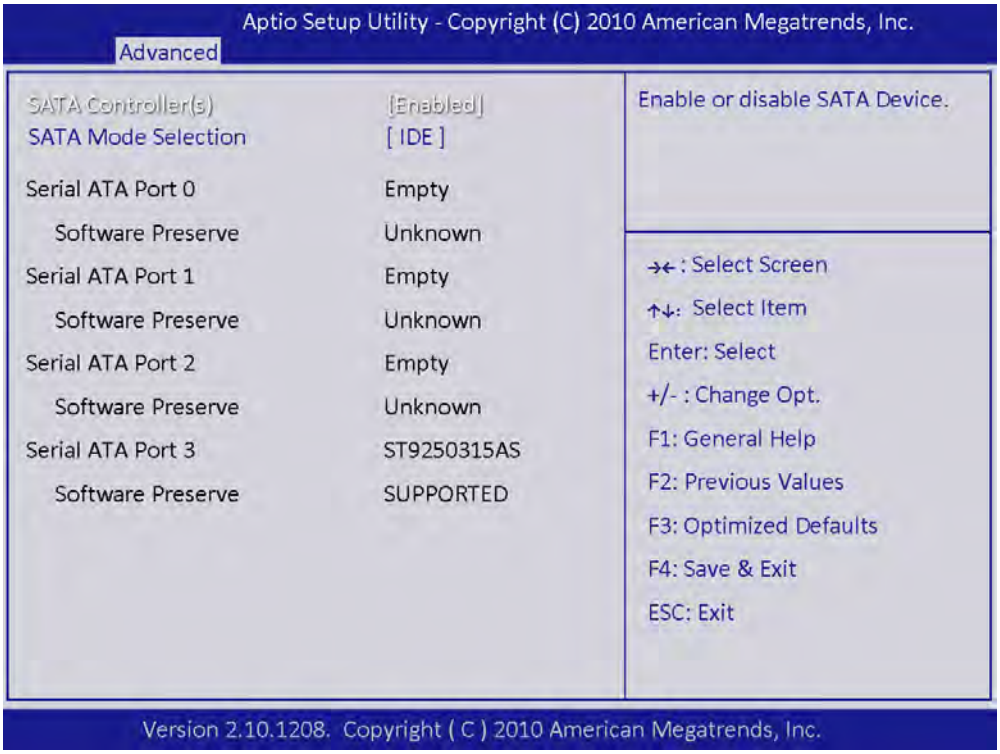
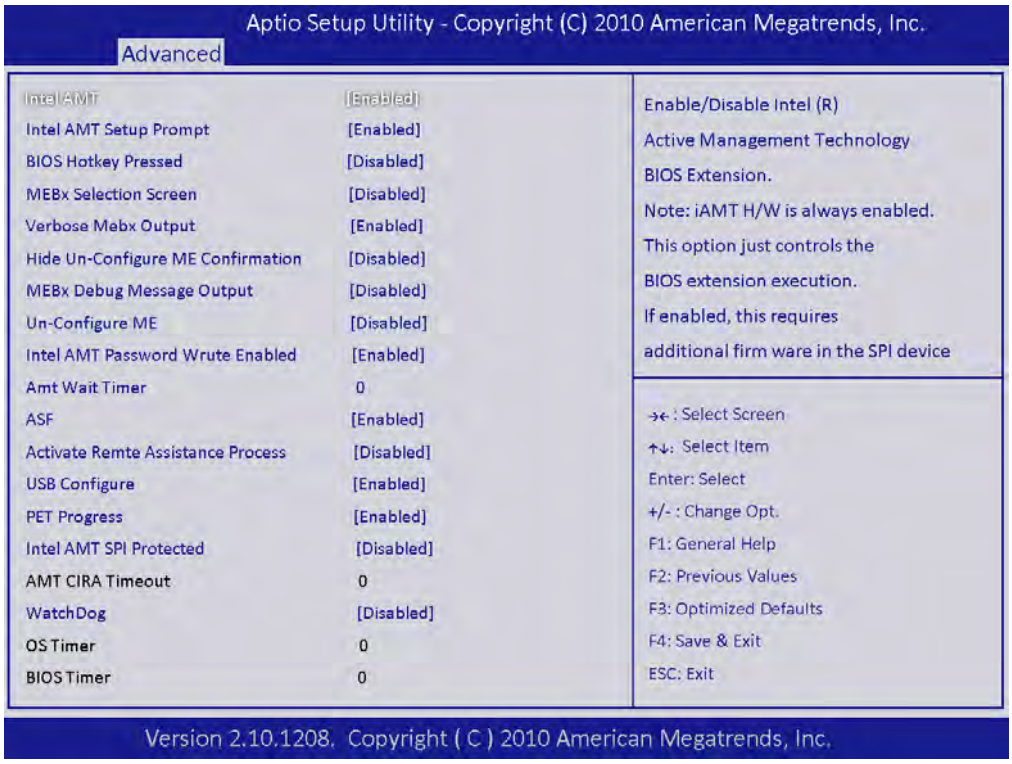
- **Intel Virtualization Technology [Disabled]**
  Intel Virtualization Technology (Intel VT) is a set of hardware enhancements to Intel server and client platforms that provide software-based virtualization solutions. The default setting is “Disabled”.
  You can enable or disable Intel Virtualization Technology as required

3.3.3 SATA Configuration



- **SATA Controllers**
  The default setting is “Enabled”.
  SATA mode cannot be selected if this item is disabled.
- **SATA Mode Selection**
  SATA Mode Selection. The default setting is “IDE”. It can be configured as other mode (IDE AHCI RAID) if required.
- **Serial ATA Port**
  Serial ATA Port displays all connected HDDs.

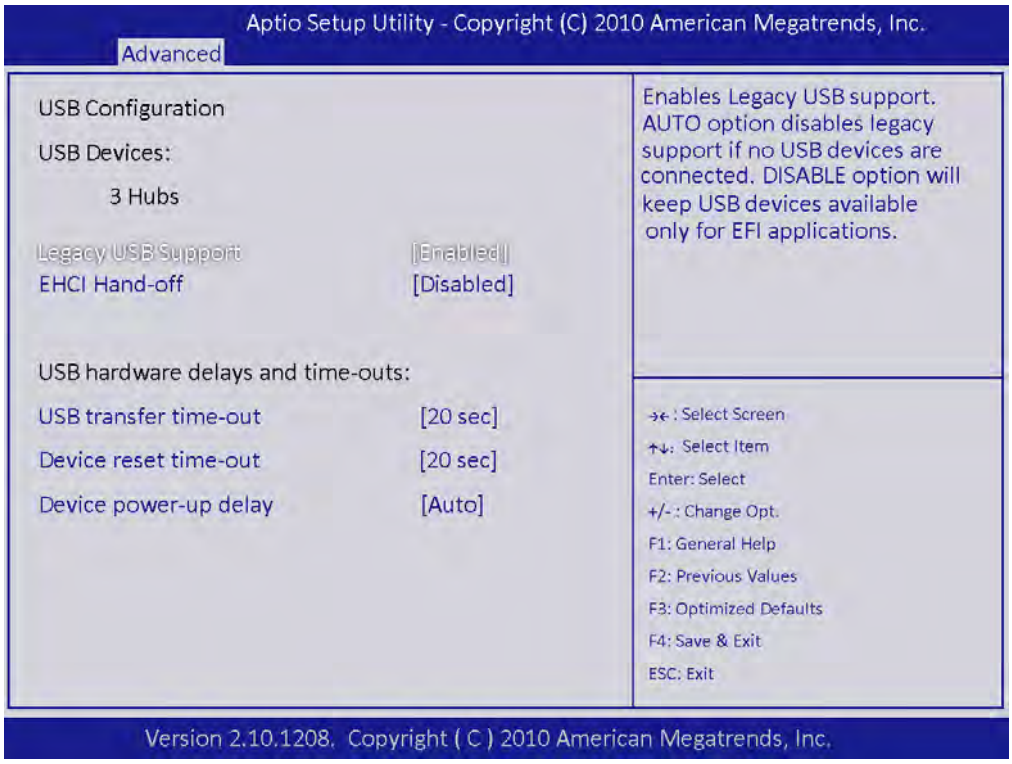
3.3.4 AMT Configuration



- **Intel AMT [Enabled]**
  The default setting is “Enabled”.
- **Intel AMT Setup Prompt [Enabled]**
  This item allows users to enable or disable Intel AMT Setup prompt. The default setting is “Enabled”.
- **BIOS Hotkey pressed [Disabled]**
  The default setting is “Disabled”.
- **MEBx Selection Screen [Disabled]**
  Intel Management Engine BIOS Extension (MEBx).This item allows users to enable or disable MEBx selection screen. The default setting is "Disabled".
- **Verbose Mebx Output [Enabled]**
  This item allows users to enable or disable MEBx Output. The default setting is “Enabled”.
- **Hide Un-Configure ME Confirmation [Disabled]**
  This item allows users to hide un-configured ME without password confirmation prompt. The default setting is “Disabled”.
- **MEBx Debug Message Output [Disabled]**
  This item allows users to enable or disable MEBx debug message. The default setting is “Disabled”.
- **Un-Configure ME [Disable]**
  The default setting is “Disabled”.
- **Intel AMT Password Write Enabled [Enabled]**
  This item allows users to enable or disable Intel AMT password write. The default setting is “Enabled”.
- **AMT Wait Time**
  Set waiting time to enter AMT to 0.The default setting of ASF is “Enabled”.ASF is short for Advanced Streaming Format.

