



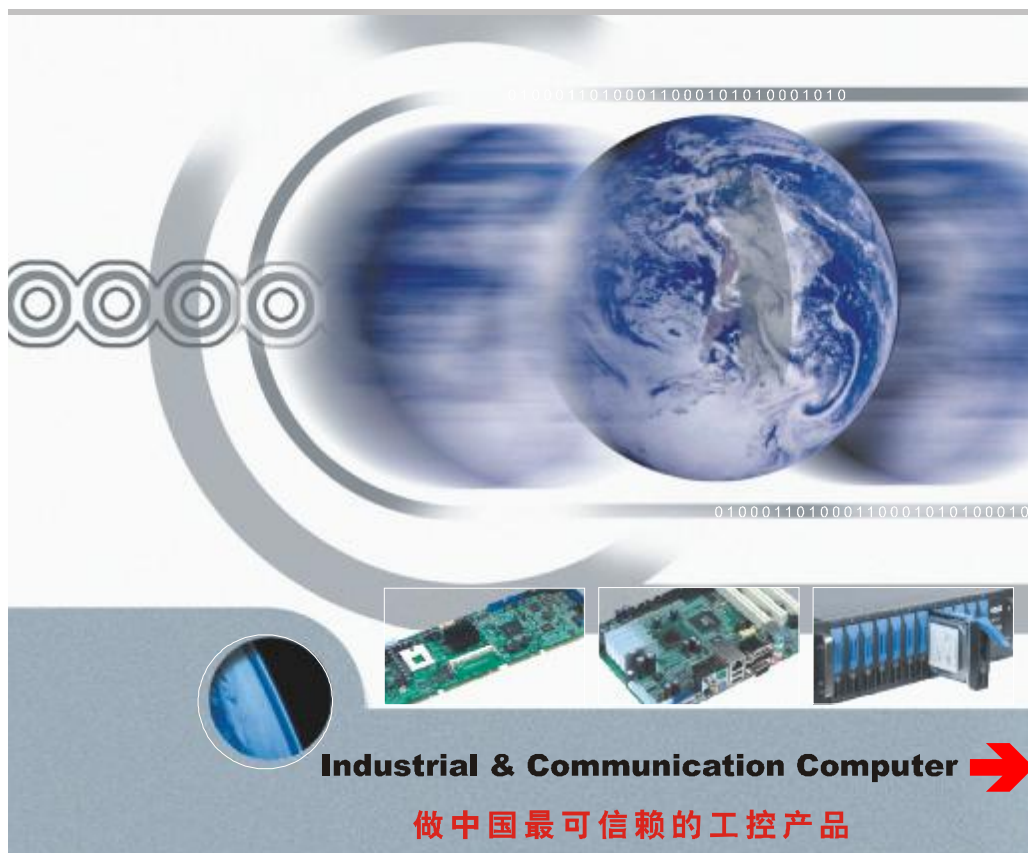
BIS-7870

Network Security Barebone

User Manual V1.0

用户手册

USER'Manual



Industrial & Communication Computer 

做中国最可信赖的工控产品

Announcement

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Cautions

1. Before using your NORCO product, please read this manual closely
2. To avoid electric shock or product damage, please first disconnect power supply or unplug the power cable from the socket before inserting or extracting the board or doing reconfiguration.
3. Before moving the boards or cards, please first unplug the power cord from the power socket.
4. When connecting or removing any devices, please make sure that all the power cords are disconnected.
5. To avoid damage caused by frequent power on/off, everytime you turn off the computer, you need to wait at least 30 minutes to power on again.
6. Please use cross screwdriver to operate. A mighty screwdriver would be better (a magnetic one to avoid leaving any screws inside chassis). Please note: do not leave any components or tools inside the chassis.
7. Please guarantee the system has good heat dissipation and ventilation
8. When encountering exceptional problems, please seek help from professionals.

Declaration of conformity



Shenzhen NORCO Intelligent Technology Co.,Ltd.

declares that the product

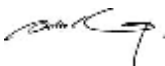
BIS-7870 Network Security Barebone

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

- | | |
|--|--|
| <input checked="" type="checkbox"/> EN 55022 | Limits and methods of measurements of radio disturbance
Characteristics of information technology equipment |
| <input checked="" type="checkbox"/> EN 50081-1 | Generic emission standard Part 1:
Residential, commercial and light industry |
| <input checked="" type="checkbox"/> EN 50082-1 | Generic immunity standard Part 1:
Residential, commercial and light industry |

European Representative:

Shenzhen NORCO Intelligent Technology Co.,Ltd.

