

POS-7933

POS Dedicated Motherboard

USER' Manual V1.0


# 用户手册

## USER' Manual

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**Industrial & Communication Computer** 

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## Safety Instructions

1. Before using this product, please read this user's manual carefully;
2. Any plate cards not ready to be installed shall be kept in the anti-static bags;
3. Before taking out the plate cards from the anti-static bags, first place hands on the grounding metal object for a while so as to release the static electricity from your body and hands;
4. While fetching the plate cards, please wear static protective gloves and have the habit of holding the cards by edges;
5. Before connecting the motherboard to the power supply, please check the power voltage
6. In order to prevent electric shock to body or damage to products, please turn off the AC power or unplug the power cord out of power sockets before connecting or disconnecting the main boards or do reconfiguration;
7. Before moving the plate cards or the unit, please make sure to unplug the AC power cords out of the sockets;
8. Before you connect or unplug any equipments, please make sure that all power cords are unplugged in advance;
9. To prevent any unnecessary damage to the products due to frequent power on/off. Please wait at least 30 seconds before you restart the unit after shutdown.
10. If anything unexpected happened during the operating, please seek help from professionals.

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**NORCC**

**Chapter 1. Product  
Introduction**

# Chapter 1. Product Introduction

## 1.1 Overview

POS-7933 is a type of motherboard dedicated for POS applications. This board is based on Intel Q67 chipset and support LGA1155 Sandy Bridge processor series(Second generation Intel Core processors). Onboard 2xDDRIII 1066MHz/1333MHz DIMM slots, with each capacity max. up to 4GB, dual channel supported. The board provides 4xSATA interfaces, 1xgigabit Ethernet ports, 2\*VGA for dual independent display with max resolution up to2048x1536 , 10xserial ports, 1xparallel port and 6xUSB 2.0s for data communcations. It also supports Line-out,Line-in,Mic-in and CD-in audio functions. Besides, onboard 1xPCI slot and 1xMini-PCIE slot provide the system more flexible peripheral expansion.

## 1.2 Product Specification

### Structure Standard

- High Performance Motherboard for POS Applications

### Dimension

- 235X220 (L×W)

### Processor

- Adopt Intel Q67 chipset, supporting LGA1155 Intel Sandy Bridge processor

### System Memory

- 2\*DDRIII 1066/1333MHz memory solts with single capacity up to 4G (dual channel)

### Storage

- 4\*SATA Ports with SATA1/2 adopting SATA3.0 interface and SATA3/4 adopting SATA2.0 interface, supporting RAID 0/1/5/10

### Display

- Chip: Bridge chip+CH7317B
- 1\*standard DB15 and 1\*2×5PIN

**LAN**

- Adopt RTL8111D chip
- 1\*standard RJ45 Ethernet port

**Audio**

- Adopt Realtek ALC887 chip, providing Line-out, Line-in, MIC-in & CD-in function
- 1\*4PIN CD\_IN and one 2X5PIN Header

**USB Port**

- 3\*2X5Header interface, able to be converted to 6\*standard USB ports.

**I/O**

- Adopt W83627DHG-P I/O chip
- COM: 10\*COM with two provided by I/O and 8\* COM via LPC expansion. COM1-10 support RS232: COM2 also supports RS422\485
- LPT: 1\*DB25 parallel port
- KM Connector: standard double layer PS/2 KM connector
- JGP:1\*2×5PIN GPIO port supporting 8 bit I/O

**Expansion**

- 1\*standard PCI & 1\*Mini-PCIE

**Power Supply**

- Standard ATX power supply

**Watchdog Timer**

- Support HDD reset function

**BIOS**

- 32M Flash BIOS supports SPI BIOS

**Environment**

- Operating Temperature: -20°C-60°C



- Storage Temperature: -40°C-85°C
- Operating Humidity: 5%-95%, non-condensing

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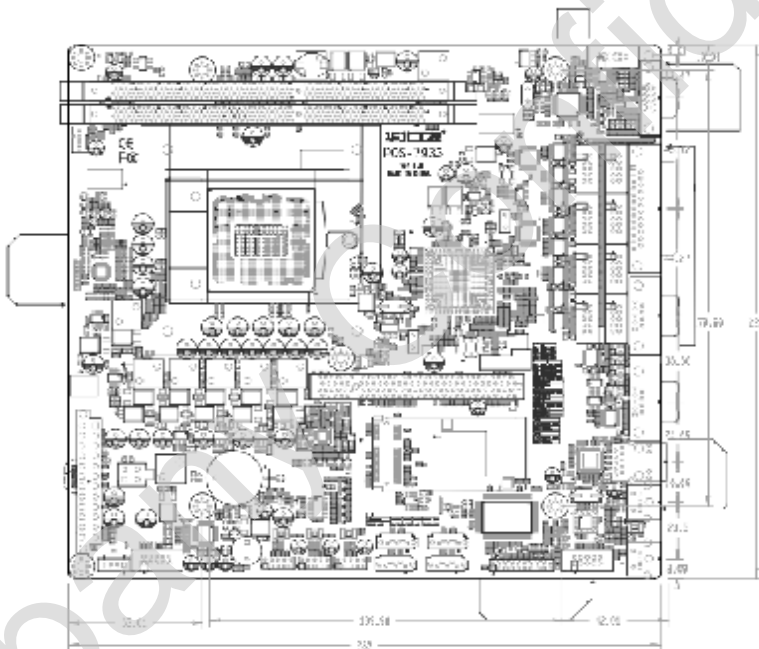
**Chapter 2. Installation  
Instruction**

## Chapter 2. Installation Instruction

### 2.1 Interface position and Dimension Diagram

The chart below shows the dimension and interface location of POS-7933. During installation, please follow this diagram and read the instructions carefully. Any improper installation of some components will lead to system failure.

**Note: When operating, please wear anti-static gloves in case that the static may cause damage to some components.**



### 2.2 Installation Steps

Please follow the steps below to assemble your computer

1. Adjust all the jumpers on the motherboard POS-7853 according to the manual
2. Install CPU
3. Install Memory
4. Install other expansion cards

5. Connect all signal cable, power cable, panel control cable and power supply unit
6. Power on the computer and complete BIOS setup



**All the key components of this board are integrated circuits, which are easy to be damaged by electrostatic influence. So, before installing motherboard, you should make the following preparation:**

1. Hold the motherboard by the edge, don't touch the components or any pins on the board.
2. Use a grounded wrist strap or anti-static gloves while getting in touch with integrated circuit components(such as CPU, RAM).
3. When the integrated circuit components are uninstalled, pls put these components in antistatic tray or bags.
4. Pls make sure the power switch is off before connecting the power plug.

## 2.3 CPU Installation

Pls follow the steps below to intall CPU

- (1) Open the cover of CPU socket on the motherboard
- (2) Hold CPU by both sides. Make the triangle mark of its Pin1 aim at the socket notchmark and insert CPU into the socket.
- (3) Check the installation of CPU and close the socket cover.

Pls follow the steps below to install CPU FAN:

- (1) Make sure the CPU FAN heat sink aligned with the CPU surface and fix the fan on the motherboard.
- (2) Connect the fan power cord to the CPU FAN socket

## 2.4 RAM Installation

Board provides 2\*DIMM sockets and please keep the following precautions in mind during the installation:

1. When installing the memory bank, pls align the notch with the socket and press softlyto tighten the connection.
2. Pls make sure your memory bank can support the motherboard specifications.

## 2.5 Jumper Setting

Pls config the responding jumpers before installing the hardware:

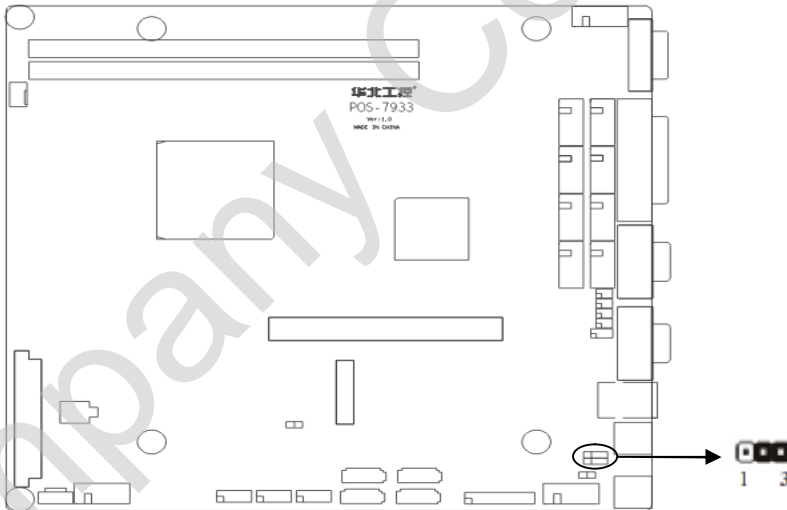
**Note:** How to identify jumper and PIN1 of interface.