- **Activate Remote Assistance Process [Disabled]**
  The default setting is “Disabled”.
- **USB Configure [Enabled]**
  The default setting is “Enabled”.
- **PET Progress [Enabled]**
  The default setting is “Enabled”.
- **Intel AMT SPI Protected [Disabled]**
  The default setting is “Disabled”.
- **Watch Dog [Disable]**
  The default setting is “Disabled”. Users can enable this item when needed.

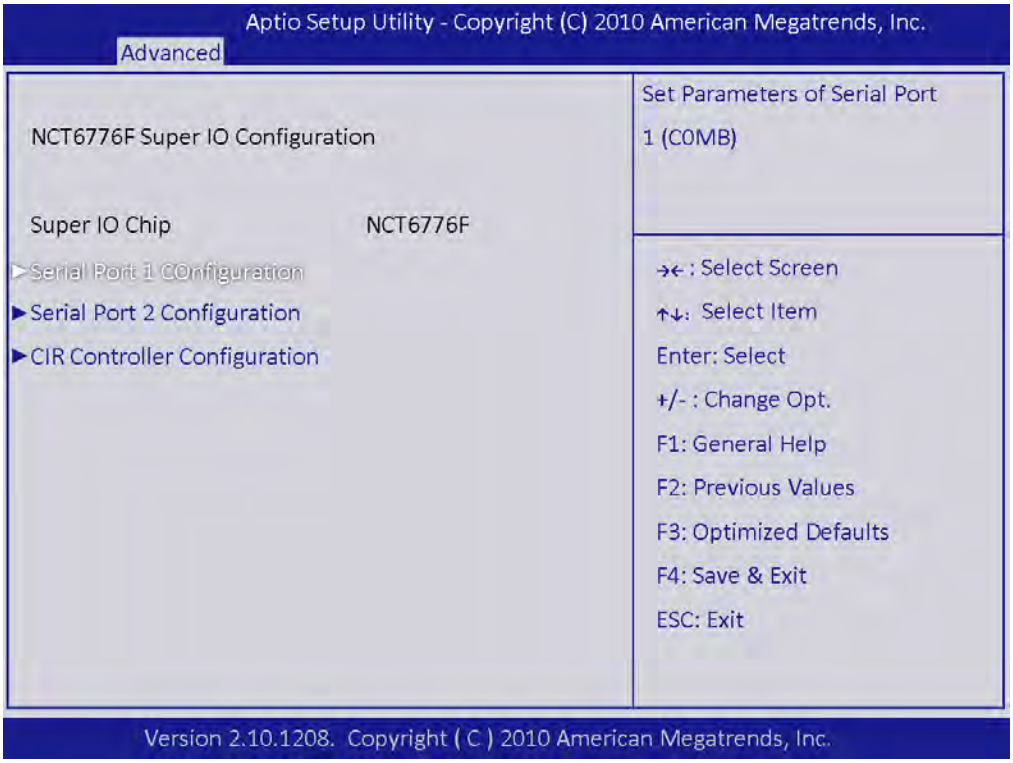
3.3.5 USB Configuration



- **Legacy USB Support [Enabled]**
  The user can enable or disable this function. The default setting is “Enabled”.
- **EHCI Hand-off [Disabled]**
  The default setting of EHCI (Enhanced Host Controller Interface) is “Disabled”.
- **USB Transfer time-out[20sec]**
  The default time interval is 20 seconds. The other options include 1sec, 5sec, 10sec and 20sec.
- **Device reset time-out[20sec]**
  The default time interval is 20 seconds. The other options include 10sec, 20sec, 30sec and 40sec.
- **Device power-up delay [auto]**
  The default setting is “Auto”. The user can choose “Auto” or “Manual”.

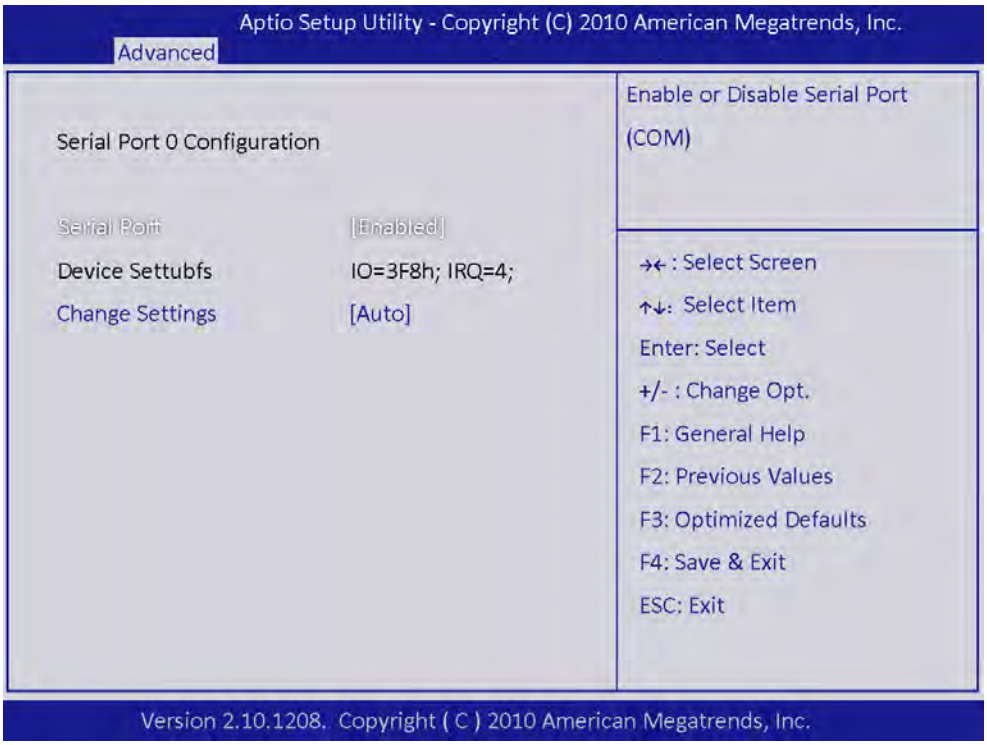
3.3.6 NCT3776F Super IO Configuration

COM1, COM2 Port Configuration



- **Serial Port1 Configuration**

  COM1 port address configuration



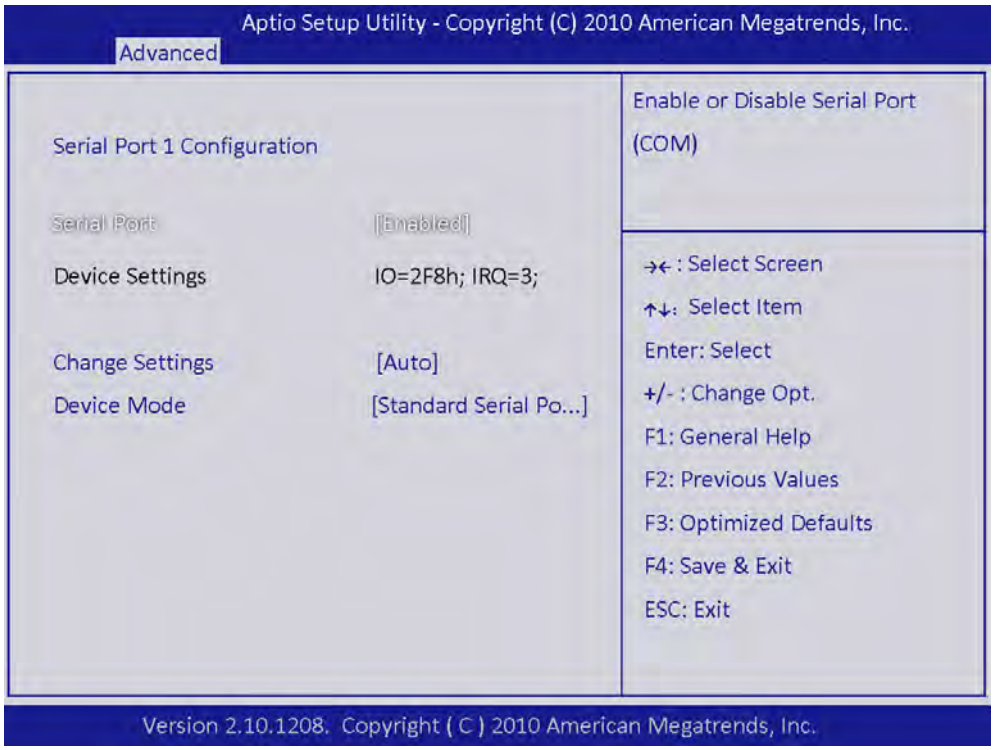
- **Serial Port [Enabled]**

  The default setting is “Enabled”.COM1 address: 3F8h;IRQ=4.

