华北工控®

BIS-6620

Mini PC

USER' Manual V1.0

USER'Manual

Industrial & Communication Computer

BIS-6620

Mini PC

USER' Manual V1.0

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Web：www.norco.cn

Declaration of conformity

CE

Shenzhen NORCO Intelligent Technology Co.,Ltd.

declares that the product

BIS-6620 Mini PC

(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

☑ EN 55022	Limits and methods of measurements of radio disturbance Characteristics of information technology equipment
☑ EN 50081-1	Generic emission standard Part 1: Residential, commercial and light industry
☑ EN 50082-1	Generic immunity standard Part 1: Ressidential, commercial and light industry

European Representative:

Shenzhen NORCO Intelligent Technology Co.,Ltd.

Signature: _____ Place/Data: HONG KONG/2009

Printed Name: Anders Cheung Position/Title: President

Declaration of conformity

Trade Name：Shenzhen NORCO Intelligent Technology Co.,Ltd.

Model Name：BIS-6620

Responsible Party：Shenzhen NORCO Intelligent Technology Co.,Ltd.

Equipment Classification：FCC Class B Subassembly

Type of Product：BIS-6620 Mini PC

Manufacturer：Shenzhen NORCO Intelligent Technology Co.,Ltd.

Supplementary Information:

This device complies with Part 15 of the FCC Rules.Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Signature: _____

Data: 2009

Copyright

With the exception of showing the accessories of product configuration, this manual do not create any commitment of our company. We retained the rights to change it without prior notice. We will not be responsible for any installation, the result of improper use of direct, indirect, intentional or unintentional damage or hidden dangers.

Before buying products, please learn about product performance from the seller to see if it is in line with your needs. NORCO is a registered trademark of Shenzhen NORCO Intelligent Technology CO.,Ltd. Other trademarks involved in this manual, their ownership are owned by its respective owners.

Safety Instructions

1：Please read these safety instructions carefully.

2：Before inserting or removing expansion cards, re-assembling or re-configuring, disconnect the computer and peripherals from their power sources to prevent electric shock or system board damage.

3：Before attempting to move the product, the system must be powered-down and the power cord must be disconnected from the power source.

4：Before connecting or disconnecting any signal line, first turn off all power resources and disconnect the power cord from power source.

5：To help avoid possible damage to system boards, wait at least 30 seconds after turning off the computer before re-turning on the computer.

6：Use cross head screwdriver to operate. A magnetic screwdriver is recommended (magnet to collect screws).Do not leave any tools or components inside the chassis.

7：Assure abundant cooling and streamline ventilation.

8：If anything unexpected exists during Equipment used, please contact the professionals.

Contents

Packing List

Thank you very much for choosing our products. Please check your package completely as the following item checklist first, if you find any components lost or damaged, please contact your retailer.

■ BIS-6620	1pcs
■User's Manual	1pcs
■Drive Disk	1pcs
■Power cord	1pcs
■Power adapter	1set
■1 to 4 serial port（optional）	1pcs
■Screw	1bag

Chapter 1
General Information

Chapter 1 General Information

1.1 Introduction

BIS-6620 is a compact thin client, using very popular Intel' Menlow platform, brings powerful logic of computing function, and complete machine maximal power consumption is 5.5W, with fanless,SATA,SD and CF card storage modes.The diversity of display terminals provides customers more choices.Customized expansion slot can enhance the expansion of the external elastic，BIS-6620 can be widely used in high-definition media player, advertising machine, LCD large screen,set-top boxes, healthcare, finance, education and other terminal markets and industrial solutions.

1.2 Features

● Mini-prifile, ultra-low noise, fanless

BIS-6620 is fanless, the noise level is 30db when operating。Body dimension is 120mm×120mm×40mm, compact enough for using in a small spaces.

● Onboard Intel Atom processor

Onboard lower-power , high-performance Intel Atom Z5XX processor，power consuptionis 2.5W，When it match with the high-speed chipset of Poulsbo SCH platform, they constitute the best solution

● Interface

BIS-6620 I/O ports include：Line-OUT ，MIC-out，USB2.0 port，RJ-45 netwrok ports。BIS-6620 also provide VGA+S-Video or DVI+4COM output （VGA & DVI is optional）。

● Installatione

BIS-6620 meet VESA MOUNT MIS-D standard，can be installed on the back of liquid crystal equipment or placed on the desk.

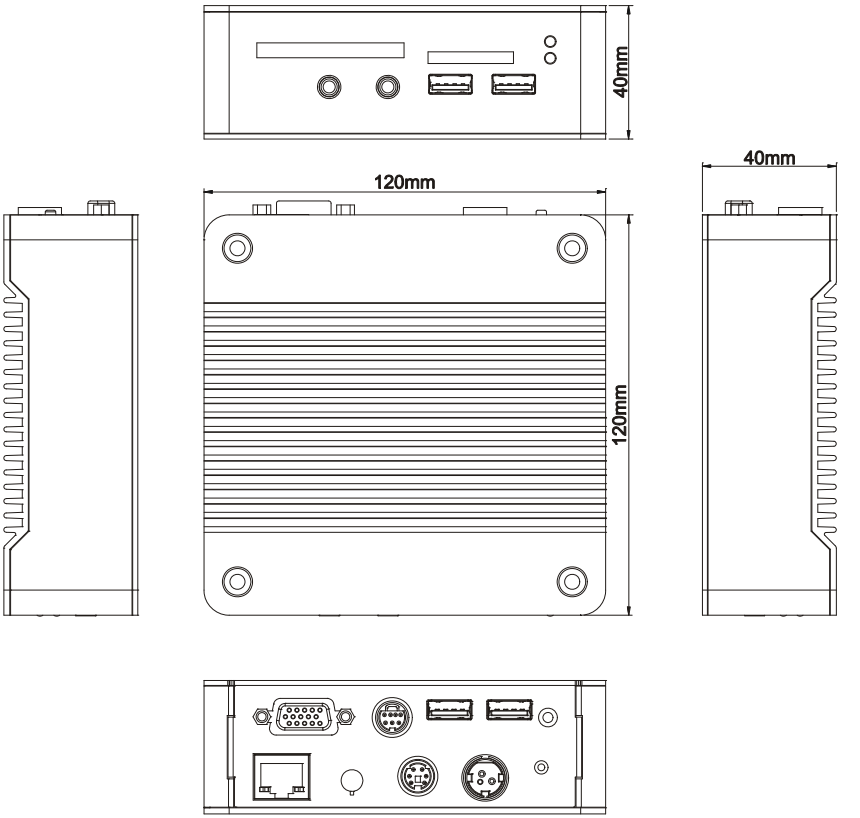
1.3 Hardware specification

System			
Model Number		**BIS-6620Ⅰ**	**BIS-6620Ⅱ**
Motherboard		BPC-7652+AFC-440V	BPC-7652+AFC-340
Processor		Intel Atom Z510(1.1GHz FSB400MHz)/Z530(1.6GHz FSB400MHz)	
Chipset		Intel poulsbo SCH	
Display	Interface	VGA+S-VIDEO	DVI
	Controller	Intel Poulsbo Integrated GMA500	
	Memory	Dynamic sharing 256MB system memory for graphics display	
System memory		1x200Pin SO-DIMM，max.up to 2GB。 **Remark**：SO-DIMM can support 2 Rank,the capacity is 512Mb,1Gb &2Gb，suggest use RAM of x16 memory chips	
Storage	SSD	1x CF card slot,support Type II CompactFlash,1x SD card socket	
	HDD	1x1.8” HDD tray, support Ultra DMA 100/66/33&SATA II HDD	
I/0	I/O chip	Winbond W83627DHG	
	PS/2	1x MS/KB	
	COM	--	4xCOM
	USB	4x USB2.0	2x USB2.0 In front
	Audio	1x Mic-in, 1x line-out	
	LPT	---	
Ethernet		Realtek RTL8111C, 10/100/1000Mbps, 1x RJ45	
WIFI		USB mode	
Extension interface		--	
System Control		Switch button	
LED Guider		Power supply , hard disk LED	
Power supply		DC +12V	

Cooling System	fanless
OS	Windows Vista/XP/CE/XPE，Linux
Circumstance and Physical characteristics	
Working Temp.	0℃～60℃
Storage Temp.	-40℃～85℃
Relative Humidity	5%～95%, 40℃, no-condensing
Vibration	0.5g rms/5~500Hz/ random assignment
EMC	CE/FCC Class B
Product Dimension	120mm×120mm×40mm (L×W×H)
Package Dimension	275mm×255mm×115mm (L×W×H)
Net Weight	0.7KG
Gross Weight	1.5KG
Matrial	High tension steel
Surface preparation	Sand blast and oxidation
Installation	Wall-mount or Desktop
Color	Silver gray/Black

1.4 Product Dimension

Dimension：120mmx120mmx40mm（LxWxH）



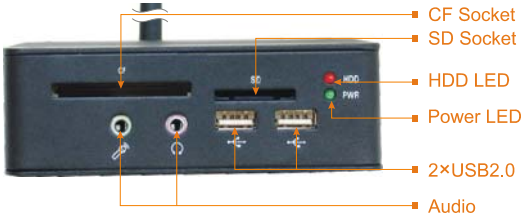
Chapter 2

Hardware Functionality

Chapter 2 Hardware Feature

2.1 External interface direction

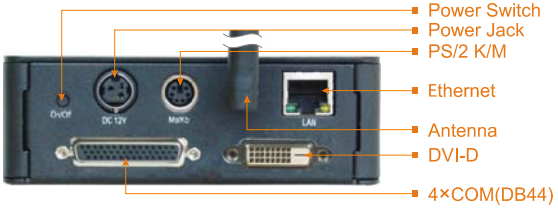
1：BIS-6620 Front View



2：BIS-6620 Rear View

BIS-6620Ⅰ：

BIS-6620Ⅱ：



2.2 Jumper setting

Before the hardware installation, please follow the jumper setting guide.

Tips：How to identify jumper, PIN 1 of interface, observation the word mark of plug socket ，will use “1” or bold lines or triangular symbols；Take a look at the back of PAD,square pad as the first PIN 1; All of jumper PIN 1 has a white arrow guide.