Signature: 

Place/Data: HONG KONG/2007

Printed Name: Anders Cheung

Position/Title: President

Declaration of conformity



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

Model Name: BIS-7870

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

Equipment Classification: FCC Class B Subassembly

Type of Product: Network Security Barebone

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: _____

A handwritten signature in black ink, appearing to be 'S. G.', written over a horizontal line.

Date: 2008

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Packing List

Thank you for purchasing NORCO products. Please check all accessories according to the packing list after removing product package. If anything missed or damaged, please contact your distributor ASAP.

■BIS-7870	1 unit
■ CD (driver instructions and manual)	1
■ Power Adaptor	1
■Screw	4



Chapter 1. General Information

Chapter 1 General Information

1.1 Product Introduction

BIS-7870 is highly reliable network security barebone that adopts NORCO proprietary "ICEFIN" enclosure, combined with high efficient cooper radiating pipe inside; offering perfect heat-dissipation solution. System is based on Intel Pineview-M (D) +ICH8M chipset with onboard Intel Pineview-M (D) processor. 1x DDR2 SO-DIMM slot supporting RAM up to 2GB. Board provides 1x 2.5" HDD Bay, 1x CF socket, 2x USB2.0, 1x Console, 6x GbE LAN, Bypass supported, which enables this solution specially suitable for applications in network security devices, firewall, IDS, Intelligent terminals based on communication network or computer network.

1.2 Product Specification

Structure

- "ICEFIN" enclosure, alluminum alloy structure

Dimension

- 300mm × 194mm × 50mm (L × W × H)

CPU

- Intel Atom N450/D410/D510/D525

Chipset

- Intel Pineview-M/D+ICH8M

System Memory

- 1x 200 Pin SO-DIMM slot
- Support DDR2 533/667/800, onboard memory up to 2GB

Storage

- Provide 1x 2.5" SATA HDD
- 1x CF socket, supporting DMA.

USB

- 1x standard double-deck USB port

I/O

- Winbond W83627DHG-P I/O Chip
- 1x Console
- 1x 2×5 Pin serial port

LAN

- Adopt Intel 82574L Chip
- 6x GbE LAN

PCI

- 1x standard PCI slot, able to be expanded to 2x PCI

MINI PCIe

- 2x MINI PCIe, sharing the LAYOUT with LAN
- MINI PCIe1 supports SSD

Watchdog

- Support HDD RESET function

BIOS

- 8Mb SPI Flash BIOS

Power Supply

- DC + 12V power adaptor

Environmental & Mechanical

- Installation: Desktop or Wall Mount
- Operating Temperature: 0°C~60°C; Storage Temperature: -40°C~80°C
- Operating Humidity: 5%-95% relative humidity, no-condensing
- Vibration: 0.5g rms/5~500Hz/random operating
- Cooling System: Fanless, "ICEFIN" cooling system



Chapter 2. Hardware Features

Chapter 2 Hardware Features

2.1 External Interface Location

1: BIS-7870 Front View



2: BIS-7870 Rear View



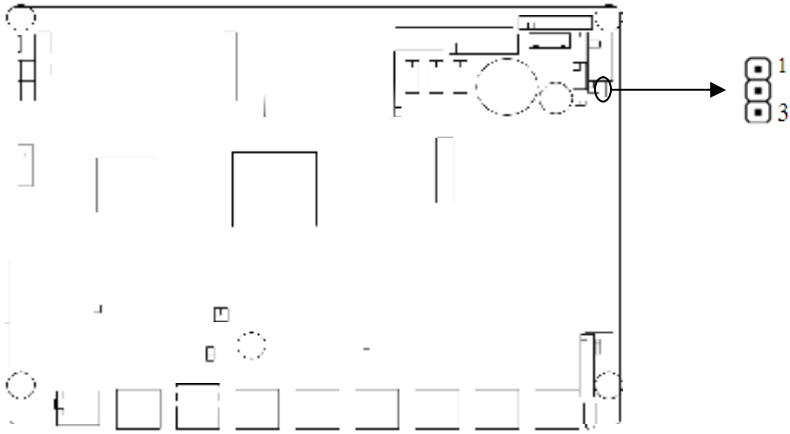
2.2 Jumper Setting

2.2.1 CMOS Clear/Hold Jumper Setting (JCC)

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

Steps:

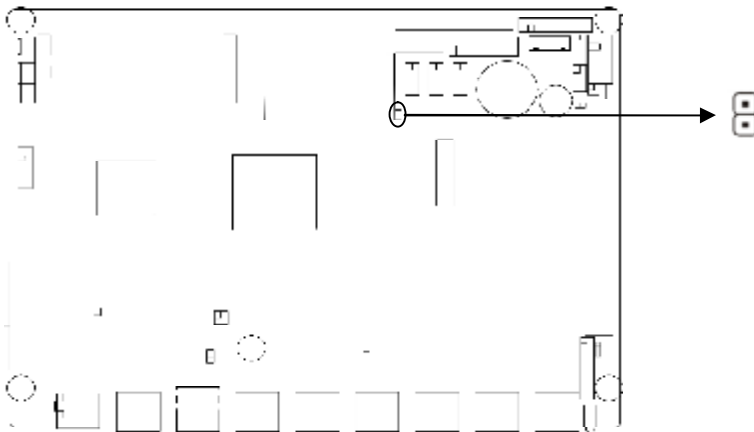
- (1) Turn off the computer, disconnect power supply
- (2) Make Pin 1 and Pin 2 of jumper JCC short for 5~6 seconds, then back to pin2-3
- (3) Start the computer, then press DEL key to enter BIOS setting and reload optimized default value
- (4) Save and exit



Setting	JCC
1-2	Clear CMOS, BIOS back to initialization
2-3	Normal Status, (Default)

2.2.2 CF Card Master/Slave Jumper Setting (JCF)

This jumper is used to set CF card as Master or Slave. When JCF is closed, CF card is Master device. When you remove this jumper, CF card will be slave.

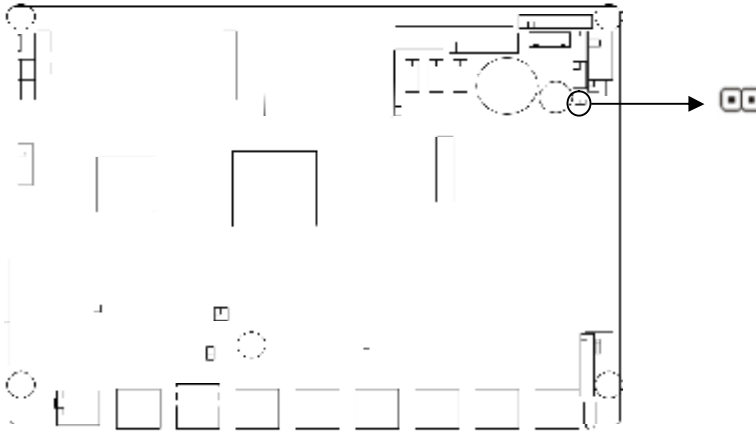


Setting	JCF
Close	Set CF card as master (Default)

Open	Set CF card as slave
------	----------------------

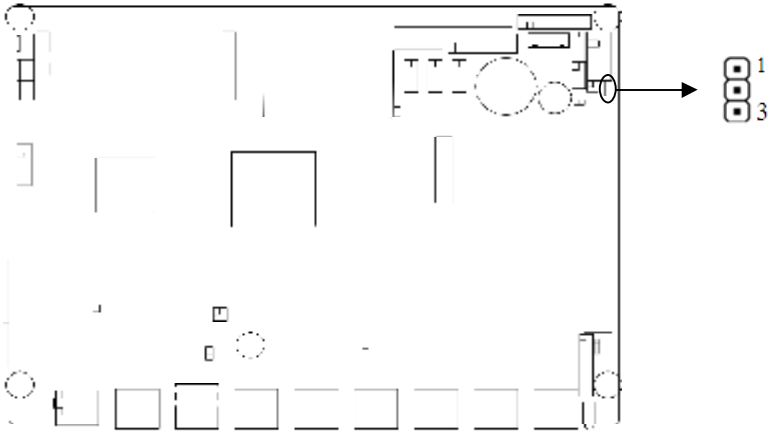
2.2.3 Anti-virus BIOS Write-protect Jumper Setting (JAV)

This jumper is used to protect BIOS from virus attack or write. When JWP is set as closed, you will be unable to flash the BIOS and the system BIOS is also protected from being attacked by serious virus such as CIH virus. If you want to flash your BIOS, please set this jumper open.