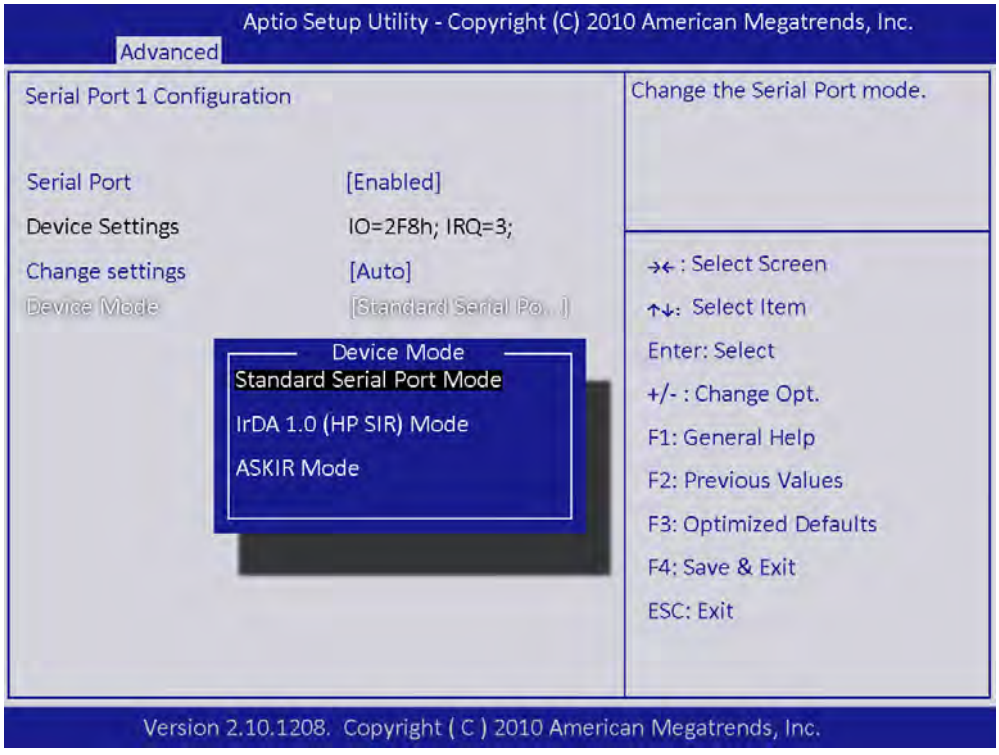
- **Charge Settings [AUTO]**

  The user can change COM1 address as required.

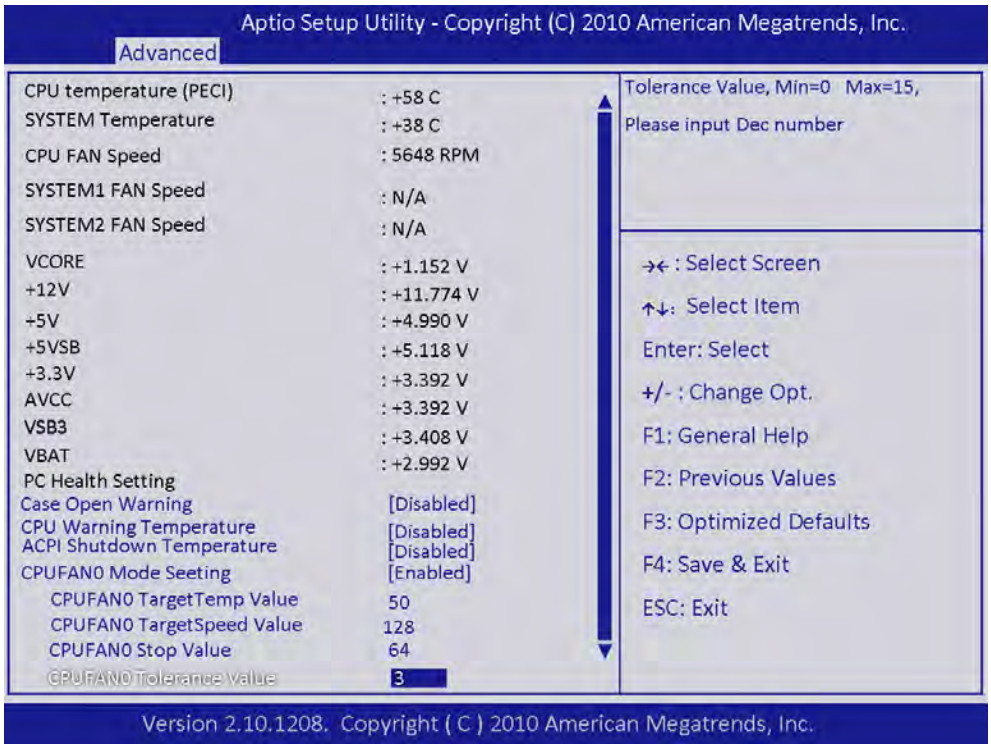
- **Serial Port2 Configuration**



- **Serial Port [Enabled]**
  The default setting is “Enabled”.
  COM2 address: 2F8h;IRQ=3.
- **Charge Settings [AUTO]**
  The user can change COM2 address as required.
- **Device Mode [Standard Serial Port Mode]**
  The default setting is “Standard Serial Port Mode”.Ths user can change to other modes as required.



3.3.7 H/W Monitor

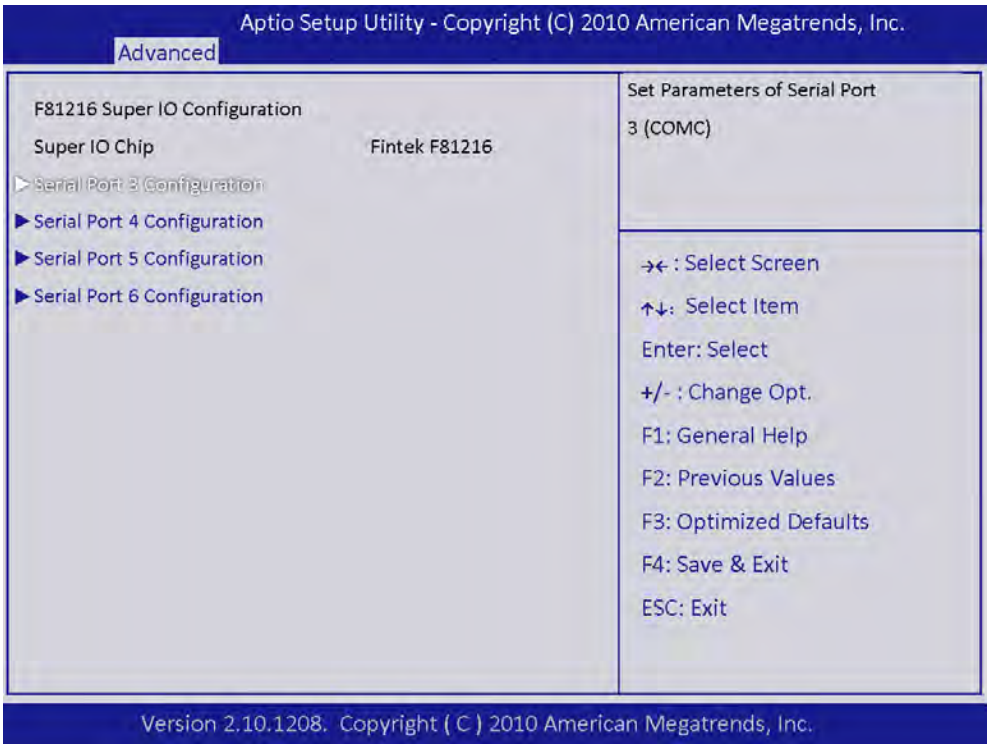


- **CPU Temperature**
  This shows you the current CPU temperature.
- **System Temperature**
  This shows you the current temperature of system.
- **CPU FAN Speed**
  This shows the current CPU FAN operating speed.
- **System1 FAN Speed**
  This shows the current System1 FAN operating speed.
- **System2 FAN Speed**
  This shows the current System2 FAN operating speed.
- **Vcore/+12V/ +5V/ 5VSB/+3.3V/AVCC/VSB3/VBAT**
  This shows the voltage of VCORE, +12V, +5V, 5VSB(V), +3.3V, AVCC, VSB3 and VBAT(V).
- **System Smart Fan**
  (Note: System fan has no signal detection wire, so the fan speed can not be detected),
- **Case Open Warning [Disabled]**
  The user will be able to find the failure by sound alarm if this item is enabled.
- **CPU Warning Temperature [Disabled]**
  This item allows you to set CPU warning temperature. The default setting is “Disabled”.
- **ACPI Shutdown Temperature [Disabled]**
  This item allows you to set ACPI Shutdown Temperature. The default setting is “Disabled”.