Please observe the word mark of plug socket, it will use “1” or bold line or triangular symbols; and please look at the back of PCB, PIN 1 is with a square pad. The pin1 of all jumpers will have a white arrow.

**2.5.1 CMOS Content Clearance/Hold Setting (JCC, JRTC)**

CMOS powered by onboard button battery. Clean CMOS will lead to a permanent elimination of the previous system setting and back to the original (default setting) system settings.

- Steps :**
- (1) Turn off the computer, disconnect the power supply
  - (2) Use jumper cap short JCC Pin 1 and Pin 2 for 5~6 sec. Then restore the default setting of Pin2 and Pin 3.;
  - (3) Turn on the computer, then press DEL key into the BIOS setting, you also can use optional load optimized defaults.
  - (4) Save and exit setting.



Setting	JCC (Master Jumper)	JRTC (Slave Jumper)
1-2	Clear CMOS	Clear CMOS
2-3	Normal Status (default)	Normal Status (default)

**⚠** Pls don't clear CMOS when the computer is booting, otherwise, damage will be caused

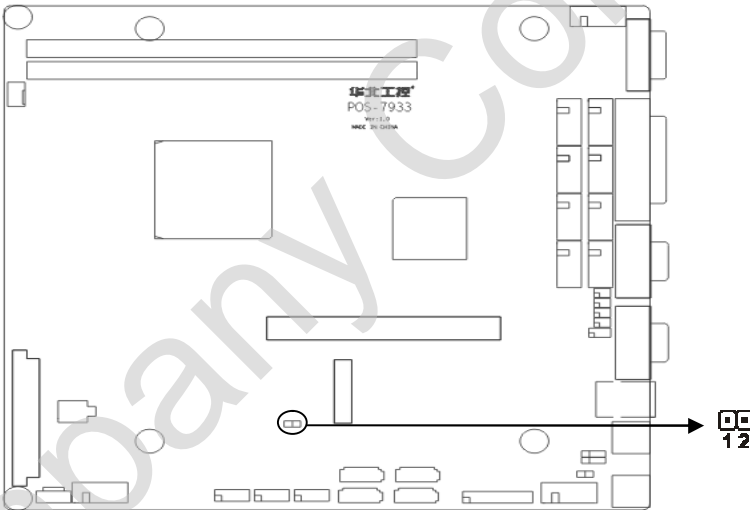
to the motherboard.

**2.5.2 COM2 Jumper Setting (J1, J2, J3)**

J6, J7 & J13 are used to config COM2 transmission mode. COM2 supports RS 232/RS 422/RS 485 three transmission modes. Users can choose different configuration according to the actual requirements. Default set is RS232.

COM2	RS232	COM2	RS422	COM2	RS485
J1	1-3 2-4	J1	3-5 4-6	J1	3-5 4-6
J2	1-3 2-4	J2	3-5 4-6	J2	3-5 4-6
J3	1-2	J3	3-4	J3	5-6 7-8

**2.5.3 Power On After AC Back Switch (JAT)**



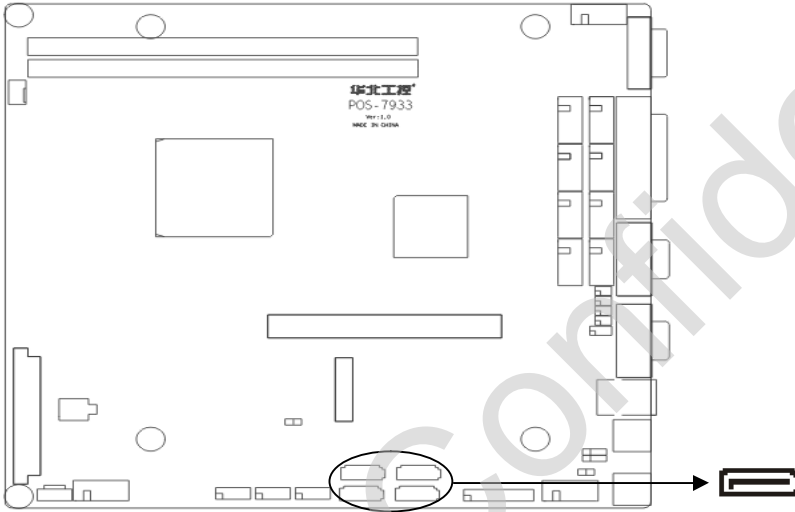
**2.6 Interface Specification**



**Pls read this manual carefully before connecting the external connectors in case of any damage to the motherboard.**

**2.6.1 SATA Ports (SATA1—SATA4)**

Board provides 4\*SATA interfaces with SATA1/2 adopting SATA 3.0 while SATA 3/4 adopting SATA 2.0, supporting RAID0/1/5/10.



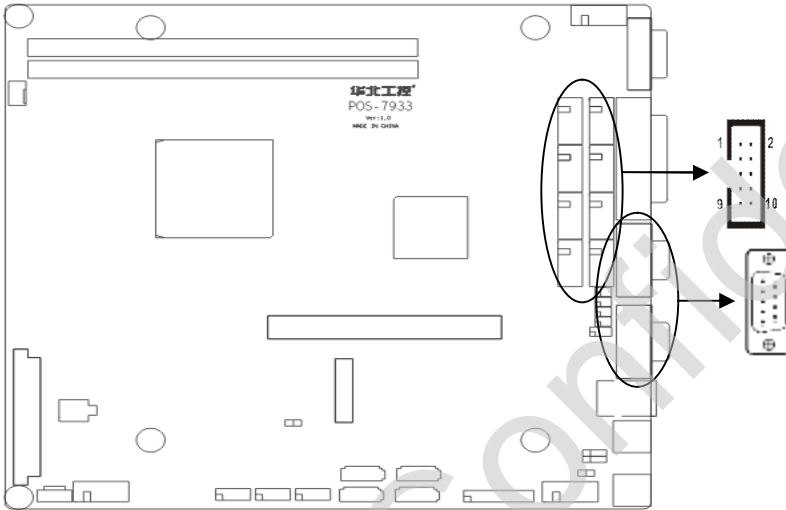
SATA:

Pin	Signal Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

**2.6.2 Serial Ports (COM1, COM2, COM3—COM10, J6, J9)**

Board provides 10\* serial ports, among which COM1 & COM2 adopt standard DB9 interface.COM3-COM10 need to be converted to standard DB9 to connect peripherals via convert cable. Both COM1&COM2 support RS232 and COM2 also supports RS422/485. Users can choose the

transmission rate for COM2 via jumper setting. Details refer to Chapter2 --2.5.2 “COM2 Jumper Setting”.



**COM1-COM2:**

Pin	Signal Name	Description
1	DCD	Date convey
2	RXD	Receive data
3	TXD	Transfer data
4	DTR	Data terminal ready
5	GND	ground
6	DSR	Data setting ready
7	RTS	Requirement send
8	CTS	Clear the sending
9	RI	Ring indicate

**COM3-COM10:**

Signal Name	Pin		Signal Name
DCD	1	2	DSR
RX	3	4	RTS
TX	5	6	CTS
DTR	7	8	RI



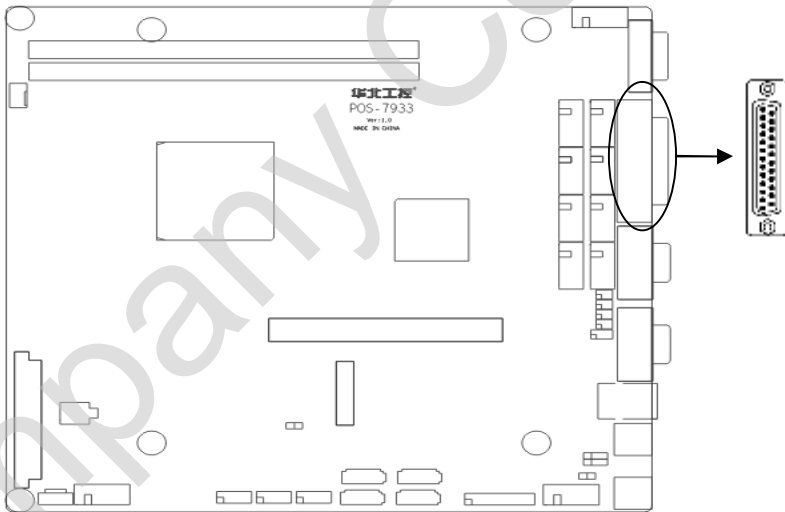
GND	9	10	GND
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J6 & J9 are the options for COM1 & COM2 to provide voltage/alarm mode, setting as follows:

Jumper	Setting	Function
J6	2-4	COM1 VOL TAGE
	4-6	COM1 RING
	1-3	COM2 VOL TAGE
	3-5	COM2 RING
J9	2-4	COM1 +5V
	4-6	COM1 +12V
	1-3	COM2 +5V
	3-5	COM2 +12V

**2.6.3 Parallel Port (LPT)**

Standard 25Pin parallel interface, able to connect parallel peripherals based on actual needs.