2.2.1 CMOS Content setting and hold setting（JCC）

CMOS power be from onboard button battery. Clean CMOS will lead to a permanent elimination of the previous system setting and set 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，Then restore the default setting of Pin2 and Pin 3.

（3）Turn on the computer, then press DEL key into the BIOS, you also can use optional load optimized defaults.

（4）Save and exit setting.

Setting	JCC
1-2	Clear CMOS contents, all the BIOS settings back into the default of factory
2-3	Normal working state, the default setting

⚠ Please do not clear CMOS when computer boot up.

2.2.2 COM2 jumper function setting（J1、J2、J3）

BIS-6620Ⅱ has COM2 jumper，which on the board of AFC-340。J1、J2、J3 be used for COM2 setting，COM2 support RS 232/RS 422/RS 485 mode，You can select it according to your need，The default mode is RS232。

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

2.3 Motherboard interface description

2.3.1 CF card slot（CF）

BIS-6620Ⅰ/Ⅱ provide 1x 50Pin standard CF card slot，can support TypeⅠ/ⅡCF card.

2.3.2 SD reader slot（SD）

BIS-6620Ⅰ/Ⅱ provide 1x SD card slot，can support standard SD/MMC card.

2.3.3 USB port（USB1，USB2，USB3）

Motherboard provides two santard USB ports（USB1,2） and 1* 4Pin USB port（USB3），It is compatible with USB2.0 specification, support for USB devices plug and play compliant。USB3 port is 4pin, which can be used for optional WIFI card.

USB1，2 interface defination

Pin	Signal
1	VCC
2	USB_D-
3	USB_D+
4	GND
5	GND
6	GND

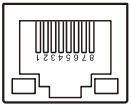
Pin	Signale
1	VCC
2	USB3-
3	USB3+
4	GND

2.3.4 Audio（SPK OUT，MIC）

BIS-6620Ⅰ/Ⅱ using ALC888 Audio decorder chip, Onboard be with one audio-out and one MIC jack.

2.3.5 Ethernet Port（LAN）

BIS-6620Ⅰ/Ⅱ using Realtek RTL8111C/D chip, be with one RJ-45 Gigabit Ethernet interface. Green LILED and Yellow ACTLED of the interface show LAN's action.

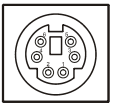


RJ45 LAN LED status desription

LILED(Green)Status		function	ACTLED(yellow) status	Function
Blink	Greeen（100Mbps）	Effective links	Blink	Network has been connected, the ongoing data transmission
	Yellow（1000Mbps）			
Off		Invalid link or close	Off	No network connection or no data transfer

2.3.6 Keyboard and mouse interface（Ms/Kb）

BIS-6620Ⅰ/Ⅱ provides one PS/2 combination cable for keyboard and mouse，Please get it from our accessories box.

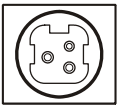


Ms/Kb:

Signal	Pin
KB_DATA	1
MS_DATA	2
GND	3
VCC	4
KB_CLK	5
MS_CLK	6

2.3.7Power interface（DC 12V）

BIS-6620Ⅰ/Ⅱ is +12 V single power supply input.



Pin	Signal
1	+12V
2	GND
3	NC

2.3.8 SATA port（SATA）

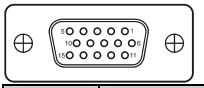
It provides a SATA interface, transfer rate up to 300MB/s.

Pin	Signal
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND

2.4 BIS-6620Ⅰ Expansion board interface

2.4.1 VGA port（VGA）

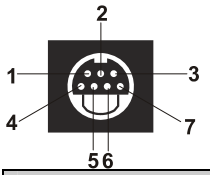
Standard 15Pin VGA port is suitable for all of VGA displays。



Pin	Signal	Pin	Signal	Pin	Signal
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	SLC

2.4.2 SVIDEO Port（SVIDEO）

BIS-6620Ⅰ Provides one S-VIDEO port for connecting LCD device, which on the realization of video playback.



Signal	Pin
s_video_y	1
s_video_cvbs	2
GND	3
s_video_pr	4
GND	5
GND	6
GND	7

Remark：It can support TV-OUT，S-VIDEO and Analog HDTV modes，We can provide different types of wire under your needs. The specific allocation is:

TV-OUT====== s_video_cvbs

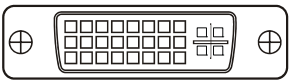
S-VIDEO==== s_video-y, s_video_pr

Analog HDTV======= s_video-y(Y), s_video_cvb (Pb), s_video_pr (Pr)

2.5 BIS-6620Ⅱ Expansion board interface

2.5.1 DVI interface（DVI）

BIS-6620Ⅱ Provides a DVI-D interface for connecting LCD displays.

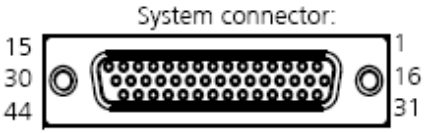


Signal	Pin		Signal
TDC2#	1	2	TDC2
GND	3	4	NC
NC	5	6	SC-DDC
SD-DDC	7	8	NC

TDC1#	9	10	TDC1
GND	11	12	NC
NC	13	14	VCC
GND	15	16	HP-DETECT
TDC0#	17	18	TDC0
GND	19	20	NC
NC	21	22	GND
TLC	23	24	TLC#
GND	25	26	GND
NC	27	28	NC

2.5.2 Serial Port（COM）

BIS-6620Ⅱ provides serial port，expansion board of AFC-340 be with one DB44 interface, which can be extented 4 serial ports，There is one adapter of 1 to 4 DB9 COM in the accoreies box



Pin	Controller	Defination	Pin	Controller	Defination
1	A-1	DCD3	23	C-3	TXD5
2	A-2	RXD3	24	C-4	DTR5
3	A-3	TXD3	25	C-5	GND
4	A-4	DTR3	26	C-6	DSR5
5	A-5	GND	27	C-7	RTS5
6	A-6	DSR3	28	C-8	CTS5
7	A-7	RTS3	29	C-9	RI5
8	A-8	CTS3	30	NC	GND
9	A-9	RI3	31	D-1	DCD6
10	NC	GND	32	D-2	RXD6

11	B-1	DCD4	33	D-3	TXD6
12	B-2	RXD4	34	D-4	DTR6
13	B-3	TXD4	35	D-5	GND
14	B-4	DTR4	36	D-6	DSR6
15	B-5	GND	37	D-7	RTS6
16	B-6	DSR4	38	D-8	CTS6
17	B-7	RTS4	39	D-9	RI6
18	B-8	CTS4	40	NC	GND
19	B-9	RI4	41		NC
20	NC	GND	42		NC
21	C-1	DCD5	43		NC
22	C-2	RXD5	44		NC

Chapter 3

Hardware Installation

Chapter 3 Hardware installation

Before the computer installation, we should

Follow the safety principles, which will prevent the computer from potential damage and ensure our personal safety.

1：Make sure the computer is not connected power supply

2：It is best to wear anti-static gloves when we contact motherboard or components (such as RAM.)

3：Prepare a small cross screwdriver

3.1 Remove machine upper cover

1：Use a screwdriver to open the bottom of BIS-6620

2：Seize the host cover of both sides and force up to mention.Then the lid be removed.

3.2 Memory Module Replacement/Installation

BIS-6620 provides one 200Pin DDR Ⅱ SO-DIMM slot，support DDR Ⅱ 400 / 533MHz RAM. Max.up to 2GB. You can choose the suitable one. The installation procedure as follows:

1：Open the console lid.

3：Remove the motherboard and expansion board separately.

4：Choose the suitable memory.

5：Make sure the memory into the right SO-DIMM slot.

6：And then push the memory down slowly until “clicks” sound be heard.

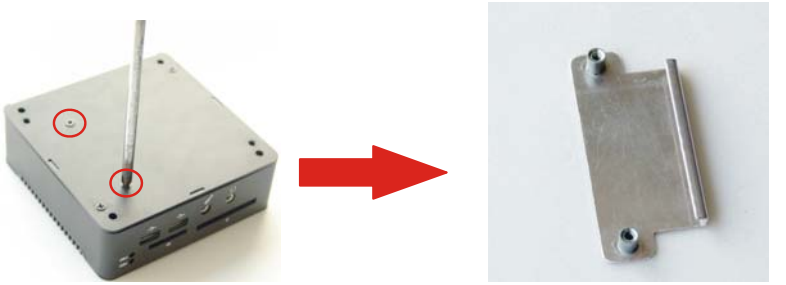
3.3 Hard drive replacement/installation

The machine provide a 1.8” HDD bays, the expension board provides one SATA ports. You can choose the suitable HDD. The steps of installation as follows:

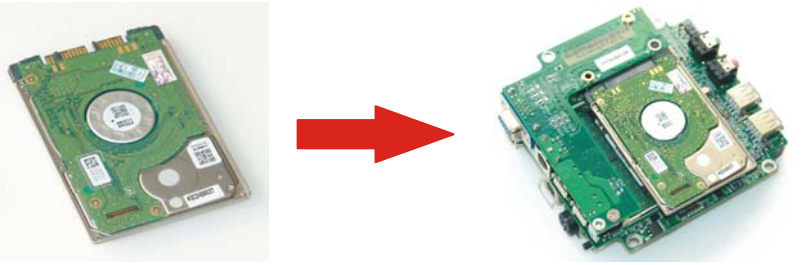
1：Turn off the power, unplug the power cable.

2：Using the screwdriver to open and remove the chassis cover

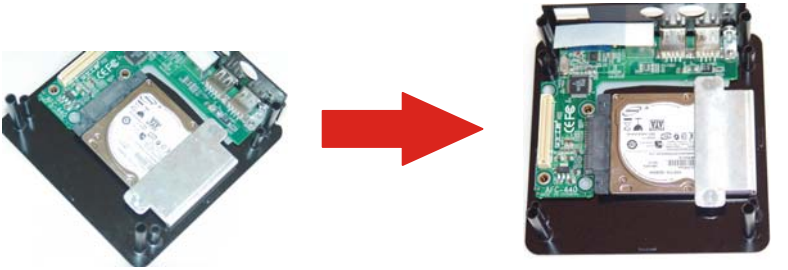
3：Please take down the HDD drive bay.