Setting	JAV
Close	Unable to flash BIOS (default)
Open	Able to flash BIOS

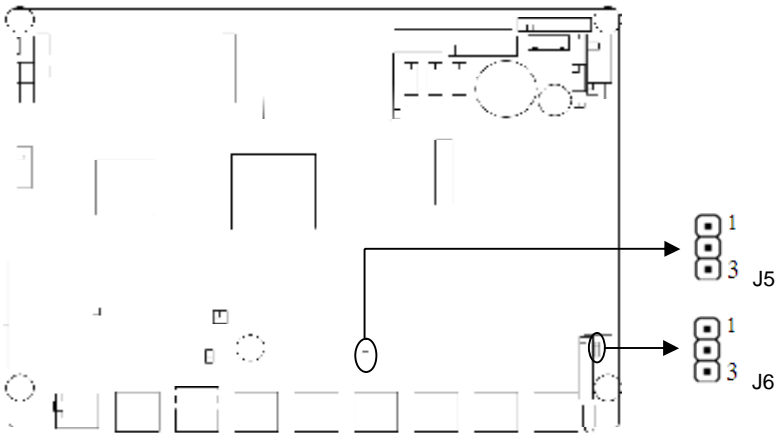
2.2.4 Watchdog/ Watchdog Bypass Setting (J3)



Setting	J3
1-2	Watchdog
2-3	Watchdog Bypass

2.2.5 Bypass Jumper Setting (J5, J6)

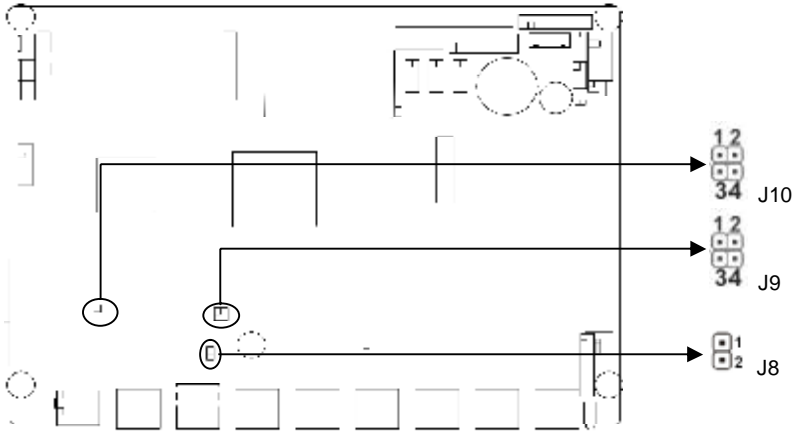
These two jumpers are used to enable or disable Bypass function. If you need to enable Bypass function, please set "J5/J6" as 2-3.



Setting	J5/J6
---------	-------

1-2	Close Bypass
2-3	Activate Bypass

2.2.6 Power Mode Select Jumper Setting (J8, J9, J10)



	SINGLE PWR	ATX PWR
J8	1-2	OPEN
J9	1-2	OPEN
	3-4	OPEN
J10	1-2	OPEN
	3-4	OPEN

2.3 Front Panel I/O Connector

2.3.1 Power Button

Power Button. BIS-7870 has Power LED and HDD LED. The PWR_LED is Blue while the HDD_LED is Red. After system starting up, the Blue LED is on if no HDD, if HDD write and read, the Red LED will flash.



2.4 Rear Panel I/O Connector

2.4.1 Serial Port (COM1)

BIS-7870 provides one RJ45 COM port.



COM1:

Signal Name	Pin		Signal Name
RST#	1	2	DTR#
SOUT	3	4	GND
GND	5	6	SIN
DSR#	7	8	CTS#

2.4.2 Network Interface (LAN1-LAN6)

BIS-7870 provides 6x Network interfaces. LAN3-4 and LAN5-6 construct two set Bypass.



RJ45 PORT LED Status:

LILED (GREEN)	Function	ACTLED (YELLOW)	Function
ON	Effective Connectivity	Flash	Data transferring
OFF	Ineffective Connectivity/Close	OFF	No data

2.4.3 USB (USB12)

BIS-7870 provides one standard double-deck USB interface.

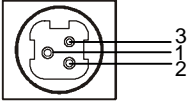


USB12:

Pin	Signal Name
1	+5V
2	USB DATA-
3	USB DATA+
4	GND

2.4.4 Power Interface (DC +12V)

BIS-7870 adopts +12V single power supply input.