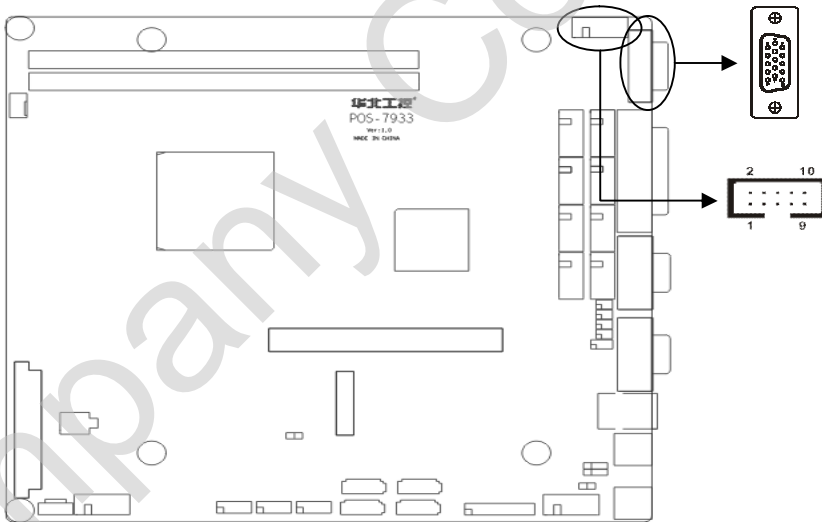
LPT:

Signal Name	Pin		Signal Name
STROBE	1	2	DATA0
DATA1	3	4	DATA2

DATA3	5	6	DATA4
DATA5	7	8	DATA6
DATA7	9	10	ACK#
BUSY	11	12	PE
SELECT	13	14	AUTO FEED#
ERR#	15	16	INIT#
SLIN#	17	18	GND
GND	19	20	GND
GND	21	22	GND
GND	23	24	GND
GND	25		

**2.6.4 Display Interface (VGA1-VGA2)**

Board provides one 2×5PinVGA Header and one standard VGA interface.



Standard VGA (VGA1) :

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	SDA

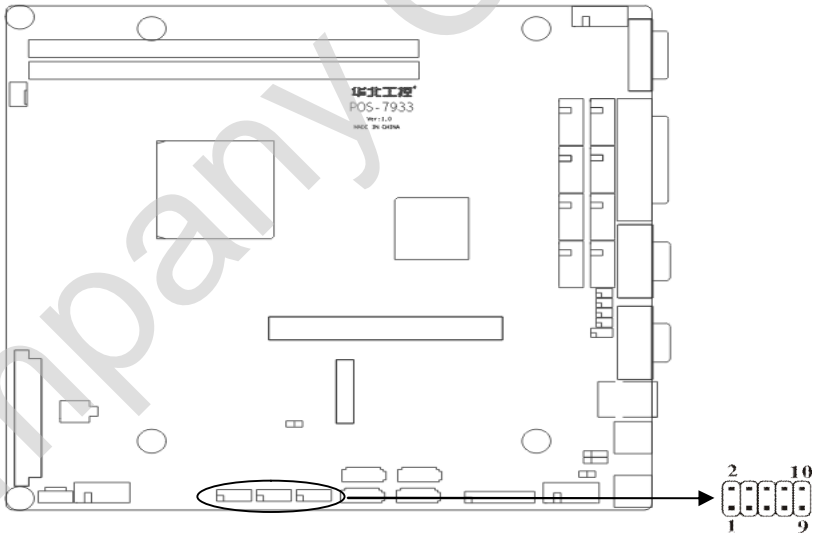
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	5VDDCK

VGA2:

Signal Name	Pin		Signal Name
VGA_R_R	1	2	GND
VGA_G_R	3	4	VGA_SDA_R
VGA_B_R	5	6	VGA_HS_R
GND	7	8	VGA_VS_R
GND	9	10	VGA_SCL_R

**2.6.5 USB Ports (USB12, USB34, USB56)**

Motherboard provides 3\* 2x5Pin USB interfaces, able to be converted to 6\* standard USB2.0 ports.



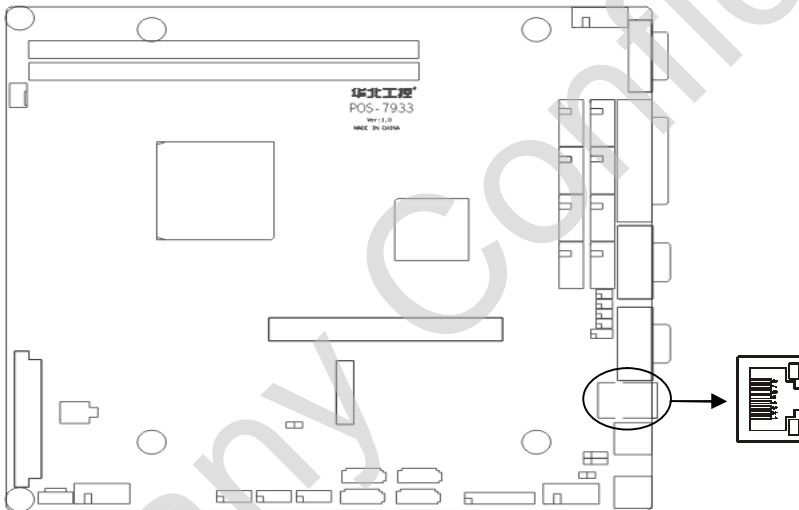
USB:

Signal Name	Pin		Signal Name
+5V	1	2	GND

USB DATA-	3	4	GND
USB DATA+	5	6	USB DATA+
GND	7	8	USB DATA-
GND	9	10	+5V

**2.6.6 Network Interface (LAN)**

Board provides one 10/100/1000Mb RJ45 network interface. Both sides of RJ-45 Ethernet port has one LED. Yellow LED indicates data transmission status, while green LED indicates the network connecting status.

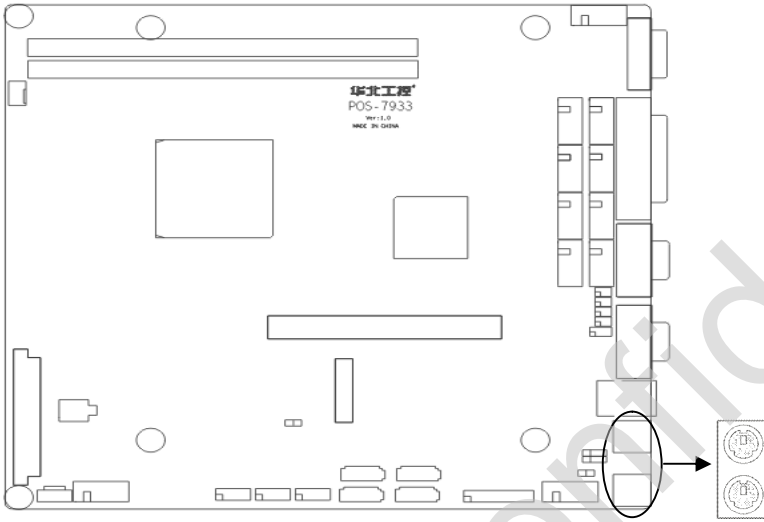


**RJ45 PORT LED:**

LILED(Green)	Function	ACTLED(Yellow)	Function
On	Effective Link	On	Data Transferring
Off	Ineffective link/close	Off	No data