4：Choose the suitable 1.8” HDD, and inset HDD to the SATA interface of expansion board.



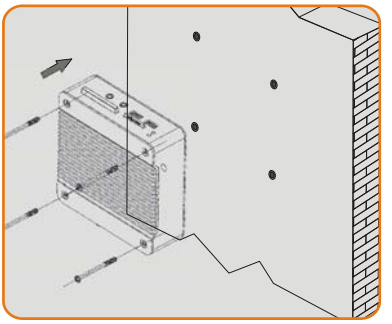
5：Install the finished expansion board into chassis and fix HDD with the drive bays.



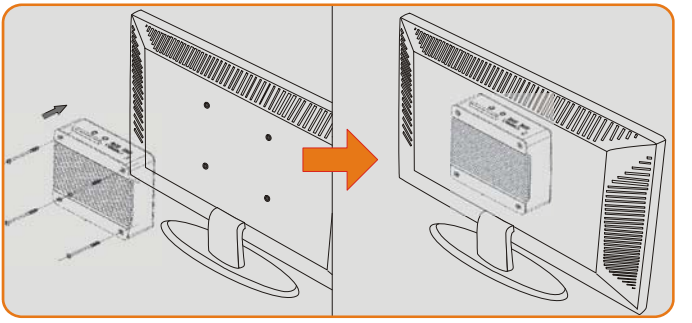
3.4 Wallmount/ Monitor installtion

BIS-6620 meet VESA MOUNT 100 specification.with international standard installation holes, it can be used for rackmount, wallmount and matched with LCD and other devices.

1：The following diagram shown the Wallmount of machine in accordance with screw holes



2：The following diagram shown machine of screw holes will be installed hehind the display.



3.5 Power Connection

1：Connect the power code to the socket of the back end of the power connector

2：Connect the power cord plug to the 3-slot power supply plug rafts.

Chapter 4
BIOS Setup

Chapter 4 BIOS Setup

AMI BIOS upgrade:

It is true that hardware and software are upgrading all the time. When your IPC can not support the newest processor (for example), you should upgrade the BIOS to try to keep up with the latest technology. Upgrading (or flashing) the BIOS is not an easy attempt. To make sure upgrade succeed, please follow the instruction below:

Set jumper JAV as open

AFUDOS.EXE is the program for BIOS to modify and upgrade，need to be run in DOS mode.

Use boot disk load DOS, run Amiflash.exe and write the newest file:XXXX.ROM into the Flash IC.

Order format:A：\ Afudos XXXX.rom

If you need to add other parameters, please add <space>/? after the order format.

Example: Afudos 7652I100.rom /P /B /C /N /X

Remarks:

1. Upgrading BISO may cause your system crash, so please operate carefully.
2. Please use the upgrading program in the CD-ROM provided by us
3. Please do not power off or reboot the system when upgrading, otherwise, the BIOS maybe be damaged.
4. Please backup your BIOS before upgrading

AMI BIOS Description:

AMI BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed memory (CMOS RAM) so that it retains the setup information when the power is turned off

AMI BIOS Setup

Power on your computer, when this information display in your screen: Del->SETUP please press “DEL”, then it will enter BIOS setup interface.

1. Power on or Reset computer.

2. When "Press <Del> to enter setup" in screen, please press <Del>.

3. Use the "←↑→↓"to choose the option which your want to modify, press <Enter> and show the sub-menu.

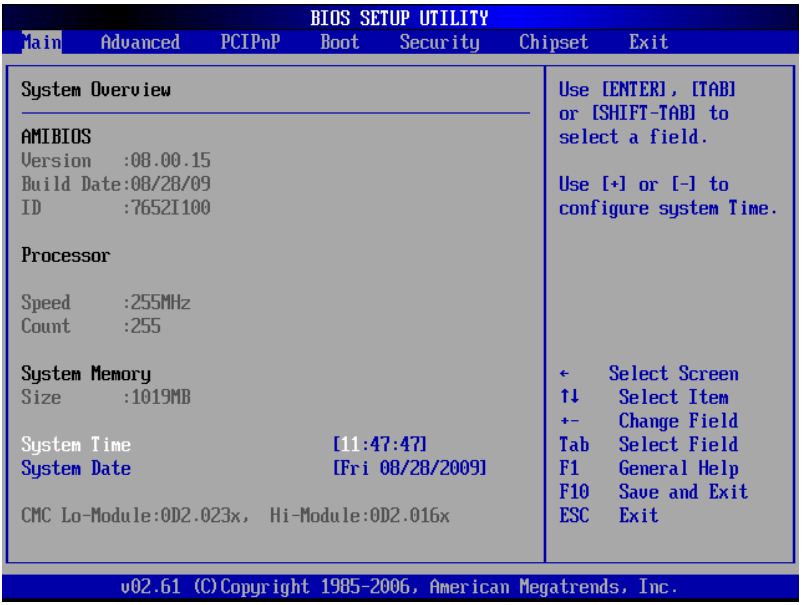
4. Use the "←↑→↓"and <Enter> to modify the value.

5. At any time, press<Esc> can back to the father-menu

Note! The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability。The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen。

When the SETUP program starts, you can see the CMOS Setup Utility Main screens are as follows:

3.1 Main



AMI BIOS

It displays the BIOS version, update date, identification numbers, which cannot be modified by users, for they are options for reading only.

Processor

It displays the processor CPU types, tempos, quantity you are using, and they are all options for reading only.

System Memory

It displays the memory size. options for reading only.

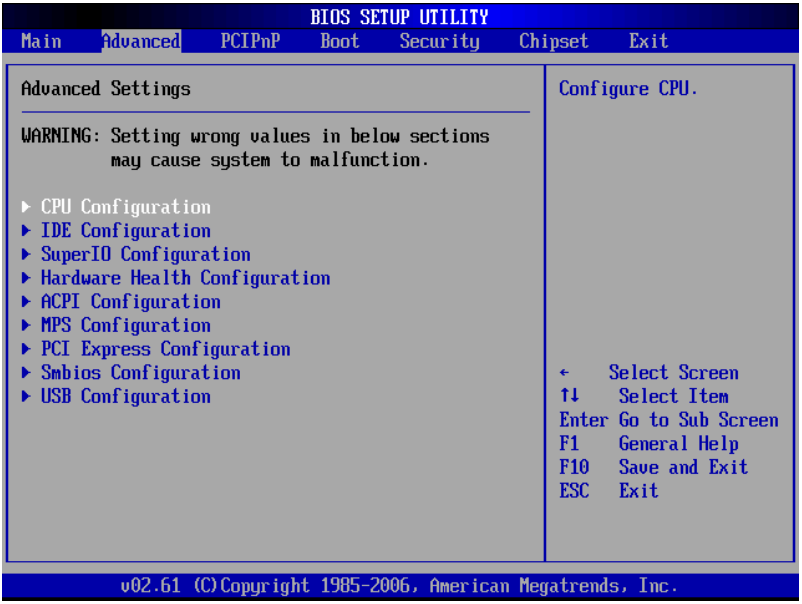
System Time

Select this option, and use < + > / < - > to set the current tine. And it represents in a format of hour/minute/second. The rational range of all options is: Hour (00-23), Minute (00-59) and Second (00-59).

System Date

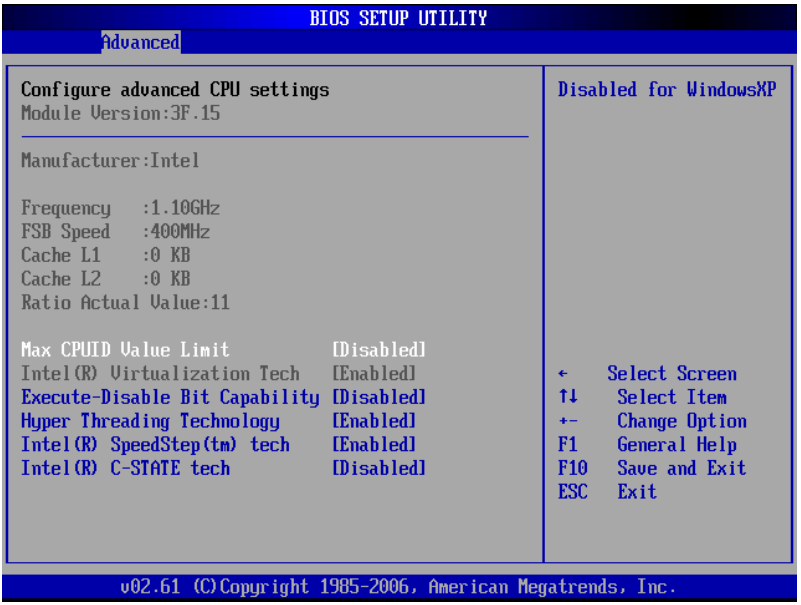
Select this option, and use < + > / < - > to set the current date in a format of month/date/year. The rational range of all options is: Month (Jan - Dec), Date (01-31), Year (to 2099 maximum) and Week (Mon --Sun).

3.2 Advanced



WARNING: Setting wrong values in below sections may cause system to malfunction:

3.2.1 CPU Configuration



This sub menu includes CPU particular information, such as manufacturer, type, frequency, FSB speed, cache L1, cache L2 etc.

Max CPUID Value Limit

when you are using the operating system which doesn't support extended CPU ID function, please set this project "Enabled]。The settings are [Disabled] [Enabled]。

Intel(R) Venderpool Technology

VT also named Intel Virtualization Technology, a system imaging technology used in Intel CPU. It can run more than one OS in one PC, one processor runs one OS.

Execute Disable Bit

This item specifies the Execute Disable Bit Feature. The settings are Enabled and Disabled. The Optimal and Fail-Safe default setting is Enabled. If Disabled is selected, the BIOS forces the XD feature flag to always return to 0.