3.3.8 F81216 Super IO Configuration

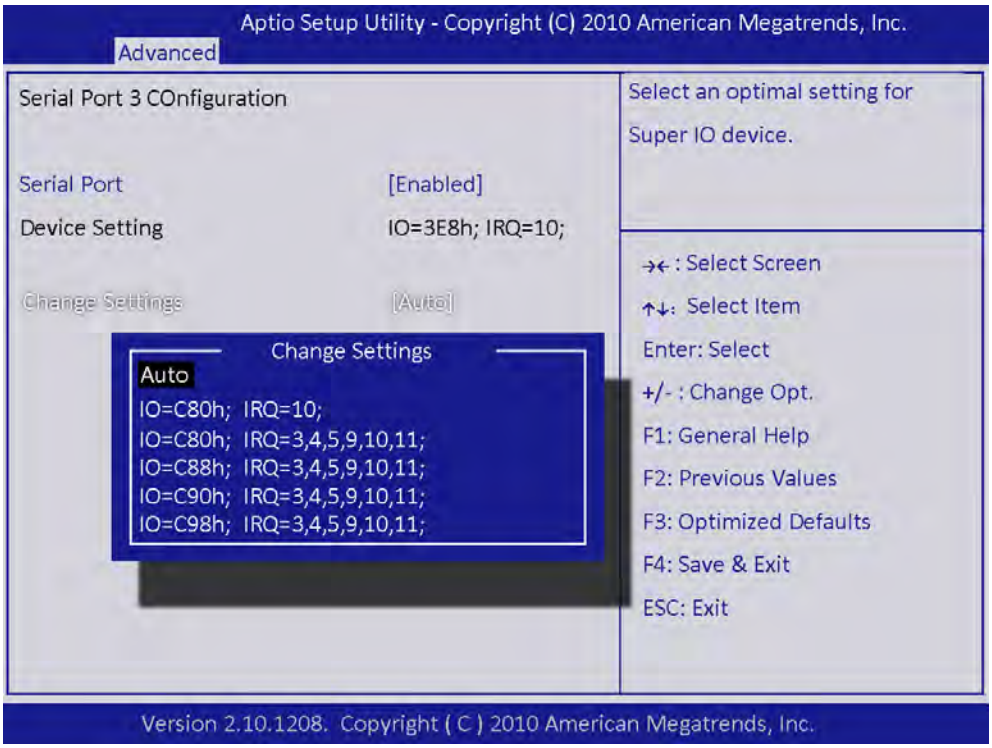
COM3 and COM4 configuration.

IPPC-9151G/9171G can support four COM ports.



- **Serial Port 3 Configuration**

  COM3 Setting. This user can change COM3 address as required. The default setting is “Auto”.



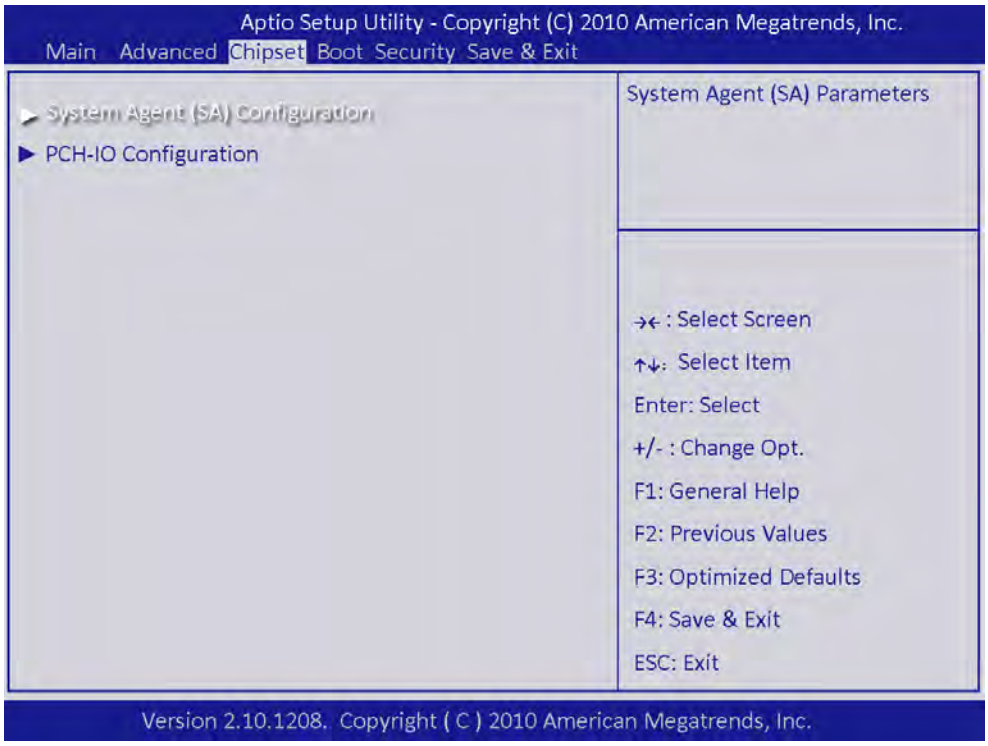
- **Serial Port 4 Configuration**

  COM4 port address configuration.Ths user can change COM4 address as required. The default setting is “Auto”.

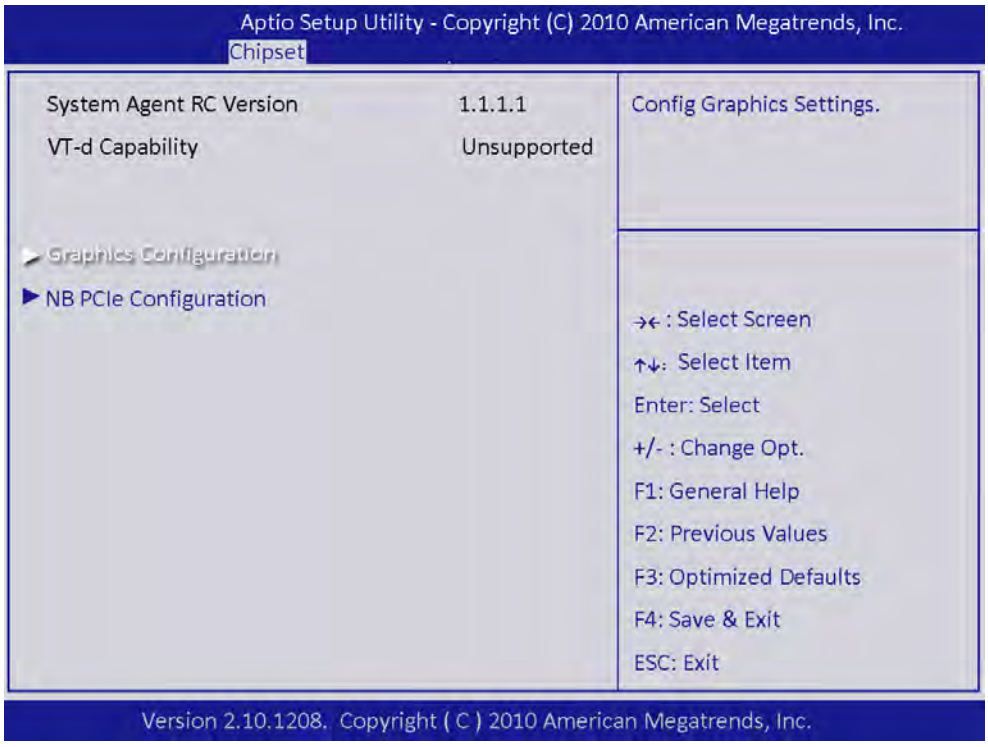
3.4 Chipset

Chipset Configuration Setting

3.4.1 System Agent (SA) Configuration



3.4.1.1 Graphics Configuration



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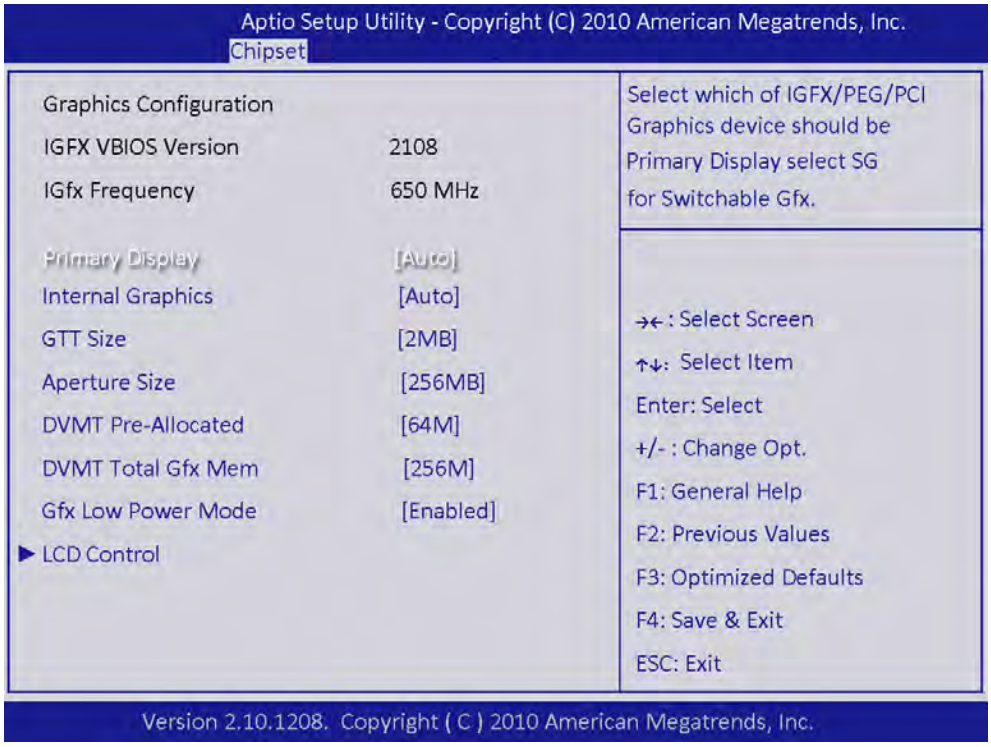