**2.6.7 Keyboard & Mouse Interface (PS/2)**

PS/2 is the keyboard & mouse interface on the rear of the motherboard. Users can insert PS/2 into the corresponding connectors. (Green for mouse, Purple for keyboard)



MS:

Pin	Signal Name
1	+5V
2	GND
3	NC
4	MS_DAT A
5	MS_CLK
6	NC

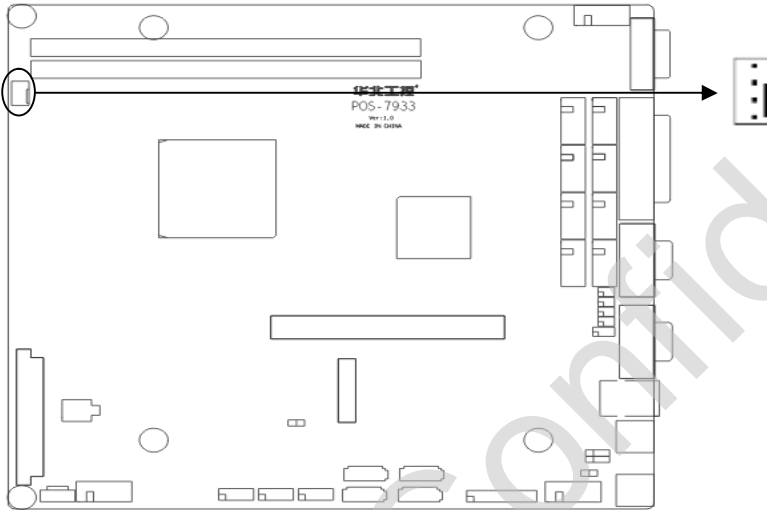
KB:

Pin	Signal Name
1	+5V
2	GND
3	NC
4	KB_DATA
5	KB_CLK
6	NC

### 2.6.8 FAN Connector (CPU\_FAN)

Board provides one 4Pin CPUFAN connector. Pls pay attention to the following points:

- (1) Electric current for fan  $\leq 350\text{mA}$  (4.2W, 12V)
- (2) Confirm the fan cable matches the fan socket

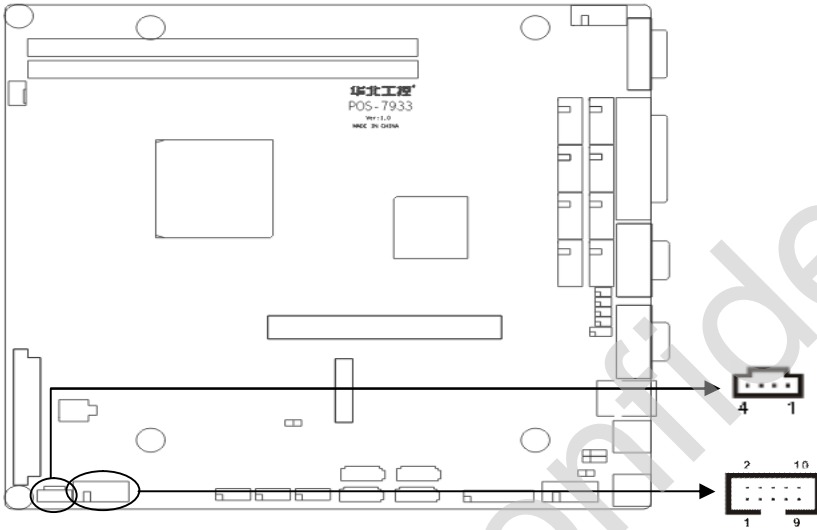


**CPUFAN:**

Pin	Signal Name
1	GND
2	+12V
3	FANIO
4	FANPWM

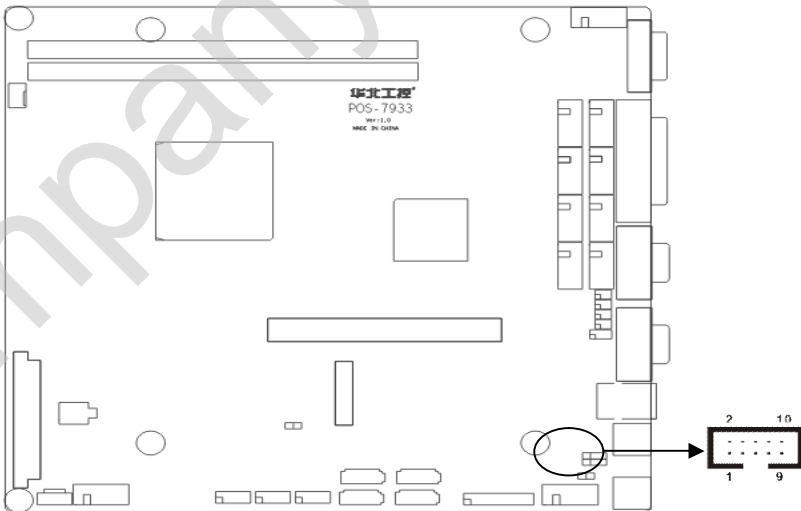
**2.6.9 Audio Interface (CD\_IN, J12)**

Onboard audio controller, providing one 4PinCD\_IN and one 2x5Header interface.



**2.6.10 GPIO Interface (JGP)**

Board provides expansion for I/O. When microcontroller or chipset doesn't have enough I/O, or the system needs to adopt remote serial communications or controlling, GPIO will provide extra control and monitoring function.

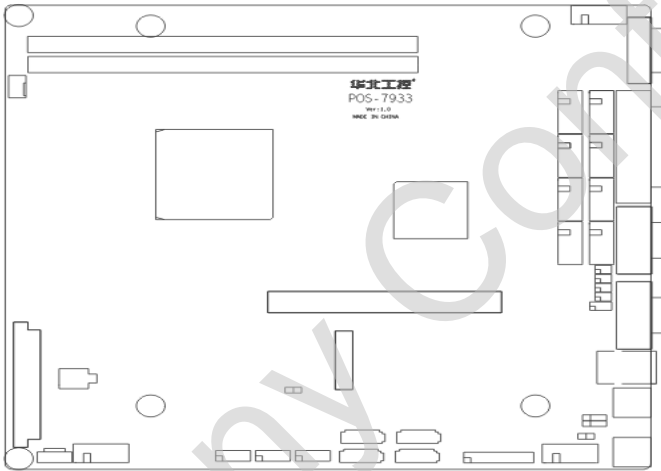


JGP:

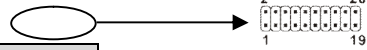
Signal Name	Pin		Signal Name
GP30	1	2	VCC
GP31	3	4	GP34
GP32	5	6	GP35
GP33	7	8	GP36
GND	9	10	GP37

**2.6.11 Front Panel Connector (J5)**

J5 is used to connect the function buttons and indicator LED on the front panel.



J5:



Signal Name	Pin		Signal Name
PERLED	1	2	VCC
GND	3	4	NC
GND	5	6	NC
KEYLOCK#	7	8	SPK-
GND	9	10	NC
GND	11	12	NC
GND	13	14	PWRBTSW-
GRELED+	15	16	GRELED-
GND	17	18	RSTBTN-



HDLED-	19	20	VCC
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Please follow the table below to connect, pay attention to the anode(+)and cathode(-), otherwise , some function can not be realized.

SPEAKER			POWER		RESET	HDD
POWER LED			BUTTON		BUTTON	LED

**1)System Power LED Pins (pin1, pin3 for PWLED)**

Connect system power LED cable with these pins. ( pin 1 is LED anode ) When system power is switched on, power LED on; when system power is switched off, power LED off.

**2) Buzzer Pins (pin2, pin8 for SPEAKER)**

Offboard buzzer pins

**3) ATX Power On/Off Button Pins (pin13, pin14 for Power Button)**

Connect these two pin to the spring button on the chassis to connect or disconnect the ATX power supply.

**4) Reset Button Pins ( Pin 17, Pin 18 for RESET Button )**

Connect the reset button cable to these two pins. When system fails, reset button can make the system continue to work and no need to turn on / off the power.

**5) IDE Device Status Indicator Pins ( Pin 19,Pin20 for HDD LED)**

Generally, the panel provides one IDE indicator LED. When IDE devices write or read, the LED indicator will flash, to show the device working normally. Connect the LED indicator cable to the pin. (Pin 19 is LED anode).