Pin	Signal Name
1	+12V
2	GND
3	NC

2.4.5 LED Indicator (PWR_LED, HDD_LED)

硬盘指示灯



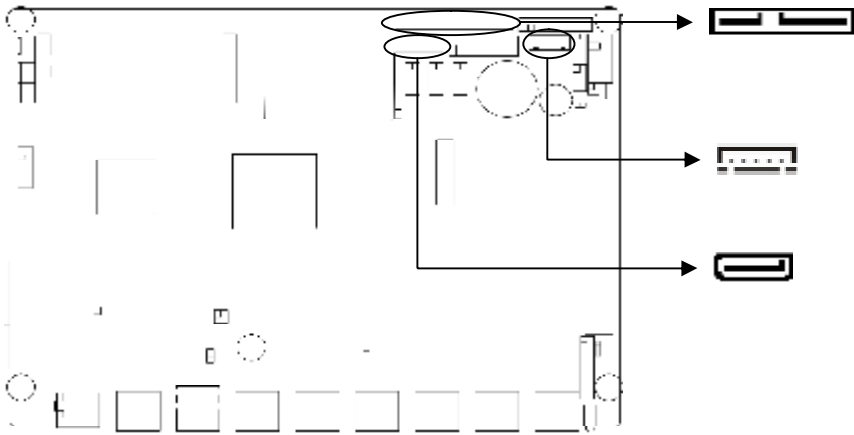
电源指示灯

When the system is power on, the PWR_LED is on, If the system is power off, the PWR_LED will be off. When HDD WRITE AND READ, HDD_LED will flash, which indicates hard disc is working.

2.5 Internal Interface

2.5.1 SATA & SATA Power Interface (SATA1, SATA2, J7)

Board provides 2x SATA HDD interfaces(one uses 7+15Pin connector). Users need an extension cable to go through SATA power interface to use SATA2 . J7 is used to power up HDD or to provide power output.



SATA1 (7+15Pin) :

Pin	Signal Name	Pin	Signal Name
1	GND	P5	GND
2	SATA_TXP	P6	GND
3	SATA_TXN	P7	+5V
4	GND	P8	+5V
5	SATA_RXN	P9	+5V
6	SATA_RXP	P10	GND
7	GND	P11	GND
P1	+3.3V	P12	GND
P2	+3.3V	P13	+12V
P3	+3.3V	P14	+12V
P4	GND	P15	+12V

SATA2:

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

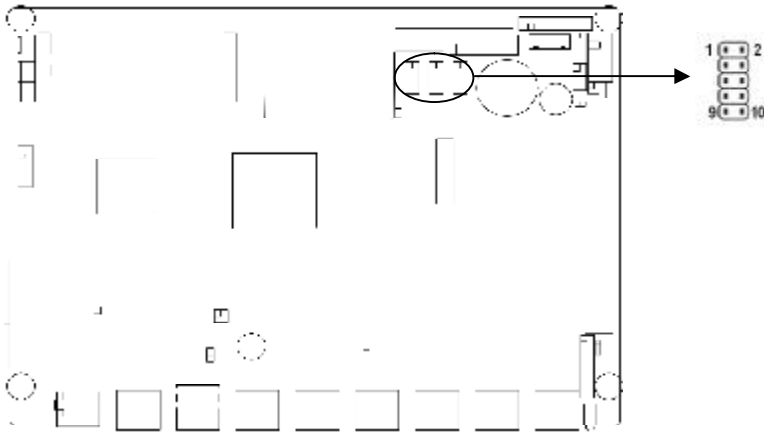
7	GND
---	-----

J7:

Pin	Signal Name
1	+12V
2	GND
3	VCC
4	GND
5	VCC3

2.5.2 USB (USB34, USB56, USB78)

BIS-7870 provides 3 set of 2×5Header USB2.0 ports (USB34, USB56, USB78) . Users need to use an extension cable to connect 2.5Pin USB signal to standard USB Hub, totally up to 6x standard USB hubs.