Hyper-Threading Technology

That is to open Intel P4-C processor with Hyper-Threading feature., which based on CPU ,chipset ,BIOS and OS can support this technology. When you open Hyper Threading, we suggest you use WinXP or Linux 2.4 version。If you use some OS that cannot support Hyper Threading or supporting is not enough good, your system performance will degradation when you open Hyper-Threading Technology.

Intel(R) Speedstep (tm) tech

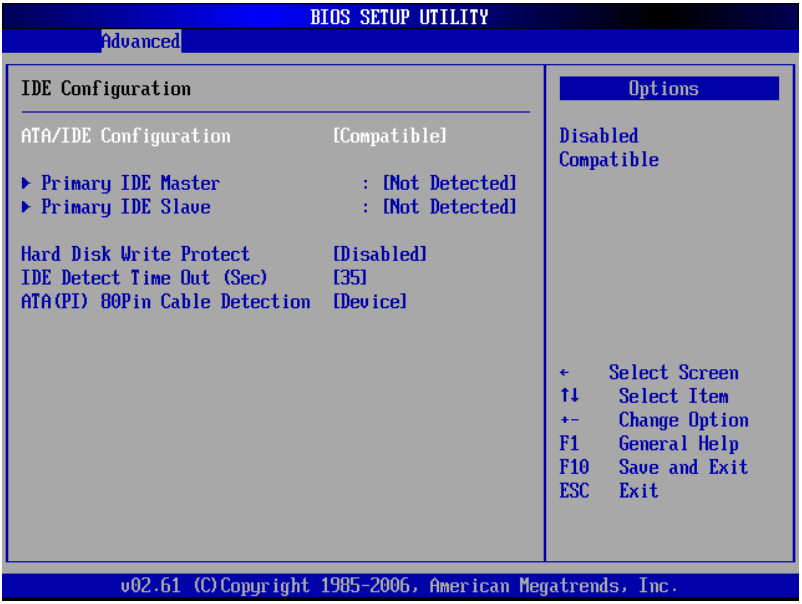
No matter the computer is on AC or battery to run, Intel(R) speedstep allows you to set the performance standards of Microprocessor technology. And it will be achieved after you installed CPU of speedstep technology.Setting option is: [Enabled],[Disabled].

Intel(R) C-State tech

C1 config/Hard C4 Config

CPU C state status selection. Options: <Disable(default)>,<C2>,<C3>,<C4>,<Deep C4>，<C6>.

3.2.2 IDE Configuration



ATA/ IDE Configuration

Move the cursor to this option, and press <Enter> key to appear four options: Disabled, P-ATA Only (parallel IDE interface), S-ATA Only (serial IDE interface), P-ATA & S-ATA (parallel and serial hard disk coexisting mode, and either of the modes can be used). The user may select the parallel or serial IDE interface according the configuration of the hard disk.

1. In P-ATA Only: S-ATA Running Enhanced Mode helps open or close serial disk support in P-ATA Only state, in which Yes means support while No means not support. P-ATA Channel Selection is the support for parallel hard disks, Primary is to support two devices of IDE1 channel, Secondary is to support two devices of IDE2 channel, Both is to support four devices of both IDE1 and IDE2. S-ATA Ports Definition is to define which is master and which is slave. Therefore, in this mode, it can support 6 ATA devices maximum.

2. In S-ATA Only: It only supports S-ATA device. Now do not connect the P-ATA device. Otherwise, it may lead to the system misstatement. It can support 2 serial equipment maximum. Similarly, S-ATA Ports Definition is also to select the relationship between the master and the slave.

3. In P-ATA & S-ATA: Combined Mode Option is the selection in a combined manner. When

the 1st channel of P-ATA is selected, IDE1 is the master channel, IDE2 will be mapped as S-ATA channel, and IDE2 will be unable to be used. Instead, it supports two parallel and two serial devices of IDE1. When S-ATA 1st Channel is selected, S-ATA device will be mapped to IDE1. Now, IDE1 cannot be connected to devices, but IDE2 can be used, and it still supports 4ATA devices. The S-ATA Ports Definition is also the selection of relationship between the master and the slave.

Primary/ Secondary IDE Master/ Slave

This four options use to choose IDE device's type etc. include Type, LBA/Large Mode, Block (Multi-Sector Transfer), PIO Mode, DMA Mode, S.M.A.R.T.（Self-Monitoring, Analysis and Reporting Technology）, 32Bit Data Transfer these seven option, we suggest you choose Auto, the system will auto-search devices, if you want Config by yourself, make sure all parameter of the HDD support this mode first..

Hard Disk Write Protect

Setup HDD Write Protect function: <Enabled> Write Protect, HDD read only: <Disabled> HDD can write or read.

IDE Detect Time Out（Sec）

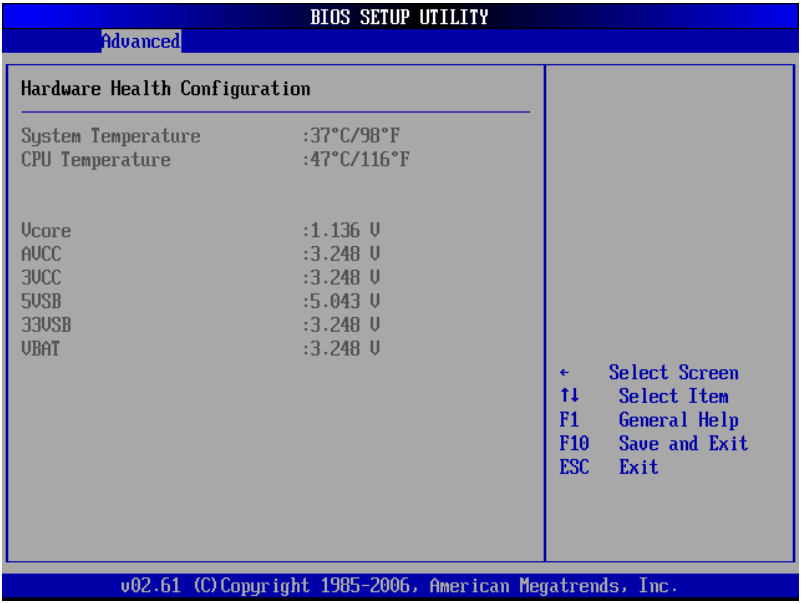
This option for BIOS searching IDE device in appointed time (by seconds).

ATA（PI）80Pin Cable Detection

Setup detect ATA(PI)80pin cable: 80pin ATA cable is for Ultra ATA/66,Ultra ATA/100 and Ultra ATA/133 .Standard cable is 40pin , can not support high transfer rate. These two cables is pin compatible.

<Host & Device> will reference the cable type both IDE controller and IDE device. Also it is default value.<Host> use the cable type used by IDE controller；<Device> use the cable type used by IDE device.

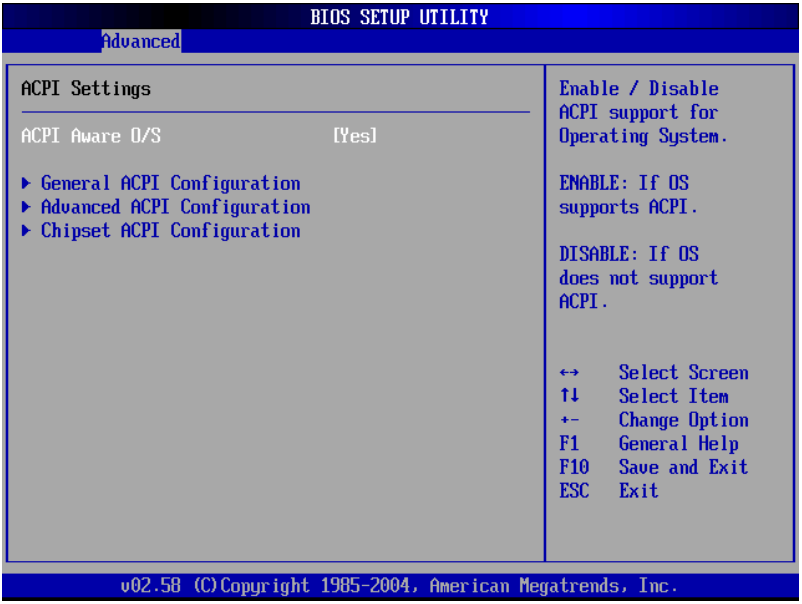
3.2.3 Hardware Health Configuration



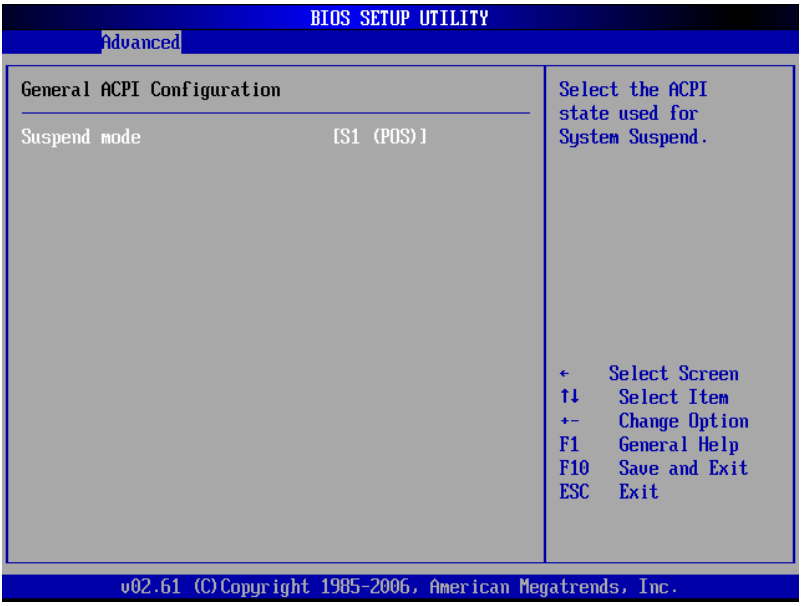
H/W Health Condiguration

Enable/Disable the onboard hardware monitor controller. If this option is enabled, the BIOS and OBS utility can get the system board's health information from hardware monitor controller.