**2.6.12 Memory Slot ( DIMM1, DIMM2 )**

Board provides 2\* DDRIII DIMM slots supporting DDRIII 1066/1333MHz memory, up to 4GB.

**2.6.13 PCI Socket**

Motherboard provides one standard PCI port to connect expansion devices.

**2.6.14 MiniPCIE Port ( MINI\_PCIE, J11)**

Board provides one standard MINI\_PCIE port. Users can expand the Mini PCIE devices based on actual needs. If connecting MINI\_PCIE LAN card, then J11 will be the interface for this network card.

**NORCC**

**Chapter 3. BIOS  
SETUP**

## Chapter 3. BIOS Setup

### AMI BIOS Upgrading

BIOS functions as a bridge connecting hardware and operating system. Hardware and software are upgrading all the time, so when your system goes wrong, for example, your system can not support the newest CPU, you need to upgrade BIOS to keep up with the latest technology.

Operational order: FTP/f 7933T100.bin

#### Remark:

1. BIOS upgrading is only executed when your system goes wrong.
2. Please use the upgrading program in the CD-ROM provided by us or download the latest version of the upgrading program on-line
3. Please do not power off or reboot the system when upgrading, otherwise, the BIOS maybe be damaged or system may not be able to boot again.
4. After upgrading the BIOS, users need to config Load Default Manually to optimize this function
5. Please backup your BIOS before upgrading

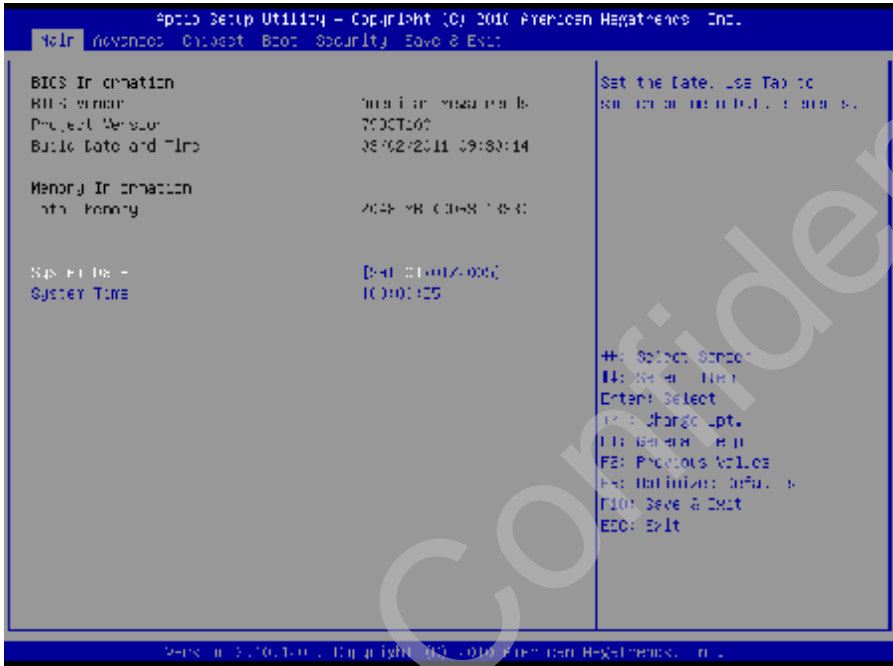
### AMI BIOS Description

When the computer is power on, BIOS will conduct self-diagnosis to its hardware on motherboard and configure hardware parameter, finally the operating system will take control. BIOS is the communication bridge between hardware and O/S. Correct configuration of BIOS is critical for maintaining system stability and its optimized performance.

### BIOS Parameter Configuration

1. Power on or reboot the computer, press <DEL> to enter into BIOS SETUP Program.
2. Use the “←→↓” to choose the option which your want to modify, press <Enter> and then the sub-menu will show.
3. Use the “←→↓” and <Enter> to modify the value; press “Enter” to modify BIOS options that you choose
4. At any time, press <Esc> can go back to the father-menu.

3.1 Main Menu



**BIOS Information**

BIOS information: such as BIOS vendor, BIOS version, BIOS build date and time.

**Memory Information**

This section shows the size of the system memory

**System Date**

Setup system date. Format: Week/Month/Day/Year

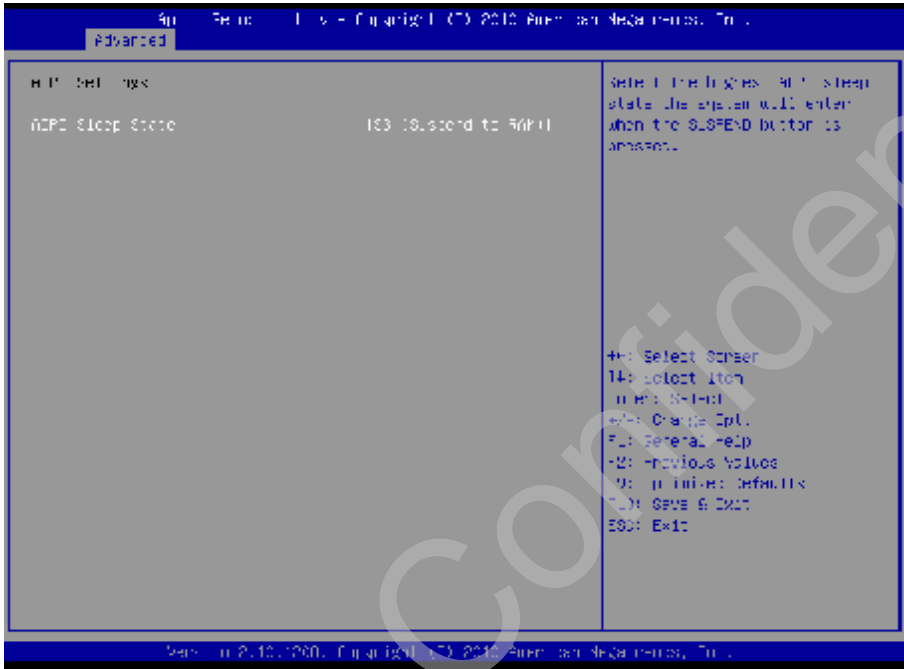
**System Time**

System time format: Hour/Minute/Second

3.2 Advanced Menu



3.2.1 ACPI Setting



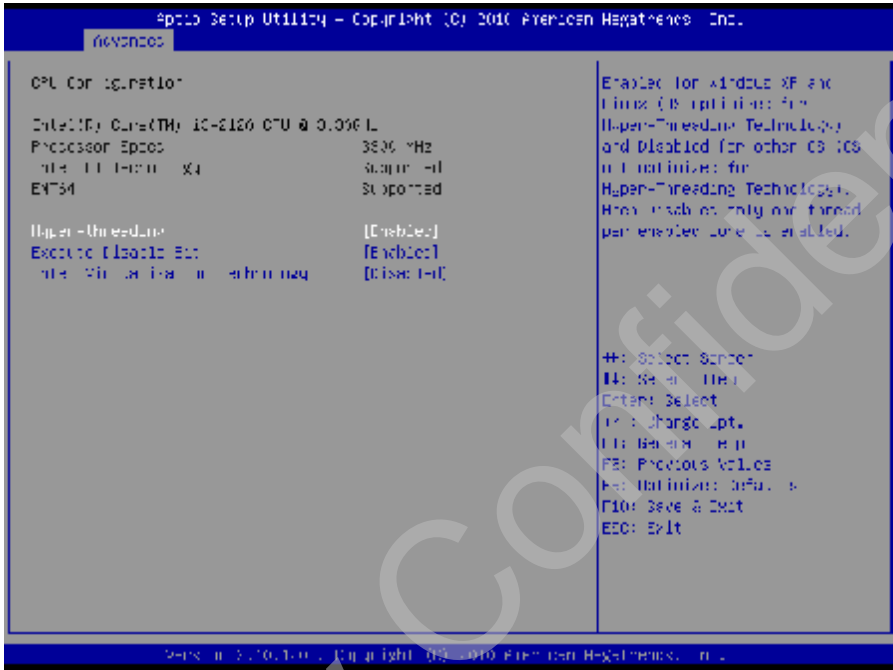
**ACPI Sleep State**

Suspend mode selection. Different modes with different power consumption.

S1(pos): CPU stops working while other devices are still connected to power supply.

S3(STR): Power is only supplied to system memory.