- **LCD Control**
- **Primary IGFX Boot Display [LVDS]**

  The primary display item is LVDS display by default.
- **Secondary IGFX Boot Display [CRT]**

  The secondary display item is CRT display by default. Choosing “VBIOS Default“ will result in blurred screen. It’s recommended to use the default LVDS.
- **LCD Panel Type [1024x768 LVDS,24Bit]**

  (Default setting of IPPC-9151)
- **LCD Panel Type[1280x1024 LCDS,48Bit]**

  (Default setting of IPPC-9171)

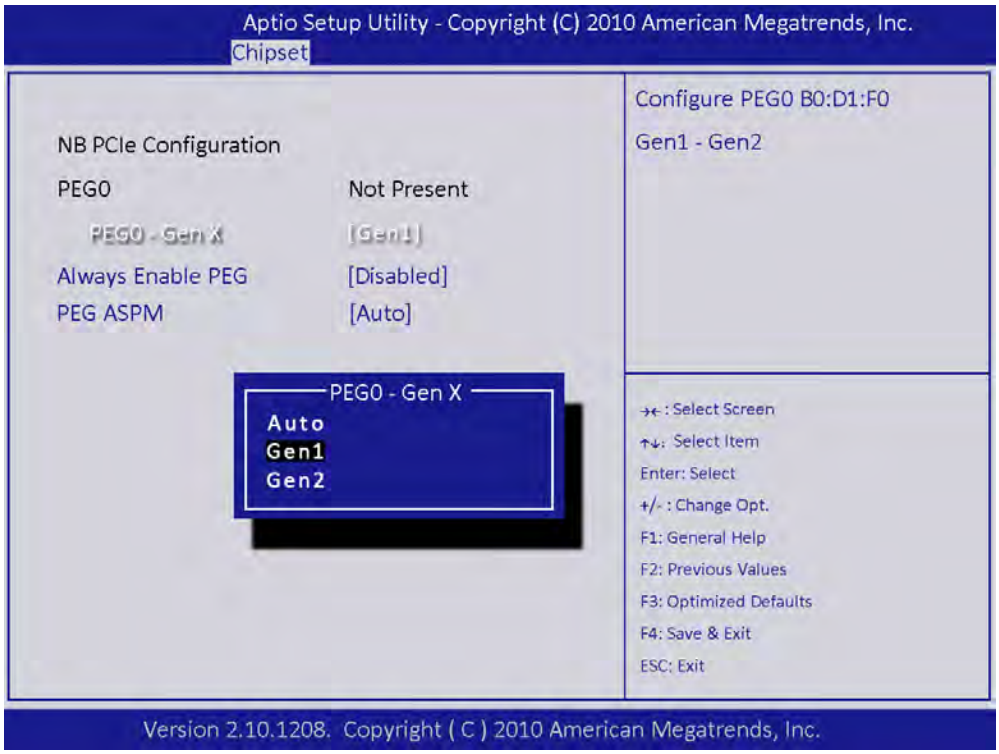
  VBIOS Default values are neither 24 bit nor 48 bit. Choosing “VBIOS Default“ will result in blurred screen. It’s recommended to use the default BIOS values.
- **Panel Scaling [AUTO]**

  This item allows users to enable or disable the panel scaling feature. The default setting is “Auto”.
- **Active LFP [Int-LVDS]**

  This item allows users to select LFP configuration. The default setting is LVDS. VBIOS Default values are neither 24 bit nor 48 bit. Choosing “VBIOS Default“ will result in blurred screen. It’s recommended to use the default LVDS.

3.4.2 NB PCIe Configuration

PCIe slot configuration



- **PEG0-GENX [Gen1]**
  The default setting is Gen1.
- **Always Enable PEG [Disabled]**
  The default setting is “Disabled”. Users can enable this item when needed.
- **PEG ASPM [Disabled]**
  Active State Power Management. Power management solution supported by WIN7 and VISTA. Power saving mode will be used when the device (PCI Express) is idle.The default setting is “Disabled”.

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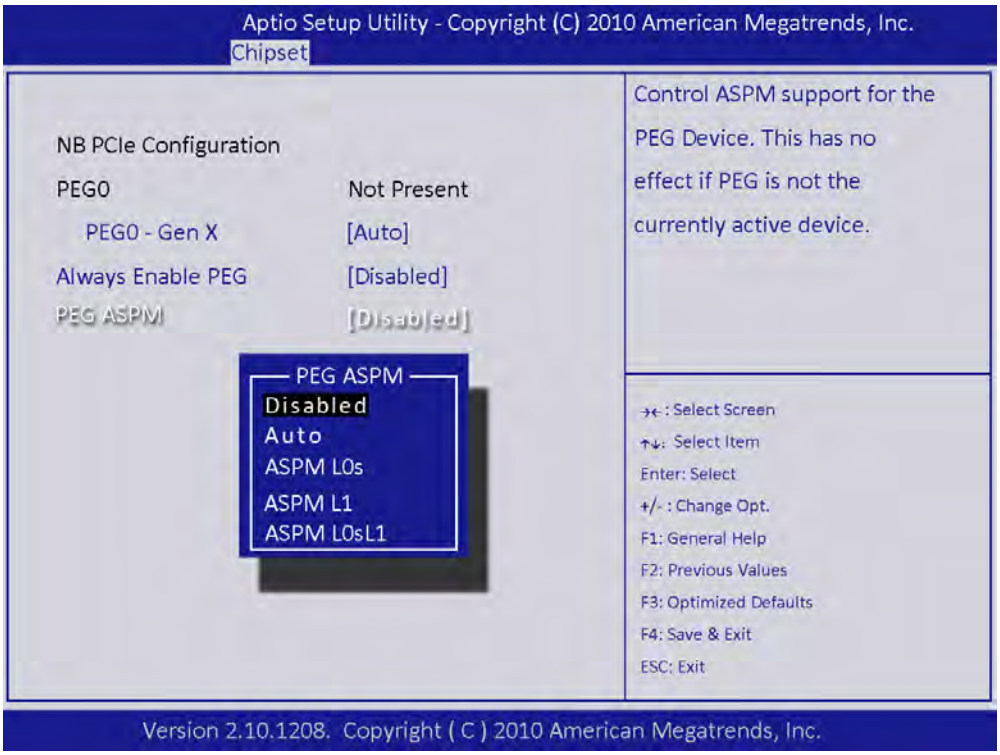
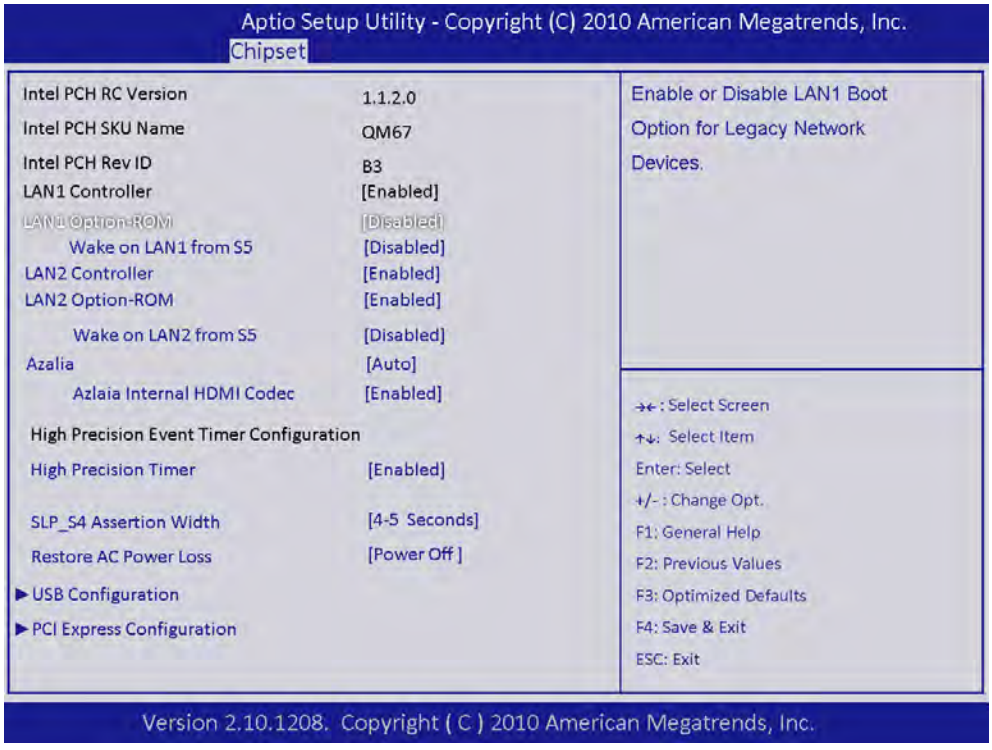
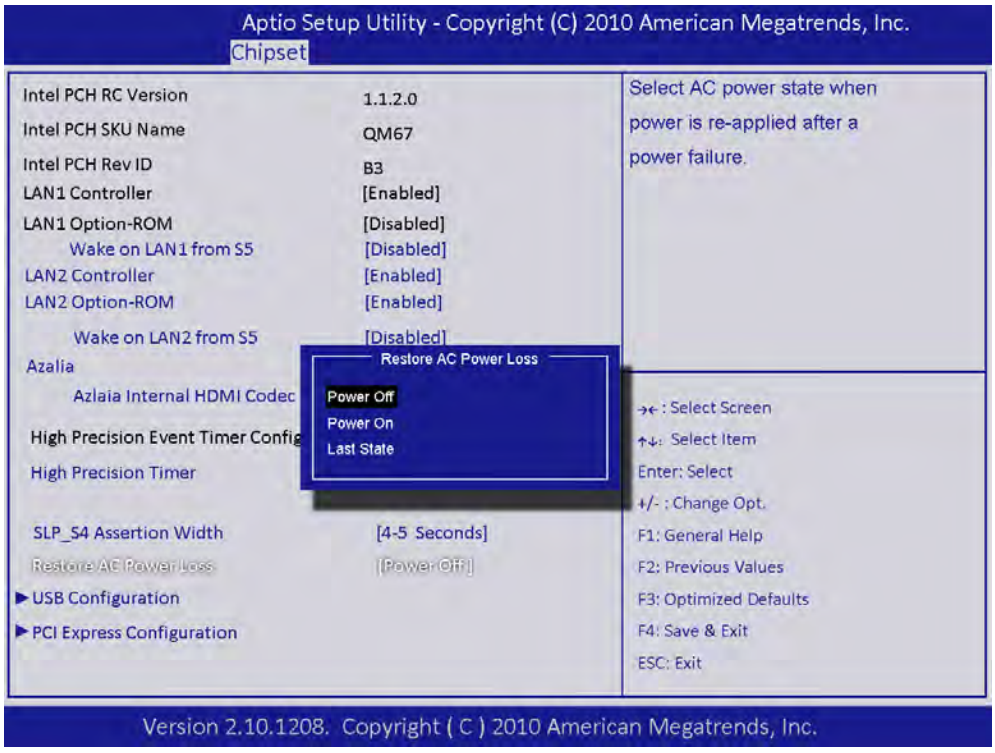