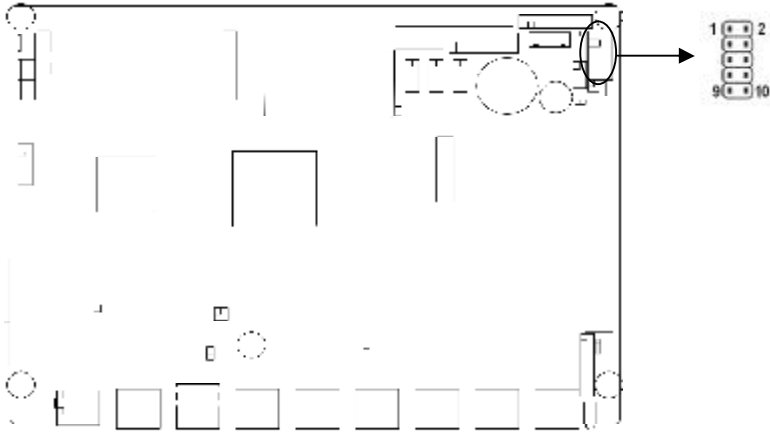


USB34, USB56, USB78:

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

2.5.3 Serial Port (COM2)

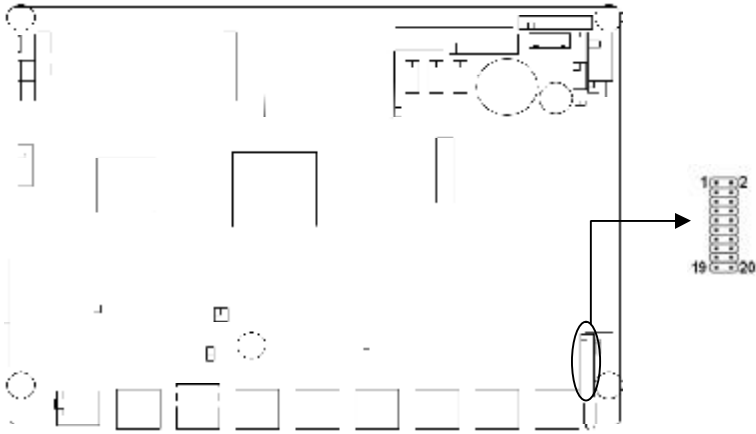
BIS-7870 provides one 2×5Header COM2



COM2:

Signal Name	Pin		Signal Name
DCD	1	2	DSR
RXD	3	4	RTS
TXD	5	6	CTS
DTR	7	8	RI
GND	9	10	GND

2.5.4 Network LED/Data LED Define (J2)

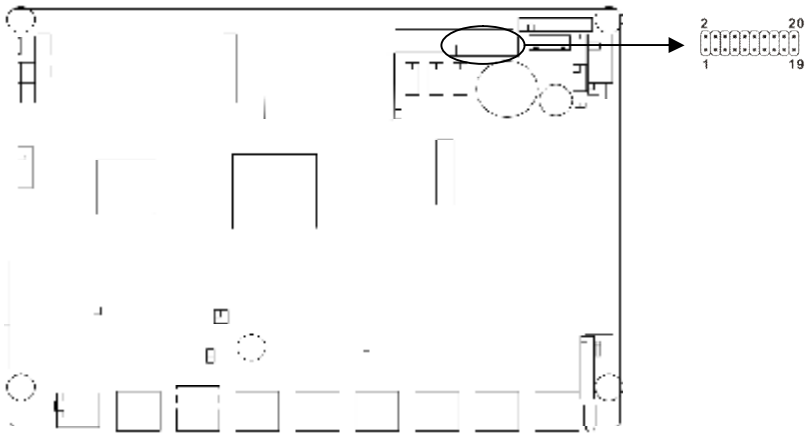


J2 (Connect to 3.3VSB power when using external LAN LED)

Signal Name	Pin		Signal Name
VCC	1	2	3.3VSB
NC	3	4	LED_ACT_JACK1
GND	5	6	LED1_LINK_JACK1
GND	7	8	LED_ACT_JACK2
NC	9	10	LED1_LINK_JACK2
LED_ACT_JACK5	11	12	LED_ACT_JACK3
LED1_LINK_JACK5	13	14	LED1_LINK_JACK3
LED_ACT_JACK6	15	16	LED_ACT_JACK4
LED1_LINK_JACK6	17	18	LED1_LINK_JACK4
VCC	19	20	3.3VSB

2.5.5 LPC Port (JLPC)

BIS-7870 provides one 2×10Pin LPC (Low Pin Count Interface Specification) port to connect external devices.