3.2.2 CPU Configuration



This Read-Only option contains the detailed information of CPU, including CPU manufacturer, type, frequency, ect.

**Hyper-threading**

CPU hyper-threading technology configuration.

[Enabled]: Support this function

[Disabled]: Disable this function.

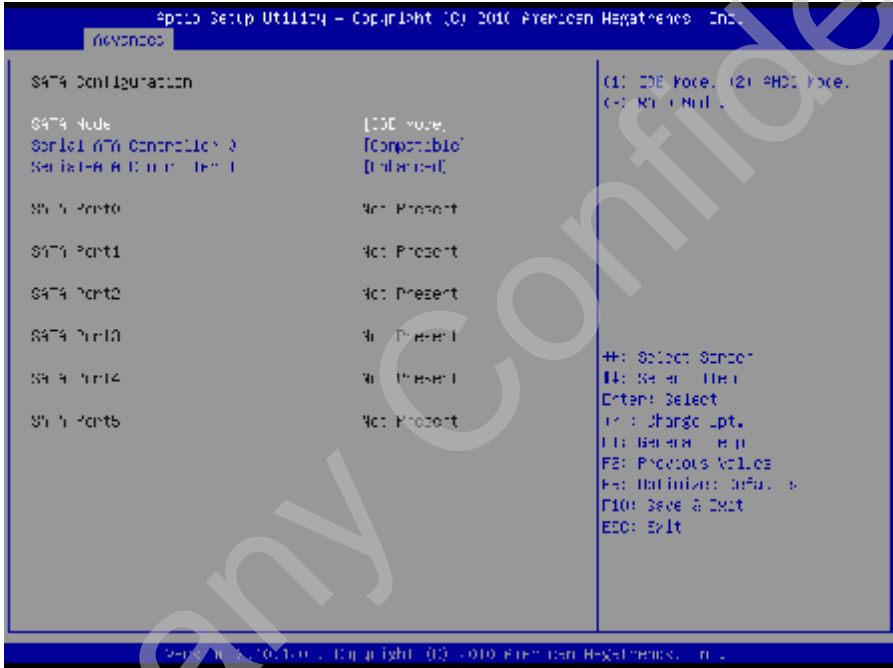
**Execute Disable Bit**

Execute Disable Bit (EDB) is a hardware-based security feature that introduced to its new generation CPU by Intel, which can help reduce system exposure to viruses and malicious code. EDB allows the processor to classify areas in memory where application code can or cannot execute. To use Execute Disable Bit you must have Windows XP SP2 operating system to support this function.

**Intel Virtualization Technology**

Intel virtualization technology enables to run multiple O/S of the same kind or different kind by using the same physical platform so as to realize the management and allocation of computer resources, maximizing the resource utilization.

**3.2.3 SATA Configuration**



**SATA Mode**

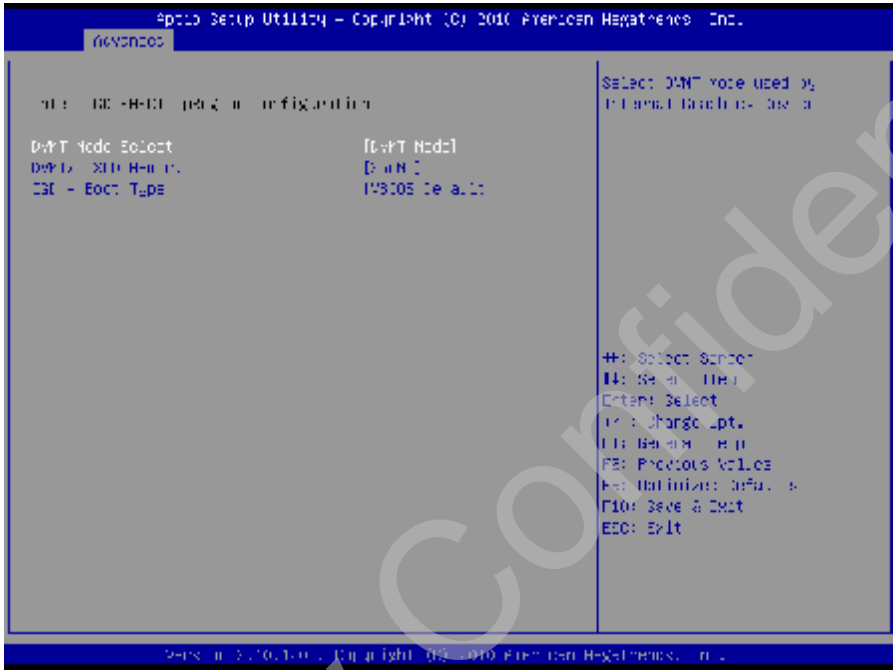
This is to choose SATA configuration mode.

**Serial-ATA Controller0/1**

This option is to select ATA configuration mode. Two options available: [Compatible] mode and [Enhanced] mode



3.2.4 Intel IGD SWSCI OpRegion



**DVMT Mode Select**

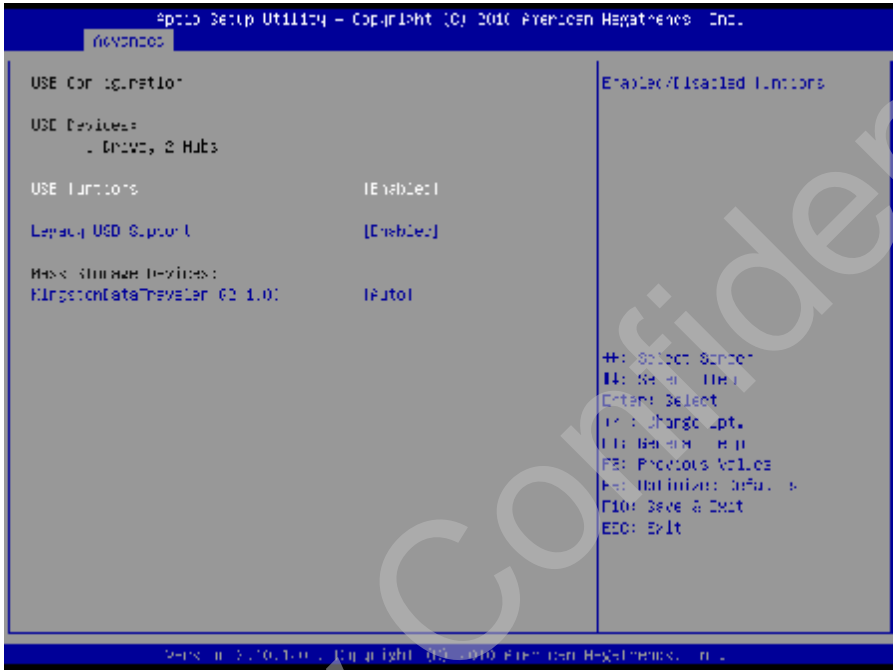
Integrated graphic card shared memory mode selection

[DVMT]: The size of dynamic shared video memory. Driver will allocate the shared video memory according to the system memory.

**DVMT/FIXED Memory**

This will show the size of shared memory.

3.2.5 USB Configuration



**USB Devices (Read Only)**

This option shows the USB devices that are connected with motherboard

**USB functions**

This option will allow the system to open or close USB ports on the motherboard. Default as[Enabled].

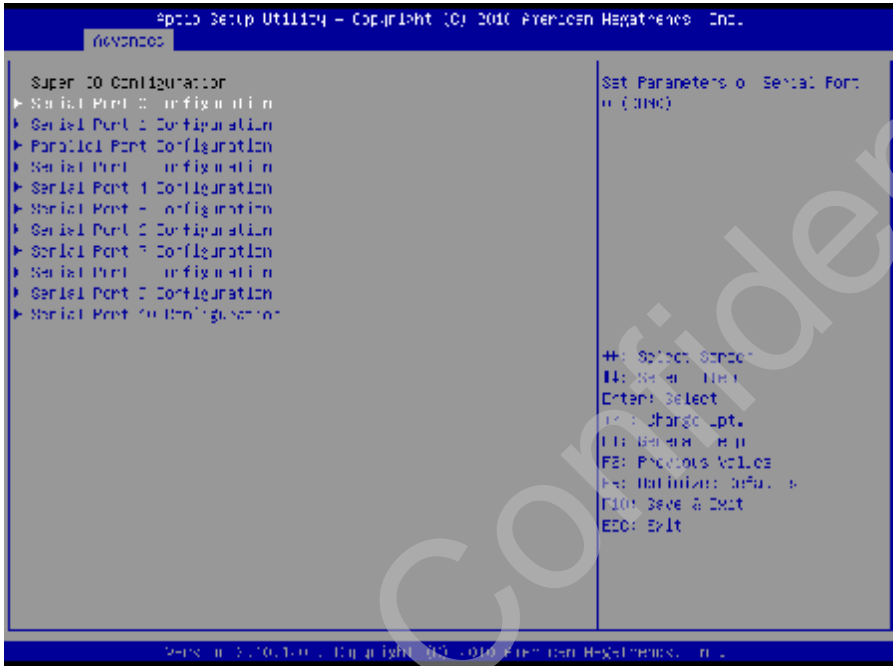
**Legacy USB Support**

If need support USB device in DOS mode: such as USB Flash Disk, USB keyboard, then select <Enabled> or<Auto>. If not , pls select < Disabled>

**Mass Storage Devices**

This option is to set the emulation type of the USB flash disk when it is activated. There are three emulation selections: floppy, HDD or CD-ROM. System defaults as [Auto].