3.2.4 ACPI Configuration



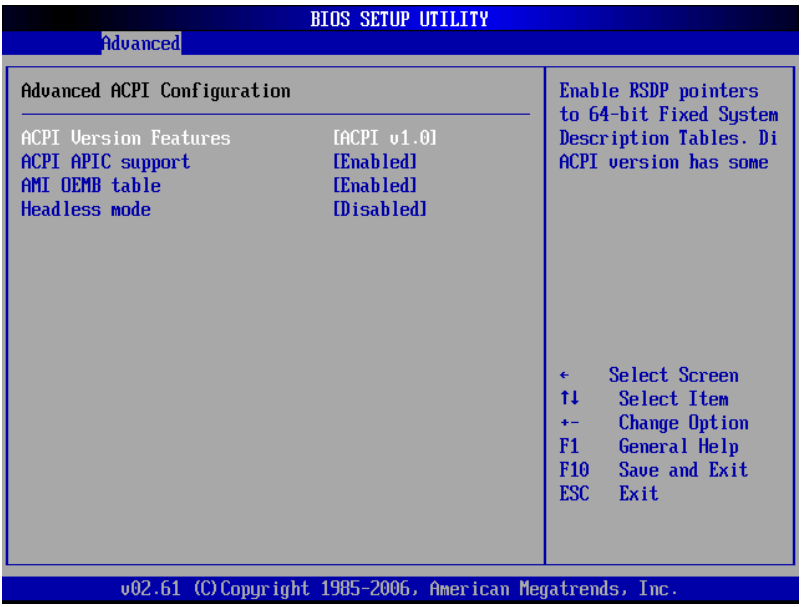
(1) General ACPI Configuration



Suspend mode

Enter into power-saving model after selecting system into sleep. The model is not the same, nor is the level of system function consumption. S1(pos)：CPU stops working, other devices remain normal power supply.

(2) Advanced ACPI Configuration



ACPI Version Features

Select ACPI version number, different versions support different characteristics, more often downward compatible.

ACPI APIC support

Select whether to open ACPI (Advanced programmed Intermit controller） ,enlargeable system can make use of IRQ resource

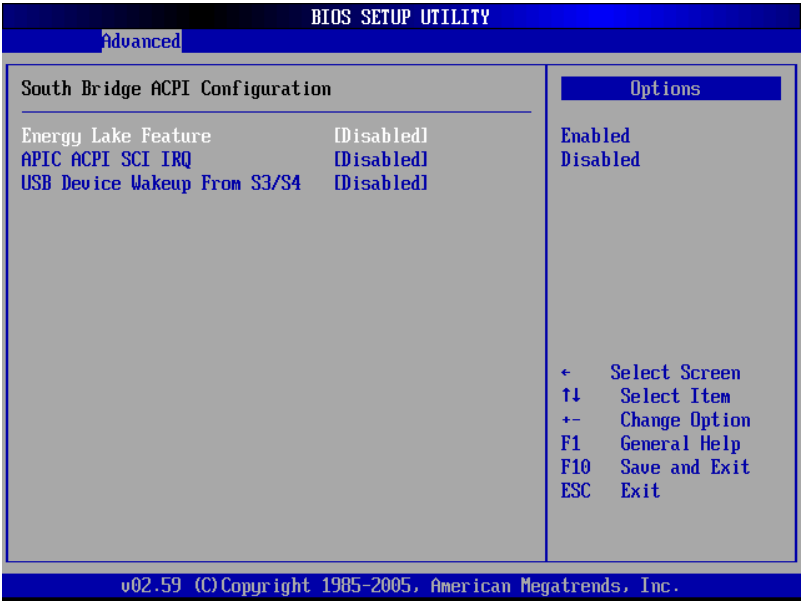
AMI OEMB table

Select whether to support OEMB table, option item: Disabled / Enabled.

Headless mode

Select whether to support Headless (not display facilities, not mouse, not keyboard) mode.

(3) Chipset ACPI Configuration



Energy Lake Feature

Whether support energy Lake power-save technology .option item :Disabled / Enabled.

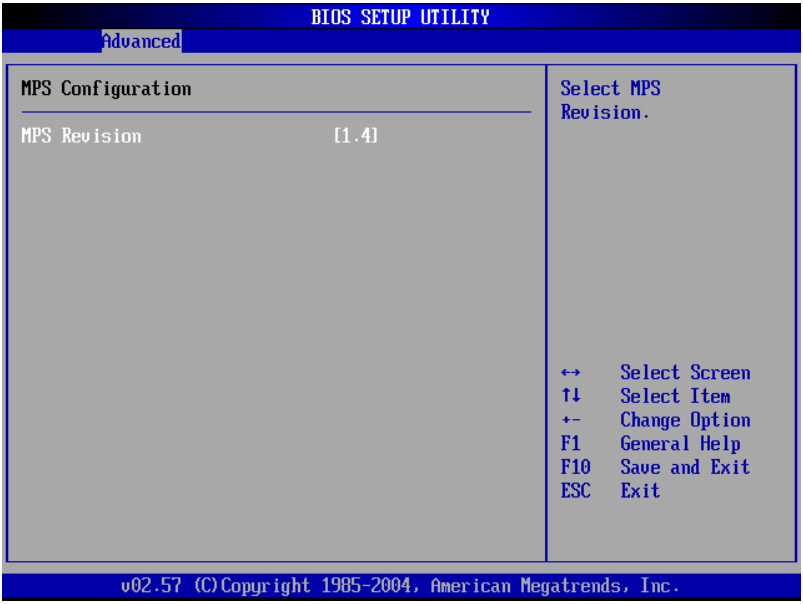
APIC ACPI SCI IRQ

Enabled/Disabled interior I/O APIC（Advanced programmed Intermit controller）and multiprocessor list.

USB Device Wakeup From S3/S4

In S3/S4, utilize USB device wakeup, [Enabled]: allow, [Disabled] forbid.

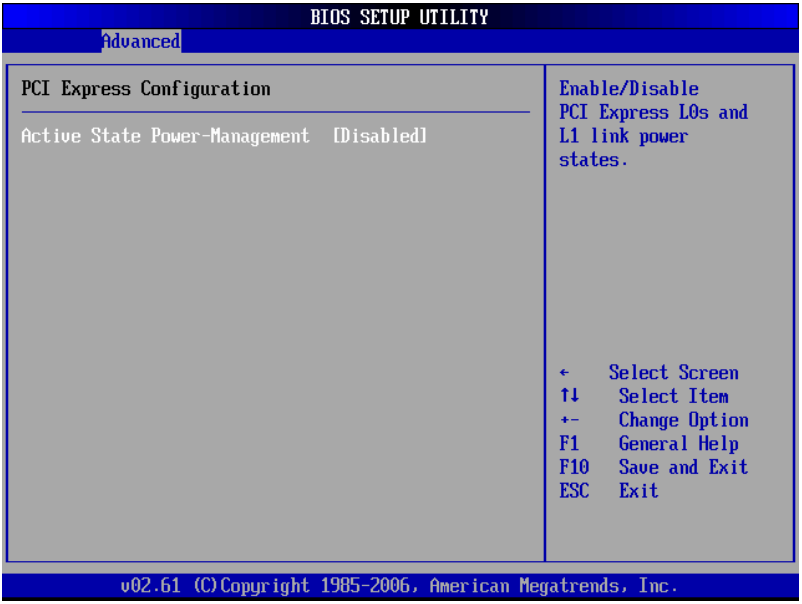
3.2.5 MPS Configuration



MPS Revision

This is a multi-processor standard version option. This option allows the user to select multi-processor standard version according to the operation system being used. And this option can function only when there are two or more than two physical or logical processors.

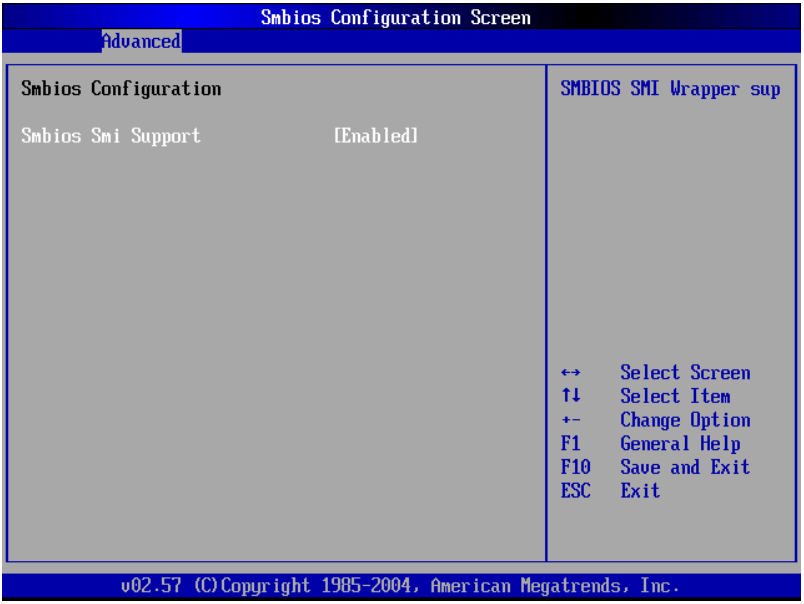
3.2.6 PCI Express Configuration



Active State Power-Management

This option allows you to use/non-use PCI- express 1 and 2 to connect power supply, setting item：[Enabled]，[Disabled].