3.4.3 LAN Ports Setting



- **LAN1 Controller [Enabled]**
  The default setting of LAN1 port is “Enabled”.
- **LAN1 Option-ROM [Disabled]**
  The default setting is “Disabled”.
- **Wake on LAN1 from S5[Disabled]**
  The default setting is “Disabled”.

- **LAN2 Controller [Enabled]**
  The default setting of LAN2 port is “Enabled”.
- **LAN2 Option-ROM [Disabled]**
  The default setting is “Disabled”.
- **Wake on LAN1 from S5[Disabled]**
  The default setting is “Disabled”.
- **Azalia Internal HDMI Codec [Enabled]**
  The default setting is “Enabled”.
- **High Precision Timer {Enabled]**
  The default setting is “Enabled”.
- **SLP-S4 Assertion Width[4-5 Seconds]**
  SLP (Software Licensing and Protection)
  SLP detection uses 4-5 seconds.
- **Restore AC Power-Loss [Power Off]**
  The computer will not restart when AC power is restored after power-loss. The user can this the setting if required.

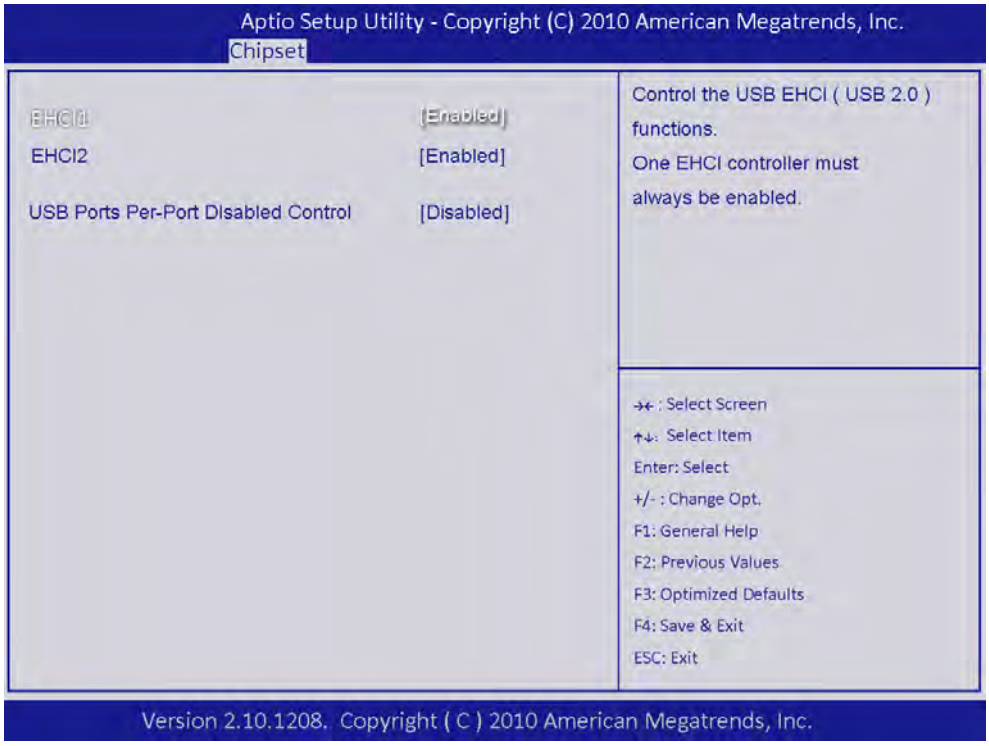


3.4.4 USB Configuration

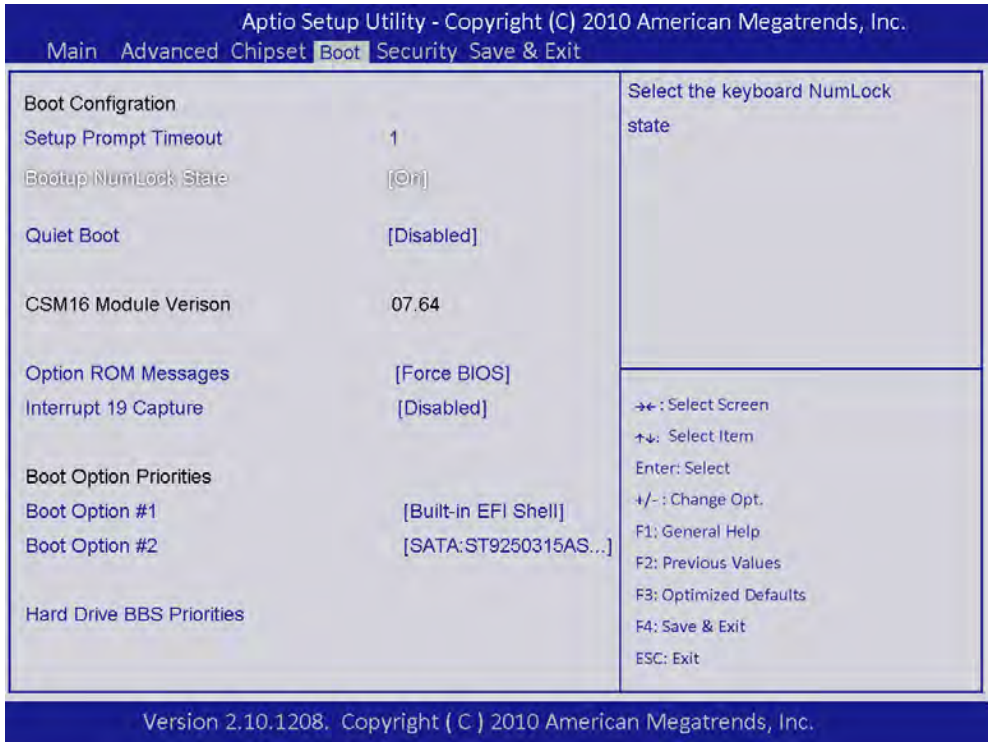
The default setting off EHCI1 is “Enabled”.

The default setting off EHCI2 is “Enabled”.

- **USB Ports Per-Port Disabled Control [Disabled]**
  The default setting is “Disabled”.

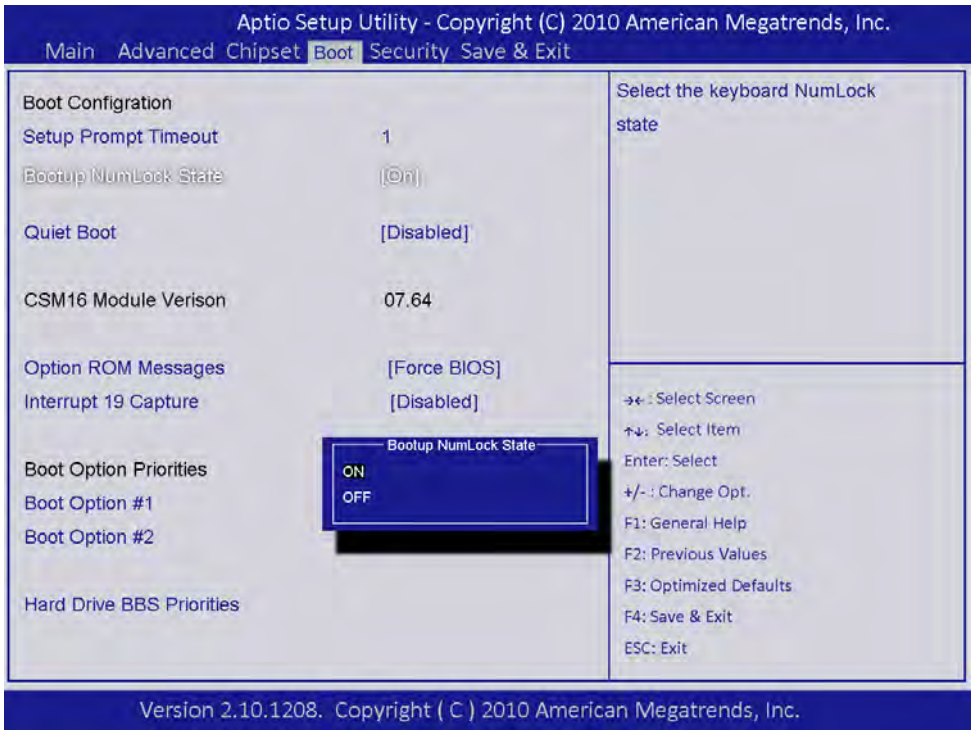


3.5 Boot Setting



- **Bootup NumLock State [On]**
  When “ON”, the keyboard NumLock state will stay “ON” after booting. The default setting is “ON”.