3.2.6 Supper IO Configuration



Move cursor to “Serial Port 0 Configuration” and press “Enter” , then the following frame will show:



**Serial Port**

This option is used to close or open serial port.

[Enabled] for opening serial port

[Disabled] for closing serial port

**Device Setting (Read Only)**

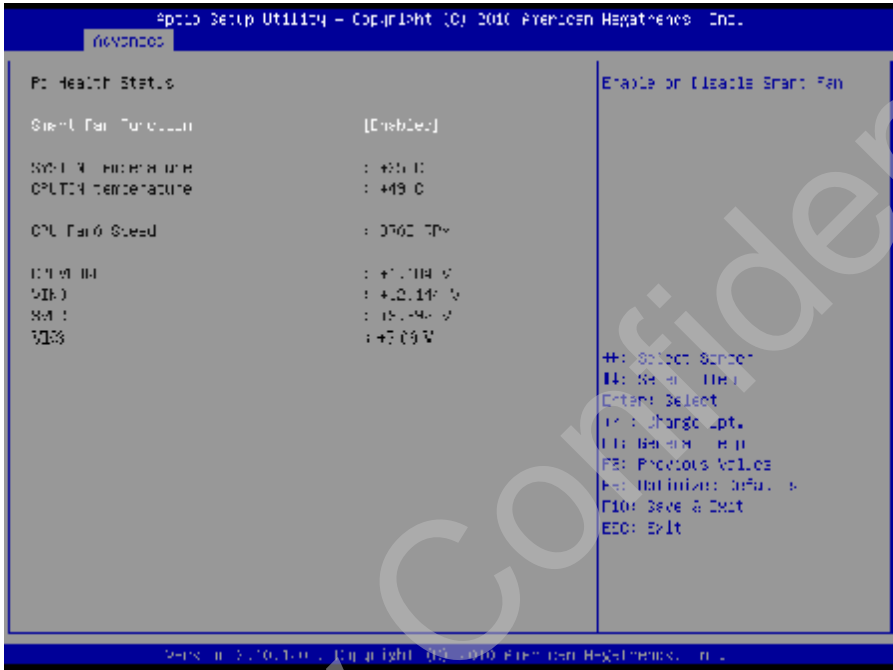
This section will show the interrupt and address of serial port.

**Change Setting**

This option is used to change the setting of serial port. System default as [Auto]

Serial Port 1-10 Configuration is the same as above

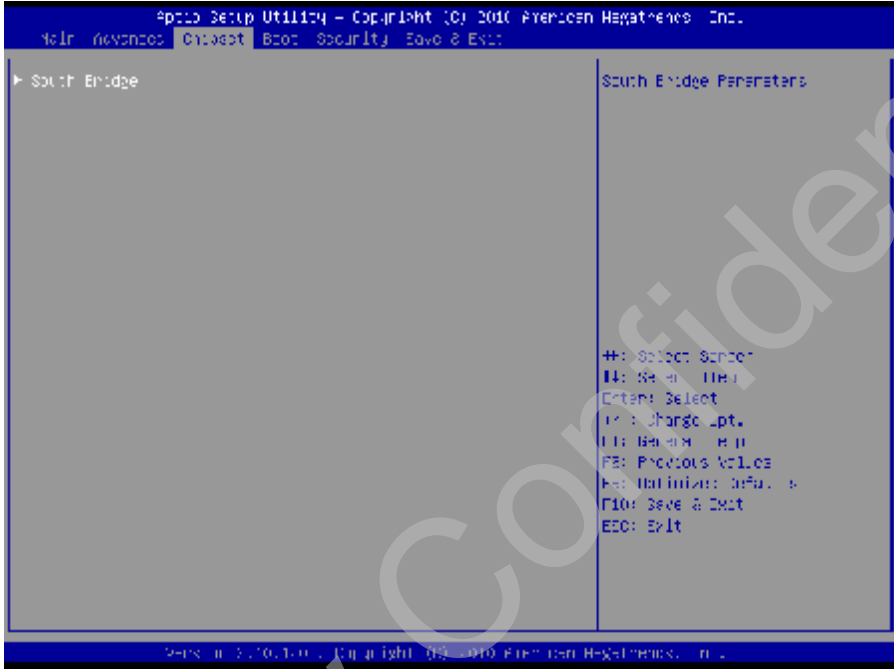
3.2.7 H/W Monitor



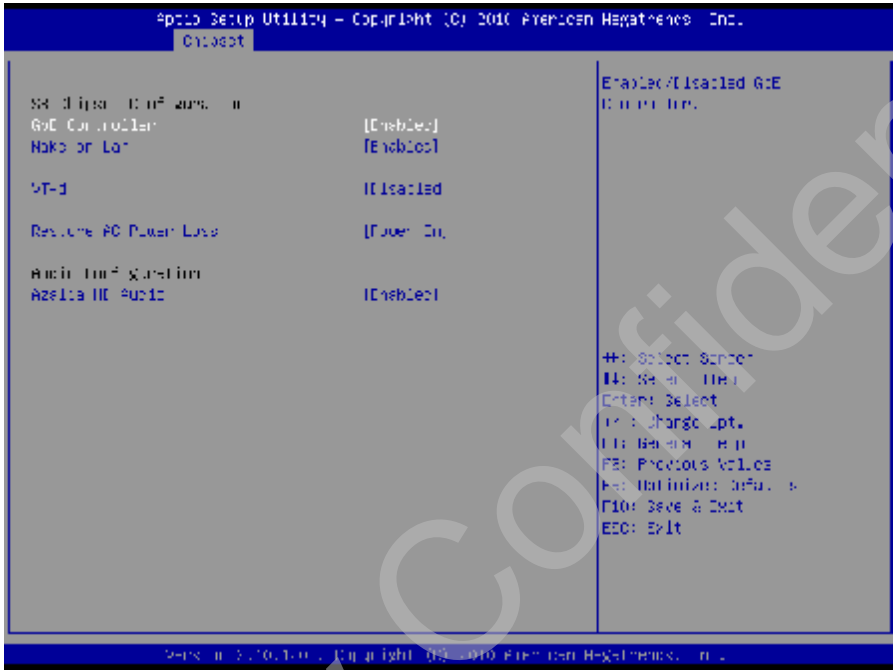
**PC Health Status**

This option is for hardware security detection. BIOS will show system current temperature, CPU temperature, the rev of FAN and related voltage. All the items has a separate preset value . The system should work within this value.

### 3.3 Chipset Menu



3.3.1 South Bridge



**GbE Controller**

GbE controller configuration

[Enabled ] for opening this option

[Disabled] for closing this option

**Wake on Lan**

Wake on Lan function configuration

[Enabled ] for activating this function

[Disabled] for closing this function

**VT-d**

Intel CPU Virtualization Technology. Available options are [Enabled] and [Disabled].