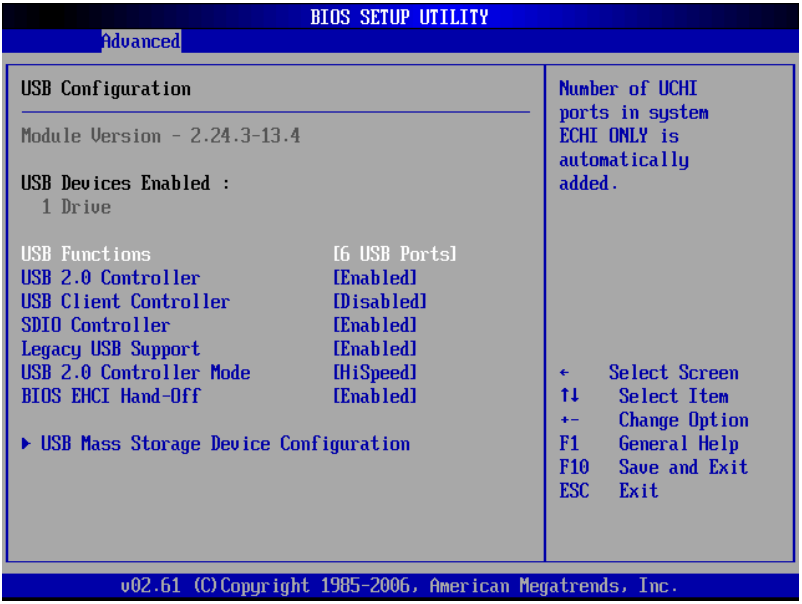
3.2.7 Smbios Configuration



Smbios Smi support

If support SMBIOS PnP Function 50-54h by SMI. Optional:[Enabled：support]，[Disabled：NO-Support]。

3.2.8 USB Configuration



Module Version (Read Only)

This option shows USB module version.

USB Devices Enabled (Read Only)

This option shows USB device which was connected with this board.

USB Function

This option uses 4 of them supporting 4 USB devices.

USB2.0 Controller

This entry is used to disable/enable the USB 2.0 controller only. The BIOS itself may or may not have high-speed USB support. If the BIOS has high speed USB support built in, the support will automatically turn on when a high speed device is attached. The choices are <Enabled> or <Disabled>.

USB Client Controller

The USB is used to set whether to open the client program controller, [Enabled] to open,

[Disabled] is off.

SDIO Controller

The SDIO interface is used to set it to open, [Enabled] to open, [Disabled] is off.

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 :< disabled>.

USB 2.0 Controller Mode

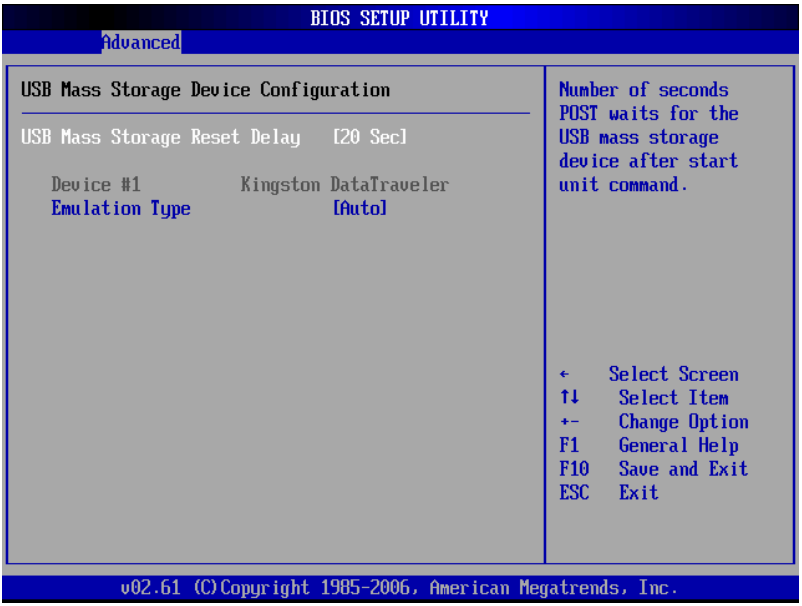
This option for choose USB2.0 port mode, Available after “USB2.0 Controller” -- <Enable>:
<FullSpeed>: USB port 2.0 (480Mbps).
<HiSpeed>: USB port 1.1 (12Mbps).

BIOS EHCI Hand-off

<Enabled>： When enter OS, BIOS auto close.

<Disabled>：When enter OS, BIOS closed by OS.

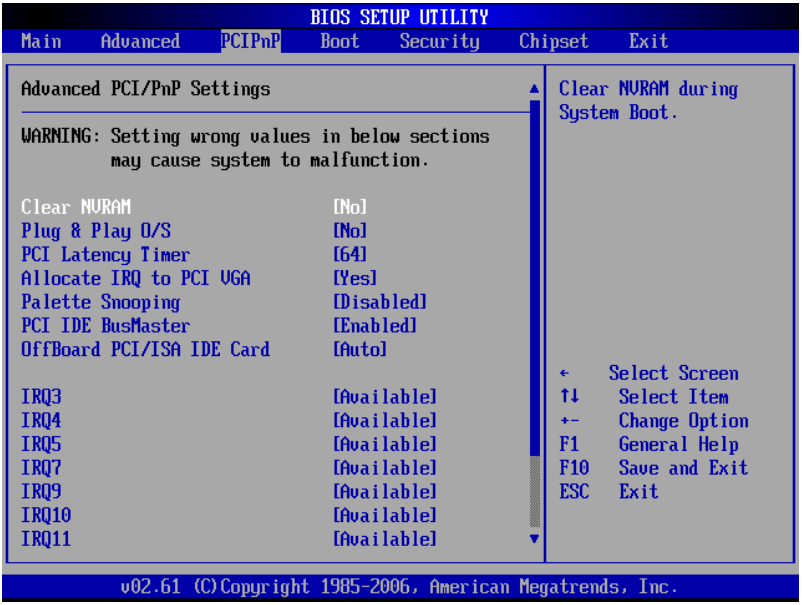
Move the cursor to”USB Mass Storage Device Configuration”, and press <Enter> key to appear the frame as below:



Emulation Type

Emulation Type，setting for [Auto].

3.3 PCI PnP



WARNING: Setting wrong values in below sections may cause system to malfunction:

Clear NVRAM

Set this value to force the BIOS to clear the Non-Volatile Random Access Memory (NVRAM). The Optimal and Fail-Safe default setting is No.

Plug & Play O/S

This option is used to decide whether to select operation system of BIOS or Plug-and-play function to configure the interrupt resources for the system peripheral devices. If this option setting is YES, the operation system will automatically distribute the interrupt resources. If there is no plug-and-play function in your operation system, or in order to prevent resetting interrupt, please set this option as NO.

PCI Latency Timer

This option can be used to select the corresponding setup values to give full play to the optimal performance of PCI.

Allocate IRQ to PCI VGA

Set this value to allow or stop the system from giving the VGA adapter card an interrupt address. The Optimal and Fail-Safe default setting is yes.

PCI IDE BusMaster

The default setup for this option is “Disabled”, that is, not to allow the main board to use the Bus Master interface (also called “DMA/33 interface”). If the main board supports PCI IDE Bus Master interface, then this option may be set as “Enabled”.

OffBoard PCI/ISA IDE Card

If the PCI/ISA IDE interface on the main board is damaged, you may add another function card to the main board to use the PCI/ISA IDE interface on this card. Now, you will have to set this option as Auto.

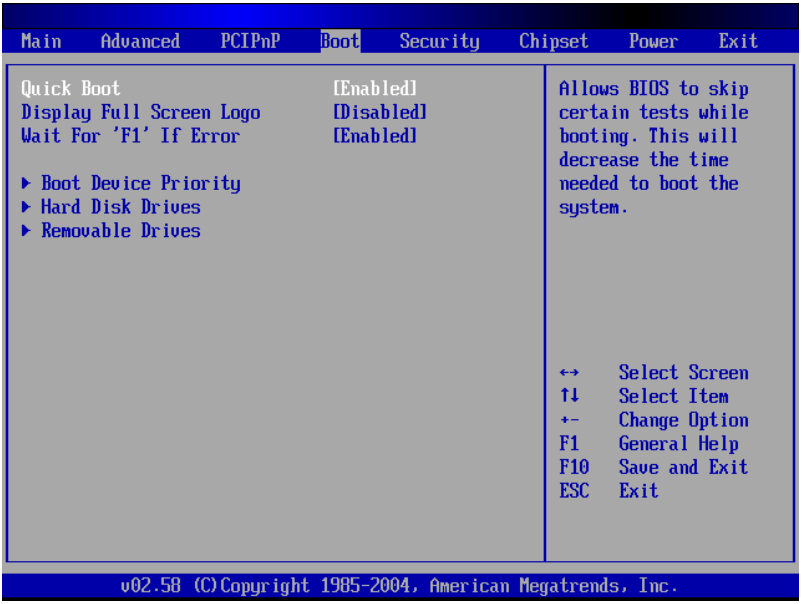
IRQ3-15

This option is used to designate whether the IRQ interrupt can be used or reserved.

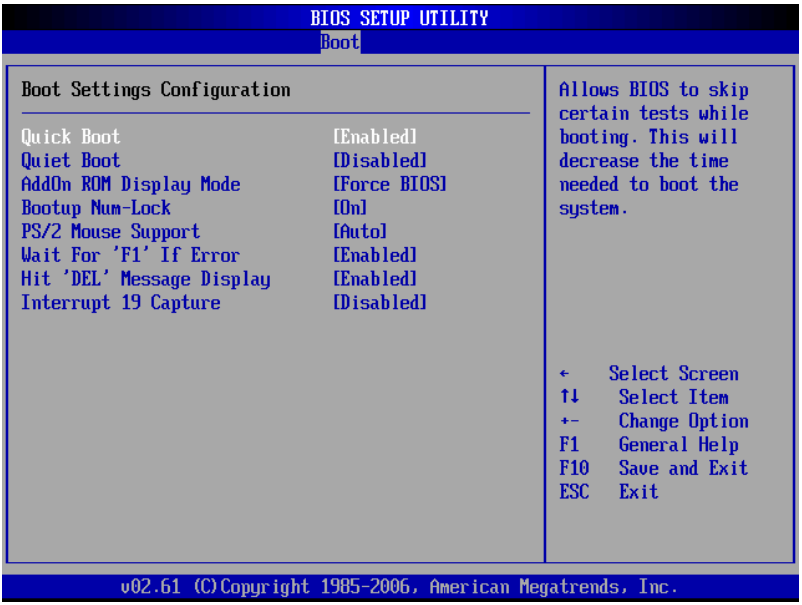
DMA Channel 0-7

This option is used to designate whether the DMA channel is available or reserved.