  This user can change the setting as required.



- **Option ROM Messages [force BIOS]**
  The default setting is “force BIOS”.
- **Interrupt 19 Capture [Disabled]**
  The default setting is “Disabled”.

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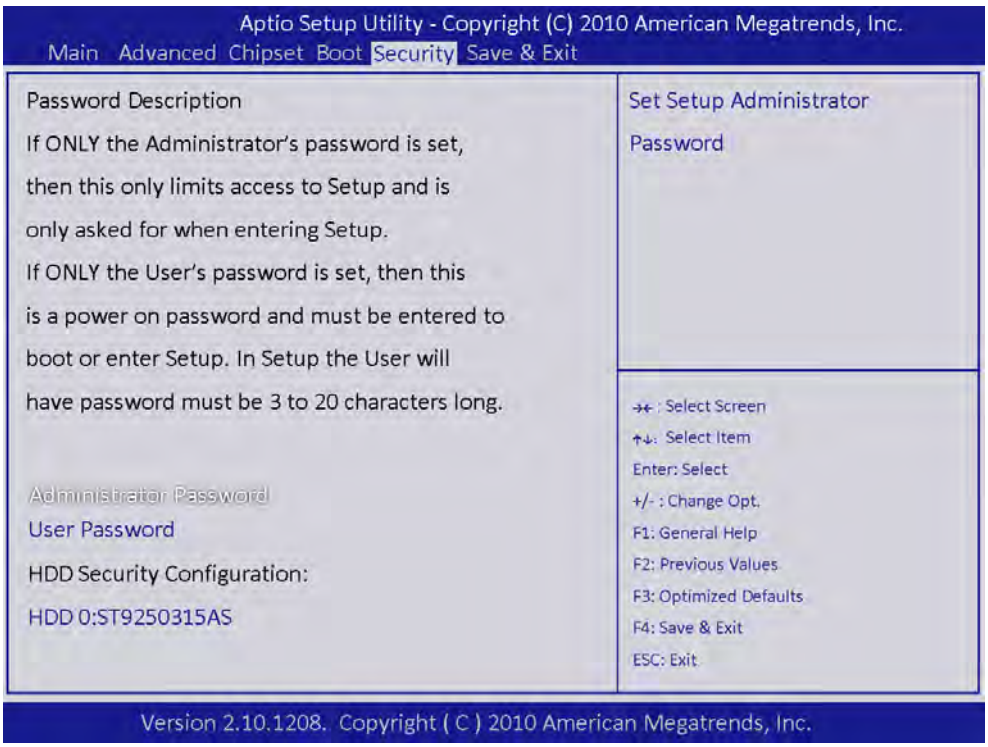
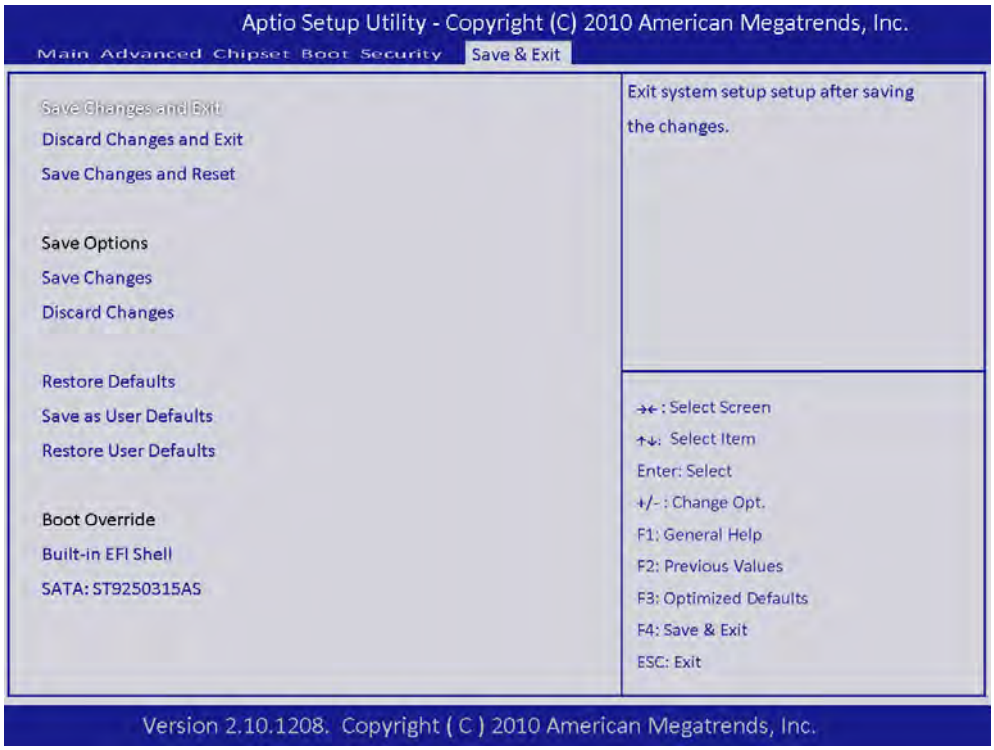
- **Boot Option #1**
  Boot Option #2
  Show different boot device choices.
- **Hard Drive BBS Priorities**
  Select the main hard disk device type to be a boot hard drive.

3.6 Security Setting



- **Administrator Password**
  Set the Administrator password.
- **User Password**
  Set the User password.

3.7 Save & Exit



- **Save Changes and Exit**
  Save Configuration Changes and Exit Now? Select “OK” or “Cancel”.
- **Discard Changes and Exit**
  Discard Changes and Exit Setup Now? Select “OK” or “Cancel”.
- **Restore Default**
  The BIOS automatically configures all setup items to optimal settings when users select this option.
- **Save as User Defaults**
  Save the all current settings as a user default.
  Restore User Defaults

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Chapter 4

Installing API Software

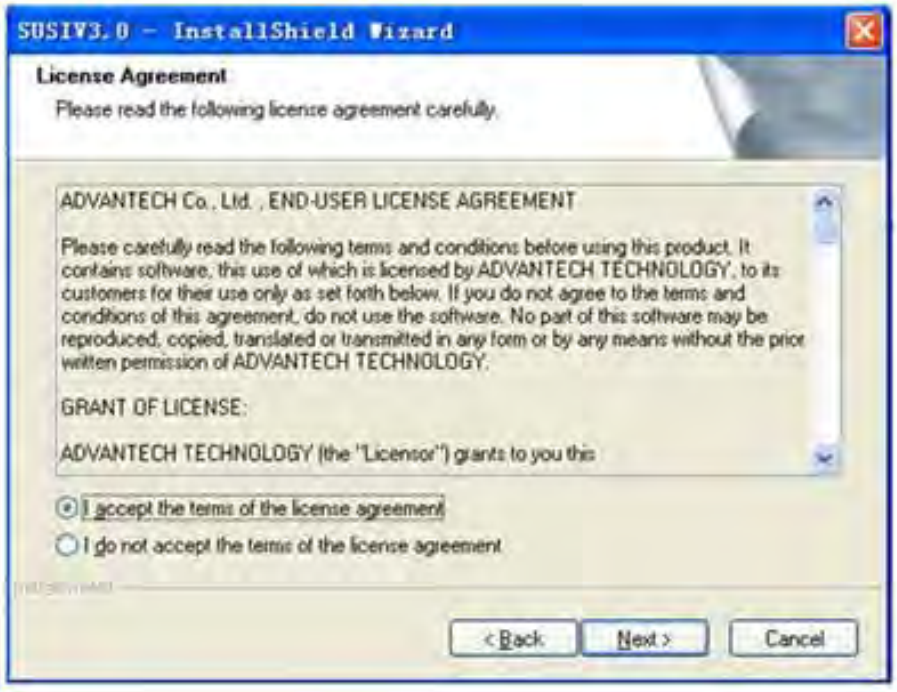
4.1 Brightness Control Software (SUSI)

4.1.1 Installing SUSI Software

(SUSI software can be downloaded from our advantech website.)