JLPC:

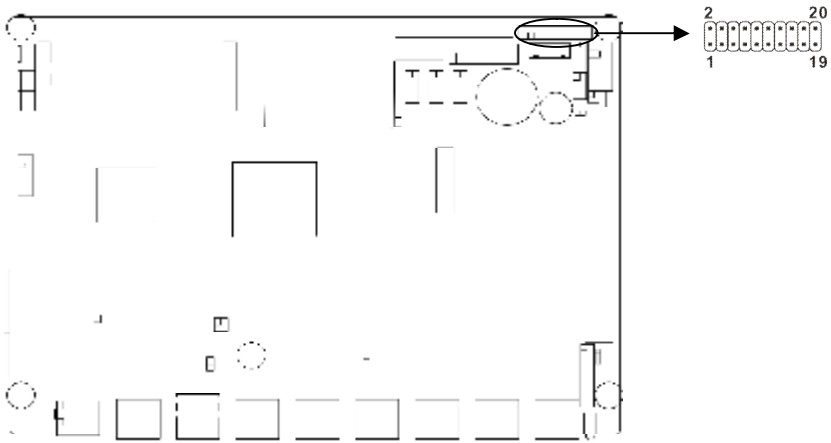
Signal Name	Pin		Signal Name
CLK_LPC	1	2	GND
LFRAME_N	3	4	NC
LPC_RST#	5	6	VCC
LPC_AD3	7	8	LPC_AD2
VCC3	9	10	LPC_AD1
LPC_AD0	11	12	GND
SMB_CLK	13	14	SMB_DATA
V3.3SB	15	16	SIO_SERIRQ
GND	17	18	NC
PM_SUS_STAT#	19	20	LDRQ#1

2.5.6 MINI PCIe & LAN5/LAN6 Optional

BIS-7870 provides 2x standard MINI PCIe ports. MINI PCIe1 can support SSD

2.5.7 Parallel Port (LPT)

BIS-7870 provides one 2×10Pin LPT to connect parallel devices based on actual needs.

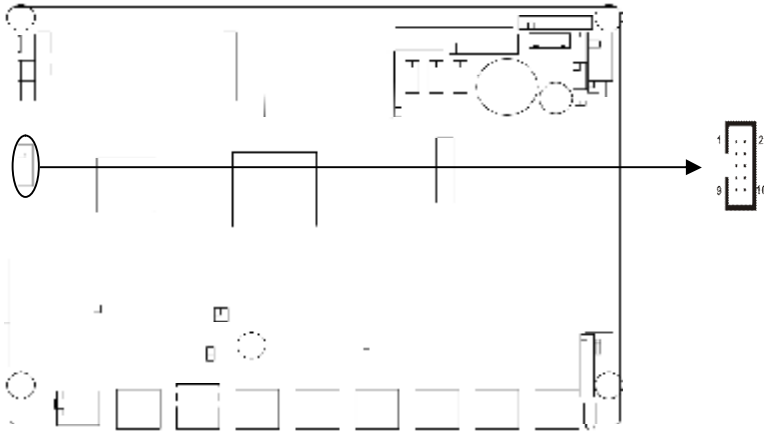


LPT:

Signal Name	Pin		Signal Name
T_STB#	1	2	T_AFD#
PSQ0	3	4	T_ERR#
PDQ1	5	6	T_INIT#
PDQ2	7	8	T_SLIN#
PDQ3	9	10	GND
PDQ4	11	12	GND
PDQ5	13	14	GND
PDQ6	15	16	T_BUSY
PDQ7	17	18	T_PE
T_ACK#	19	20	T_SLCT

2.5.8 Display Interface (VGA)

BIS-7870 provides one 2×5Pin VGA port, to be converted to standard DB15 interface with an extension cable, to connect external devices.

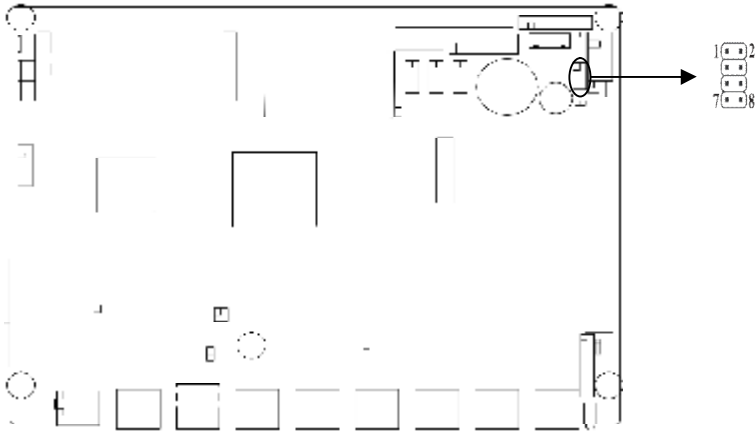


VGA:

Signal Name	Pin		Signal Name
RED	1	2	GND
GREEN	3	4	SDA
BLUE	5	6	HSYNC
NC	7	8	VSYNC
GND	9	10	VGA_SCL_R

2.5.9 Keyboard and Mouse Interface (KM)

BIS-7870 provides one 2×4Header keyboard and mouse interface, to connect keyboard and mouse with an extension cable.