3.4 Boot



Move the cursor to Boot Settings Configuration, and press <Enter> key to appear the frame as below:



Quick Boot

Allows the BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

Quiet Boot

If this option is set to Disabled, the BIOS display normal POST messages. If Enabled, an OEM Logo is shown instead of POST messages.

AddOn ROM Display Mode

For choosing Option ROM display mode, Default:[Force BIOS].

Boot Up Num-Lock

Select the Power-on state for Num-lock.

PS/2 Mouse Support

This option is used to enable or disable the operation of PS/2 mouse port.

Wait For "F1" If Error

In the case of any errors found in the system self-detection, it is waiting for the user to press F1 key. While the system is activating self-detection, if the issue found is not fatal (unlikely to cause lockup or gross consequences), then the system will go on operation, but the prompt information such as "Press 'F1' to resume" or "Press 'F1' to Set up" will be displayed. Now, press F1 key to resume operation.

Hit "DEL" Message Display

Displays "Press DEL to run Setup" in POST

Interrupt 19 Capture

If BIOS start-up can be captured by special outside insert card.

<Enabled>: Yes, here BIOS will start-up by inserted card setting in its ROM,

<Disabled>: No, here BIOS start-up by the influence of inserted card.

Boot Device Priority

Boot Device Priority

Press “Enter” will show sub-menu:

1st Boot Device

2nd Boot Device

System will detect device after this priority until find an available boot device then boot from it.

(Boot device support Removable Drive or Hard Disk Drive)

Hard Disk Drives

Boot device set for HDD, if has multi- HDD, must set up priority. The Highest Priority HDD will display in “Boot Device Priority”.

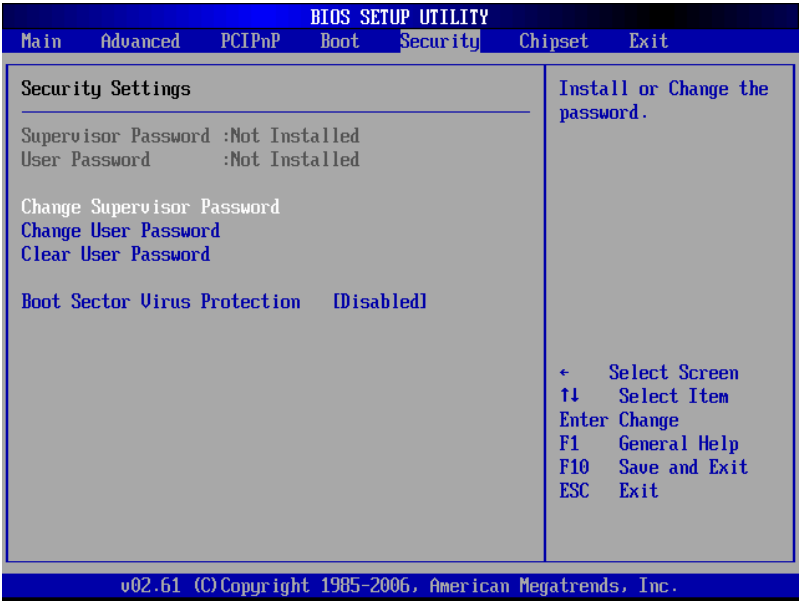
Removable Drives

Boot device set for Removable Drives, If has multi- Removable Drives, must set up priority. The Highest Priority Removable Drives will display in “Boot Device Priority”.

CD/DVD Drives

Boot device set for CD/DVD Drives, If has multi- CD/DVD Drives, must set up priority. The Highest Priority CD/DVD Drives will display in “Boot Device Priority”.

3.5 Security



Supervisor Password, User Password

After you press “Change Supervisor Password” or “Change User password”, and after you key in a new password in the dialog box, the prompt that a super password or user PIN has been installed is displayed n this box.

Change Supervisor Password

Press ‘Enter ‘, and enter sub-menu then you can change supervisor password.

Change User Password

Press ‘Enter ‘, and enter sub-menu then you can change user password

Clear User Password

Press ‘Enter ‘, and select “yes” then you can clear user password.

Boot Sector Virus Protection

<Enabled>: the bootable section protect will available.

When execute Disk format or Write the Bootable section instruction, BIOS will send a warning.

Example as below:

Boot Sector Write!

Possible VIRUS: Continue (Y/N)? _

(Must press much 'N' and skip up)

Format!!!

Possible VIRUS: Continue (Y/N)? _

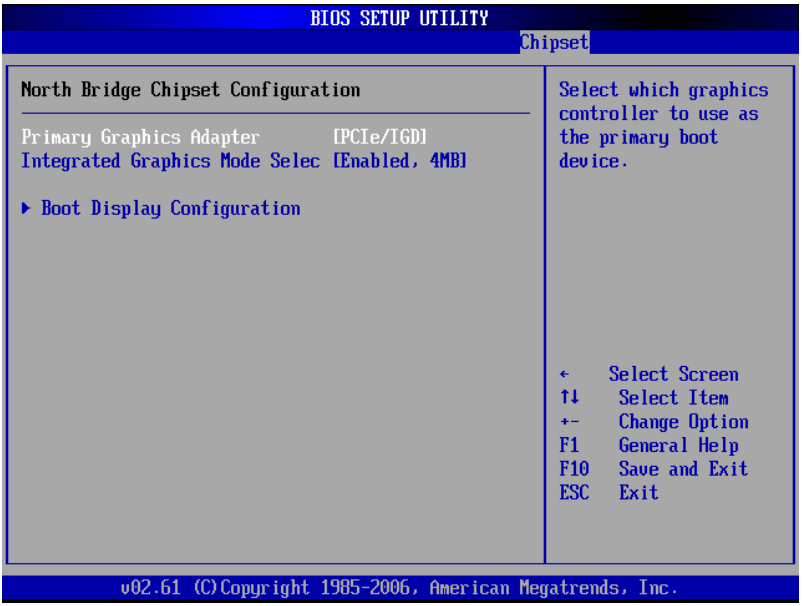
(Must press much 'N' and skip up)

<Disabled>: close this function.

3.6 Chipset

3.6.1 North Bridge Configuration

Move the cursor to NorthBridge Configuration, and press <Enter> key to appear the frame as below:



Initate Graphic Adapter

Setup display device PRI, options as below:

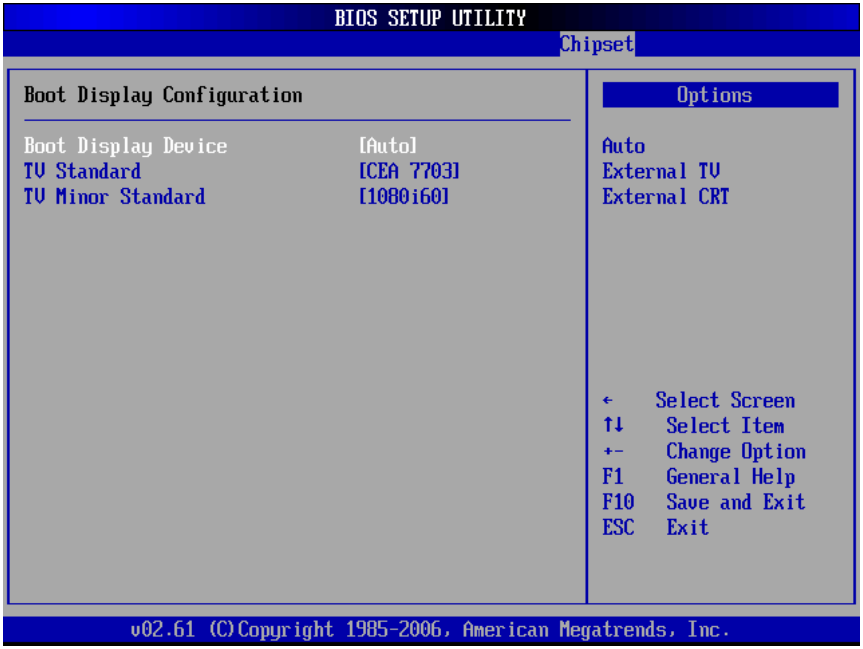
1: PEG PCI Express Graphics, PCIE,

2: IGD Integrated Graphics Device,

3: PCI.

Internal Graphics Mode Select

This part is used to set graphic apertures. The small pore us one part of the PCI address range used for graphic memory address space. The main cycle within the pore range needs no conversion to AGP. You may select 4M, 8M, 16M, 32M, 64M or 128M. The default value is 64M.



Boot Display Device

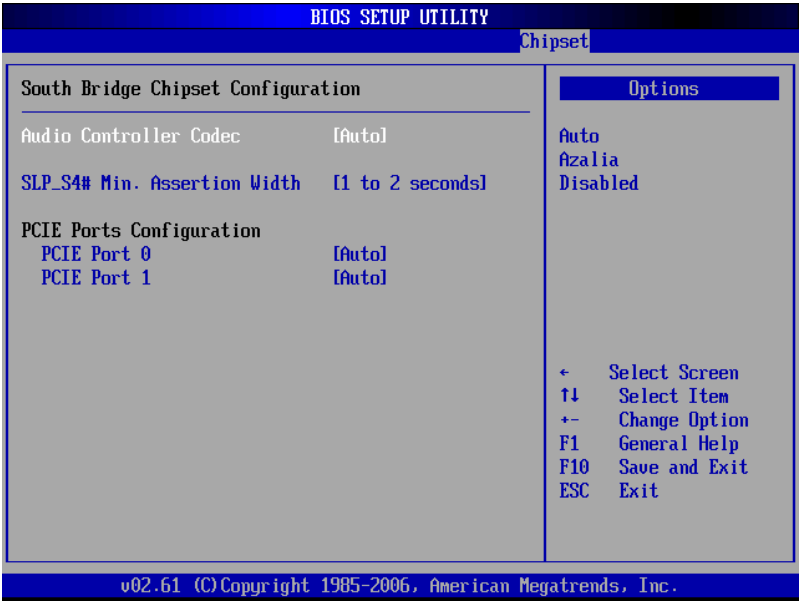
This item allows the user to decide that display mode. The choices: [Auto(default)]、[LCD]、CRT] and [Both(CRT+LVDS)].