**Restore AC Power Loss**

This option is for setting the system status while connecting the power again after the AC

**Power Loss**

<Power Off>: System remains the status of power off

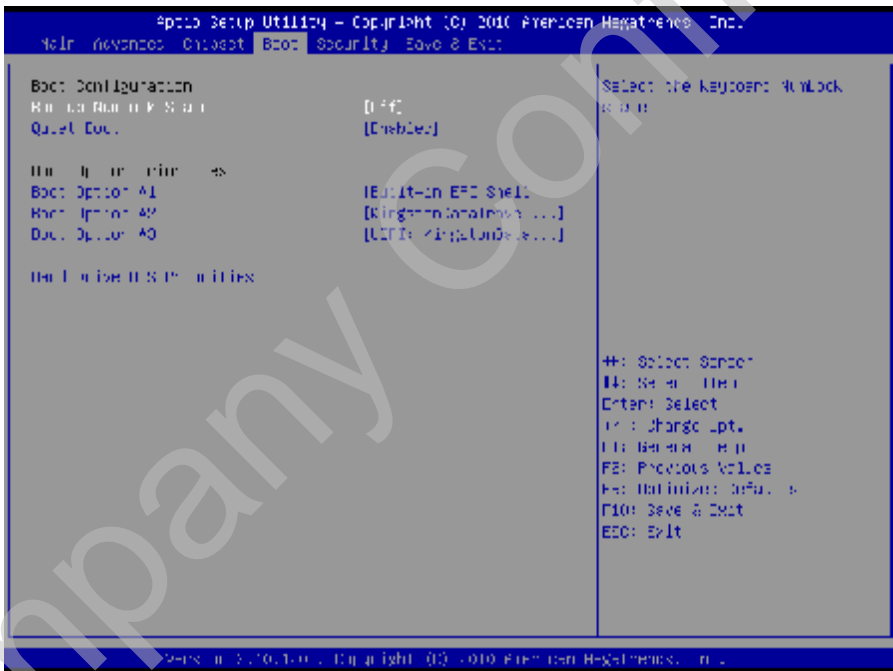
<Power On>: System will reboot automatically

<Last State>: Remain the same as the status before the power loss

**Azalia HD Audio**

This option is used to allow or prohibit the motherboard to detect and activate Azalia HD Audio device.

**3.4 Boot Menu**



**Boot Up NumLock State**

This option is for activating the Num-lock after booting the system. <ON> for unlocking the number key and <OFF> for locking the number key.

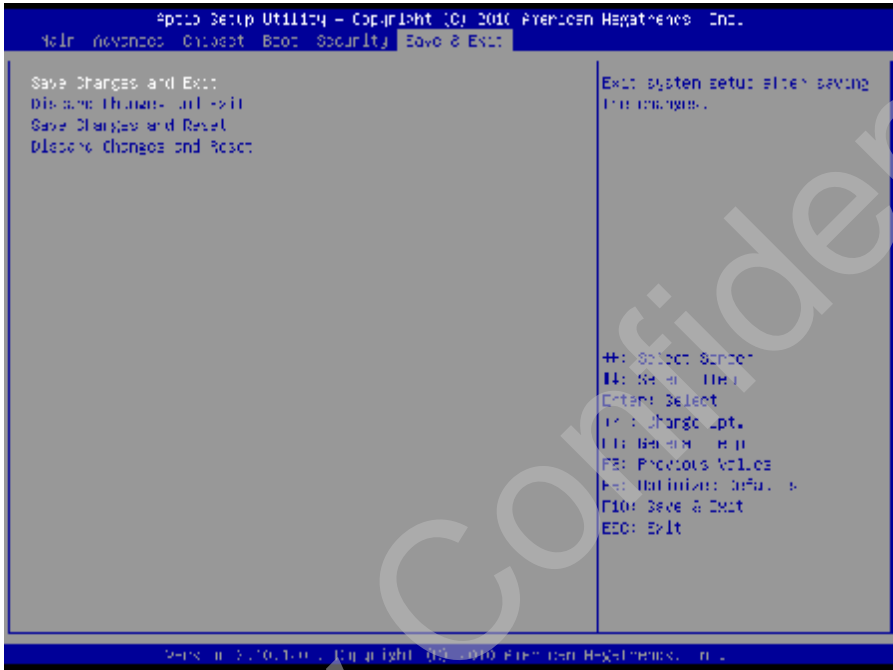
**Quiet Boot**

This option is config to show provider Logo on the screen picture when booting the computer.





### 3.6 Save&Exit Menu



#### Save Changes and Exit

Press <Enter> and <Enter> under this option, to save BIOS change and reboot system.

#### Discard Changes and Exit

Press <Enter> and <Enter> under this option to discard BIOS changes and exit the current interface.

#### Save Changes and Reset

Press<Enter> under this option to save BIOS changes and reboot the computer.

#### Discard Changes and Reset

Press<Enter> under this option to discard all the changes and reboot the computer.

**NORCC**

**Appendix**

# Appendix

## Appendix 1. Watchdog Programming Guide

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watchdog reference code (ASM)

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Set the port under DEBUG order to realize the various functions of Watchdog Timer

Port Instruction:

2EH: Address register

2FH: Data register

Example: Set Watchdog Timer for 30 seconds, DEBUG in DOS:

```
C:\>debug
-o 2e 87
-o 2e 87 ;unlock
-o 2e 2d
-o 2f 20 ;bit0=0 ,set pin as watchdog func
-o 2e 07
-o 2f 08 ;select logic device
-o 2e 30
-o 2f 01 ;activate logic device
-o 2e f5
-o 2f 00 ; set timing unit as second/ (set minute o 2f 08)
-o 2e f6
-o 2f 30 ; set Timer Count as 30h=48 sec
-o 2e aa ; lock SUPER IO register
-q
C:\>
```

-----

Press "Enter" after inputing the last line of the instruction, system will reboot automatically after 48 seconds

**Appendix 2. NOTE**

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1. This board supports Fedora 13 and RHEL 6.0 or above
2. This board doesn't support Windows Server2003/2008 VGA driver in this version

## **Appendix 3. Glossary**

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### **ACPI**

Advanced Configuration and Power Management. ACPI specifications allow O/S to control most power of the computer and its add-ons

### **BIOS**

Basic input/output system. It is a kind of software including all in/out control code interface in PC. It will do hardware testing while system is booting, and then the O/S runs. BIOS provides a interface between O/S and hardware and is stored in a ROM chip.

### **BUS**

In a computer system, it is the channel among different parts for exchanging data; it is also a set of hardware lines. BUS here refers to part lines inside CPU and the main components of system memory.

### **Chipset**

Chipset is a Integrated set of chips for executing one or more related functions. Here it refers to a system level chipset structured by Southbridge & Northbridge; It decides the structure and main functions of motherboard.

### **CMOS**

Complementary Metal-Oxide Semiconductor, which is a widely used semiconductor with the characteristics of high-speed and low-power. COMS here refers to part of space on-board CMOS RAM for saving date, time, system information and system parameter,ect.

### **COM**

Computer-Output Microfilmer.A universal serial communication interface, usually adopts normative OB 9 connector.

### **DIMM**

Dual-Inline-Memory-Modules. It is a small circuit board with memory chipset providing 64 bit

memory bus width.

**DRAM**

Dynamic Random Access Memorizer.It's a normal type of memory often with a transistor and a capacitance to store 1 bit. With the development of the technology, more and more types of DRAM with different specifications exist in computer applications. For example: SDRAM/DDR SDRAM/RDRAM.

**I2C**

Inter—Integrated Circuit , generically referred to as "two-wire interface", is a multi-master serial single-ended computer bus invented by Philips that is used to attach low-speed peripherals to a motherboard, embedded system, or cellphone.

**LAN**

Network interface.Network grouped by correlative computers in a small area, generally in a company or a building. Local area network is buildup by sever, workstation, some communications links. Terminals can access data and devices anywhere through cables, which enables users to share costly devices and resource.

**LED**

Light-Emitting Diode.A semiconductor device that shines when power supply is connected, It is often used to denote information directly, for example, to denote power on or HDD working normally.

**PnP**

Plug-and-Play. It is a specification that allows PC to configure its external devices automatically and can work independently without the manual operation by its user . To achieve this function, its BIOS should be able to support PnP and a PnP expansion card

**POST**

Self-test when power on. While the system is booting, BIOS will do an uninterrupted testing to the system, including RAM, keyboard, hard disk driver etc.to check if all the components are in normal situation and work well.

**PS/2**

A keyboard & mouse connective interface specification developed by IBM. PS/2 is a DIN interface with only 6PIN; it also can connect other devices, like modem

**USB**

It is Universal Serial Bus for short. A hardware interface adapts to low speed peripherals, and is always used to connect keyboard, mouse etc. One PC can connect maximum 127 USB devices, providing 12Mbit/s transmit bandwidth USB supports hot swap and multi- data stream, namely, you can plug USB devices while system is running, system can auto-detect and makes it work on.





敬请参阅

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