1. Click “Setup” to install SUSI software.
2. Click “Next”.

3. Select “I accept the terms of the license agreement”, then click “Next”.



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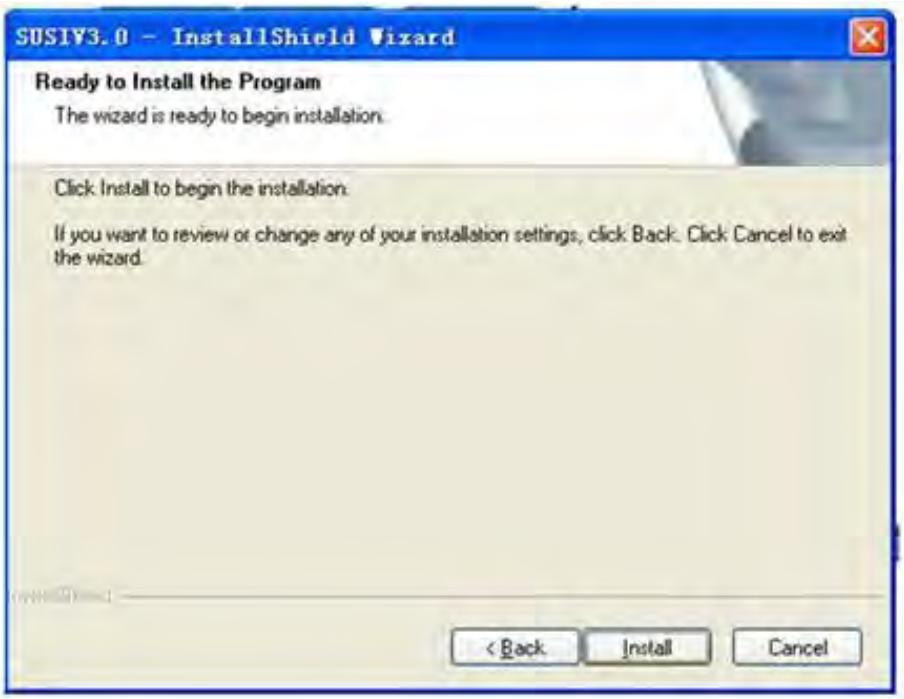
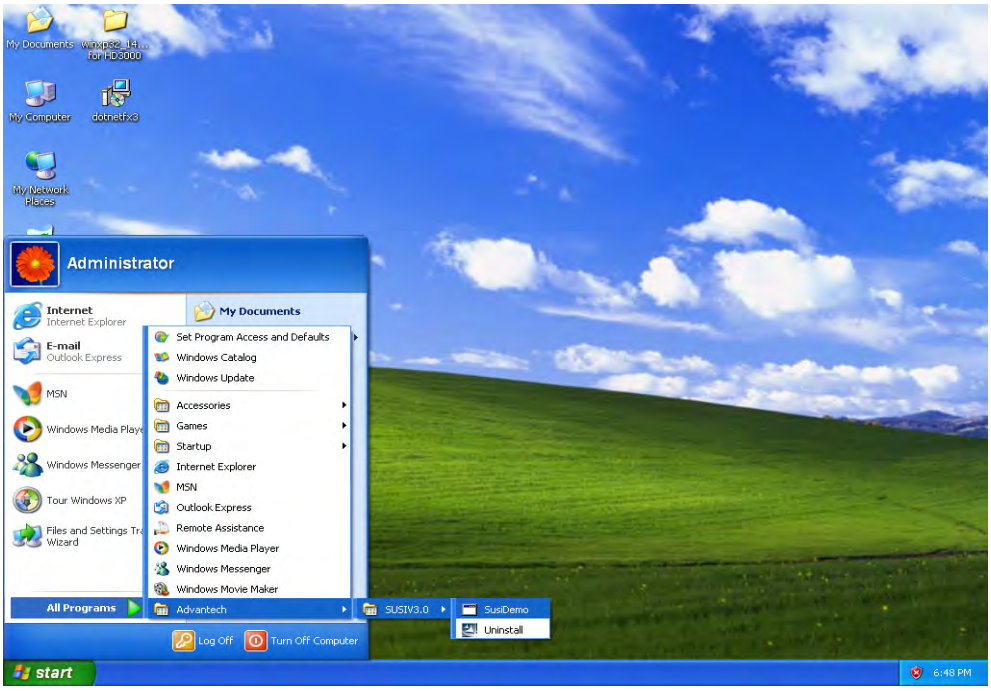
4. Click “Install”.



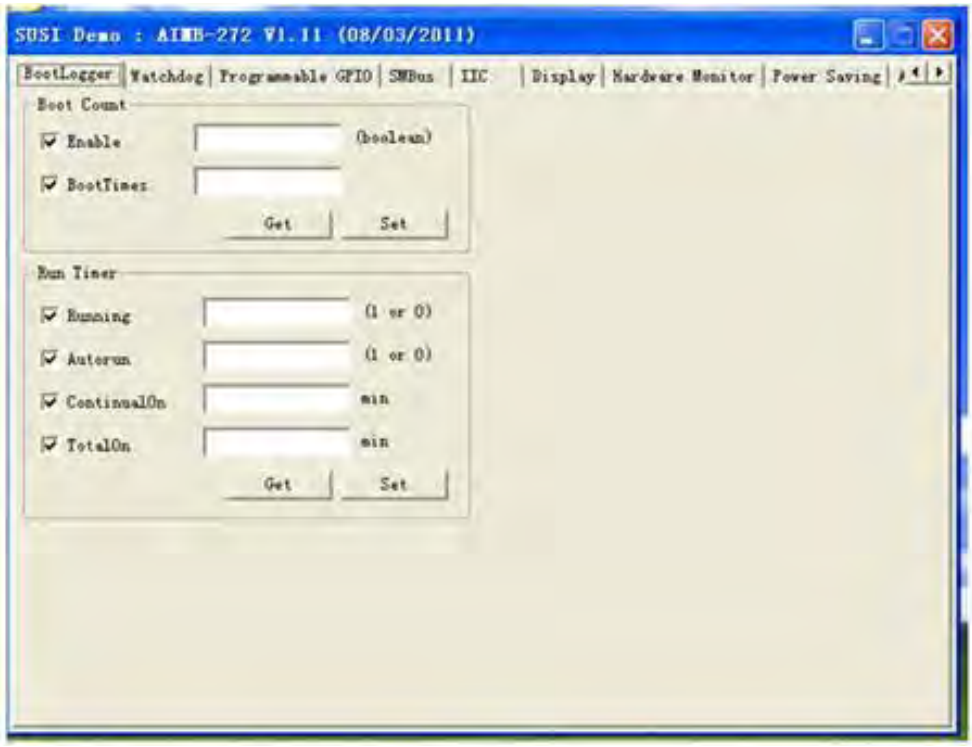
5. Select “Yes, i want to restart my computer now” and click “Finish”.

4.1.2 Adjust LCD Brightness with SUSI

1. Launch SUSI software.



2. The following screen appears:



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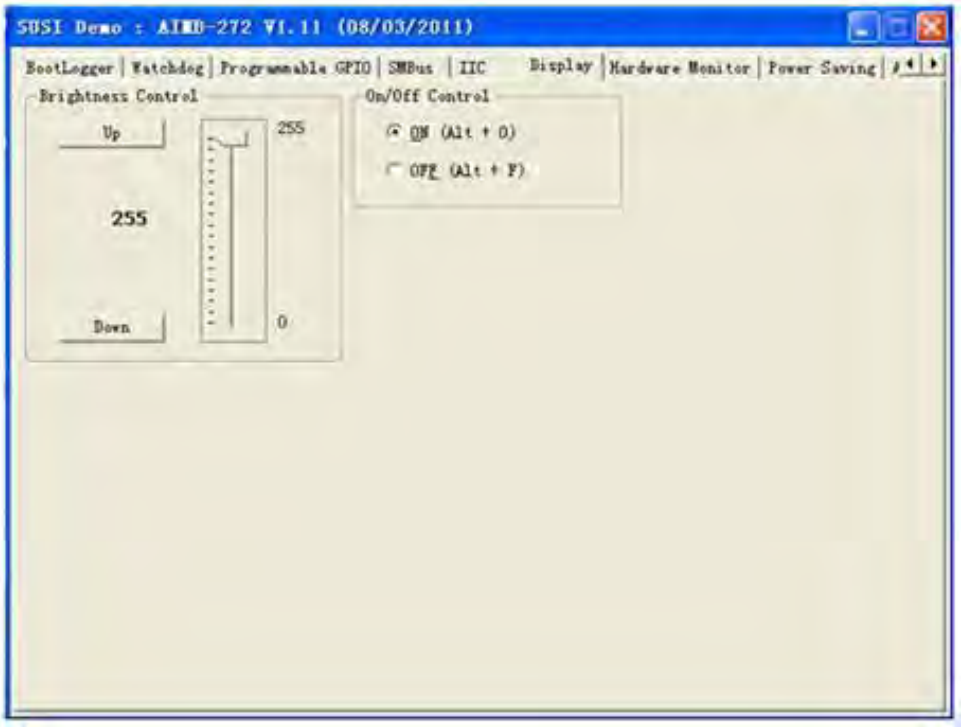
3. Select “Display” as shown below:



4. Drag the slider with the mouse or click Up/Down button to adjust the brightness of LVDS display.

Note!

- *For IPPC-9151G, the lower the slider is, the brighter LVDS display will be.*
- *For IPPC-9171G, the lower the slider is, the darker LVDS display will be.*

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