TV Standard

TV output format options settings.

3.6.2 South Bridge Configuration

Move the cursor to SouthBridge Configuration, and press <Enter> key to appear the frame as below:



AC'97 Controller Codec

Select <Disabled> if you do not want to use AC-97 audio. The choices: < Auto>,, <Disabled>.

SLP_S4# Assertion Width

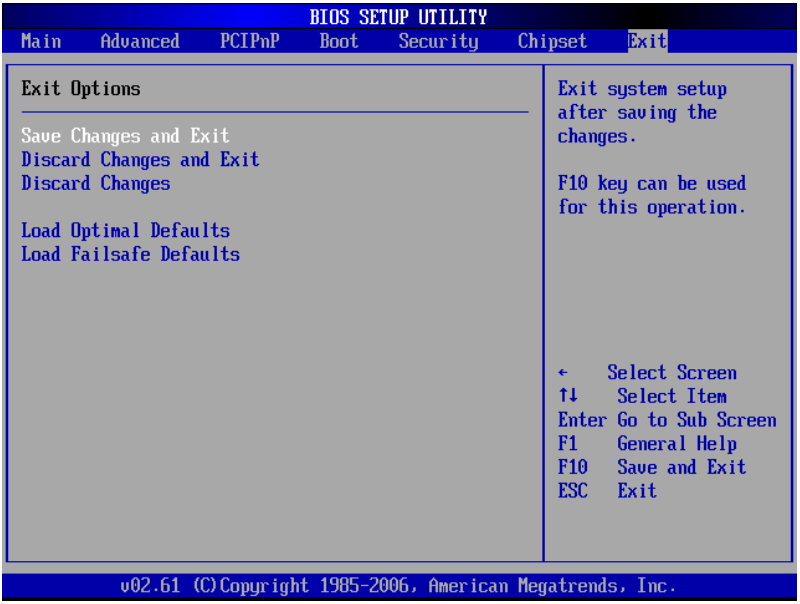
This item allow user to set the SLP_S4# Assertion Width. The choices： <4---5 Sec(default)>,<3 to 4 Sec>,<2 to 3 Sec>,<1 to 2Sec>。

PCIE Ports Configuration

PCIE Port1-2

Set whether use PCI-E 1-2 port. The choices:<Auto(default)>,<Disabled>,<Enabled>.

3.7 Exit



Save Changes and Exit

Press <Enter> two times, save BIOS change and reboot system.

Discard Changes and Exit

Press <Enter> two times, does not save BIOS change and reboot system.

Discard Changes

Press <Enter> two times, stay at BIOS setting interface, continue setting BIOS.

Load Optimal Defaults

Recommend you first use this option before config BIOS.

Load Failsafe Defaults

After System fail, recommend load this option

Appendix

Appendix

Appendix 1: Driver Installation

Please install the driver as per the following steps:

Plug programmed disk into CD-ROM, so installation of the driver can be made either automatically or manually. Now manually installation instructions are given as below:

1) A variety of options available regarding manually installation, which you can check from Device Manager.

2) Right click “my computer ", select "management", and go to “Device Manager"

3) Right click "display controller” in the menu of graphic card, select “Properties ", click “Driver", select “update driver".

4) Select “Show the list of all drivers which are designated locations so that choices can be made from it ", select "next."

5) Select the location of display driver, click “ok"

6) Implement the installation, restart the system.

Proceed with the installation of other drivers after restarting the system, till all installations are implemented. Then user can see that it says device is working

Appendix 2: Embedded SATA HDD drivers in the Windows XP installation disc

一、Prepare the software

1.nLite：The software can integrate Service Pack and Windows Security Update for customizied Windows file. And integrate normal application software(including DirectX、.Net Framework、software integration package、desktop themes and driver etc.),and also can support Windows unattened installation and creat Bootable ISO CD image etc.

Download link：http://dl.21tx.com/2005/11/07/10756.html

2.SATA driver：you can download it from Hard Driver manufacture's official website., the file is arount 150KB.Our driver name is 3132_x86_1.0.22.0_logo.zip。

3.WindowsXP System installation disk.

二、Production steps

1. Uppack SATA driver file 3132_x86_1.0.22.0_logo.zip to "d:\SATADriver" path。

Remark: also can Unpack the SATA HDD drivers to d:\SATADriver files, which will make your Installation disk be suitable for kinds of SATA HDD

2. Insert Windows XP installation disk into CD-ROM，And creat foler "XpSp3" in D disk。Bootup nLite driver，select "SimplifIEd Chinese" langaue，then enter into next step。In the position of nLite driver, Please find out " Please select the WINDOWS installation files location" and click "Browse" ，and select the letter of CD in。Figure 1 shows promptly, then choose the newly folder"d:\ XpSp3"，After it, we enter into system copy phase，After finish copy of bootable system files of "d:\XpSp3". We can enter into next step.

3. Do nothing setting in " Default" and directly into the " Tast selection" phase, then select" Driver" and "Bootable ISO image. And click "Forward" to enter the next step.

4. Click" Insert" button in the "Integrated the driver to install the file" interface. Then select"single driver"in the pop-up list. And then select and unfold file "SI3132.inf" from d:\SATADriver"，At this point will appear" Driver integration Optionsl" interface，and select" Text - mode driver" key，Following, select "Sil 3132 controller on Windows XP/Server 2003" in the list. Click" ok"

5. Click "Forward", window will pop up "application to change it?" Click" Yes" and then enter into the production of the following ISO image.

6.Insert a blank CD burner, select" Direct Burn" in the "bootable ISO image" interface of the "Mode" drop down list.Click" Burn" button to start burning. In order to ensure recording quality, and recommend you select" Create inagamge" and then make a boot disk under the image.

7. After finish CD-ROM burning, it can be used as a system installation disk, and has SATA HDD drivers.

Appendix 3：Watchdog programmer guide

watchdog reference code（ASM）:

Set the port to realize watchdog function through DEBUG order, so that it can carry out Watchdog Timer's various functions.

port instruction：

2EH ： Address register

2FH ： Data register

Example：Set Watchdog Timer for30 Seconds, DEBUG in DOS：

```
C:\>debug
-o 2e 87
-o 2e 87          ; Decode
-o 2e 2b
-o 2f e0          ; bit4=0, set pin as watchdog func
-o 2e 07
-o 2f 08          ; Choose register
-o 2e 30
-o 2f 01          ; Activation logic devices
-o 2e f5
-o 2f 00          ; Set timer units as second / (set as min: o 2f 08)
-o 2e f6
-o 2f 1E          ; Set Timer Count to 30 sec. (Max support FF = 255, when it set as 00 Watchdog function stop
-o 2fe aa         ; locked register
-q
```

==========

watchdog reference code**(c++ language)**：

```
outputb (0x2e, 0x87)
outputb (0x2e, 0x87)    // Open SUPER IO register
outputb (0x2e, 0x2B)
outputb (0x2f, 0xE0)    //bit4=0 ,set pin as watchdog func
```

```
outputb (0x2E, 0x07)
outputb (0x2F, 0x08)     //select logical device
outputb (0x2e, 0x30)
outputb (0x2f, 0x01)     //active the device
outputb (0x2e, 0xF5)
outputb (0x2f, 0x00)     // Set timer units as second /（Set timer units as minute: outputb (0x2f,
0x08)）
outputb (0x2e, 0xF6)
outputb (0x2f, 0xIE)     // Set Timer Count to 30 sec
outputb (0x2E, 0xAA)   // locked register
//------- code end ---------------------------------
```

Appendix 4: Glossary

ACPI

Advanced Configuration and Power Management Interface for short.ACPI specifications allow OS to control most power of computer and its extended devices. Windows 98/98SE, Windows 2000 and Windows ME are all support ACPI, it provide users a flexible system power management.

ATX:

AT extended, a motherboard layout according with modern standard replaced BabyAT. It changes disposal of many components, and do some new high efficiency design, so it is widely used now.

BIOS

Basic in/out system.It's a kind of software including all in/out control code interface in PC. It will do hardware testing while system booting, then system runs, it provides an interface between OS and hardware. BIOS is stored in a ROM chip.

BUS

In a computer system, it's the channels among different parts for exchanging data; it's also a group of hardware line. BUS here means part lines inside CPU and main components of memory.

Chipset

Integrated chips for executing one or more function.Here "Chipset" means system level chipset structured by Southbridge & Northbridge; it decides motherboard's structure and main functions.

CMOS

Complementary Metal-Oxide Semiconductor, a widely used semiconductor with the characteristic of high speed but low power. CMOS we mention here means part of obligate space in on-board CMOS RAM, for saving date, time, system information and system parameter etc.

COM

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

DIMM: Dual Inline Memory Module. It's a small circuit board with memory chipset, providing 64bit 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 and specification of ORAM exist in computer application. Now: SDRAM, DDR SDRAM and RDRAM are generally used.

IDE:

Driver specification for integrated device electronics,for connecting HDD / CD-ROM device.

IRDA:

Infrared Data Association for short, here means infrared transmit interface, to connect infrared transmit devices. This sort of device transmits data by infrared light-wave without connecting any cables .It have been developed a standard now.

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, as a rule. Terminals can access data and devices anywhere through cables, so, many users can share costly device and resource.

LED

Light-Emitting Diode.a semiconductor device that shines when power supply is connected, often use to denote info lightly, for example, to denote power on or HDD work normally.

LPT

Line print terminal.The denomination reserved by DOS, is used to denote universal parallel interface, and connect printer in a general way.

POST

Self-test when power on. While booting, BIOS will do once uninterrupted testing operation to the system, including RAM, keyboard, hard disk driver etc. Check them 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's Universal Serial Bus for short. A hardware interface adapts to low speed external devices, and is always used to connect keyboard, mouse etc. One PC can connect 127 USB devices Max, 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.

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