KM:

Signal Name	Pin		Signal Name
VCC	1	2	MS_CLK
GND	3	4	MS_DATA
KB_DATA	5	6	GND
KB_CLK	7	8	VCC

2.5.10 CF Card Socket (Compact Flash)

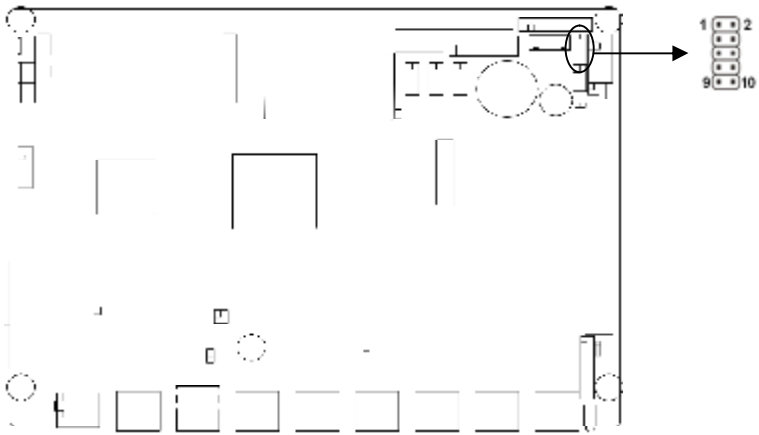
BIS-7870 provides one 50Pin CF socket, supporting DMA.

2.5.11 PCI

BIS-7870 provides one standard PCI expansion slot, to be converted into two PCI interfaces with an optional PCI Riser Card.

2.5.12 Front Panel Connector (JFP)

JFP is used to connect functional buttons or LED indicators on the chassis front panel.



JFP:

Signal Name	Pin		Signal Name
POWER LED+	1	2	POWER LED-
HD LED+	3	4	HD LED-
NC	5	6	GND
RESET BUTTON	7	8	GND
POWER BUTTON	9	10	GND



Chapter 3. Hardware Installation

Chapter 3 Hardware Installation

Before installing your computer accessories:

Please follow the cautions below in case of any potential damage to your computer.

1. Please make sure no power connected to your computer
2. Please wear antistatic wrist strap or gloves when touching integrated circuit components (such as RAM, etc.)
3. Prepare a pony cross screwdriver

3.1 Dismount Host Cover

1. Use cross screwdriver to unscrew the four screws on the top of BIS-7870
2. Hold the two sides of cover and lift upward to dismount it.

3.2 HDD Replacement/Installation

Inbuilt motherboard provides one 2.5" SATAII HDD bay. Users need to choose the proper matching HDD. Please follow steps below to install your HDD:

1. Power off and pull out the power cable.
2. Use screwdriver to dismount the chassis cover
3. Choose proper 2.5"HDD that matches this motherboard and use standard 7+15 SATA convert cable to insert this HDD into SATA1 port and tighten the connection.

3.3 Power Connection

1. Connect the power socket to the power connector that is on the rear of the computer
2. Then insert the connector plug to your trislot power strip.



Chapter 4. BIOS SETUP

Chapter 4 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.

AFUDOS.EXE is the FLASH IC program for BIOS to upgrade, which needs to be run in DOS mode.

Pls use a boot disk to load DOS, then run AFUDOS.EXE to upgrade BIOS (for example: write XXXX.ROM into FLASH IC)

Oder format:

A:\ Afudos XXXX.rom

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

Example: Afudos 78701103.rom /P /B /C /N /X

Remarks:

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 may be damaged or system may not be able to boot again.
4. After flashing your BIOS, press [Delete] to enter BIOS SETUP to optimize your BIOS, then press F10 to save and exit.
5. Please backup your BIOS before upgrading

AMI BIOS Description

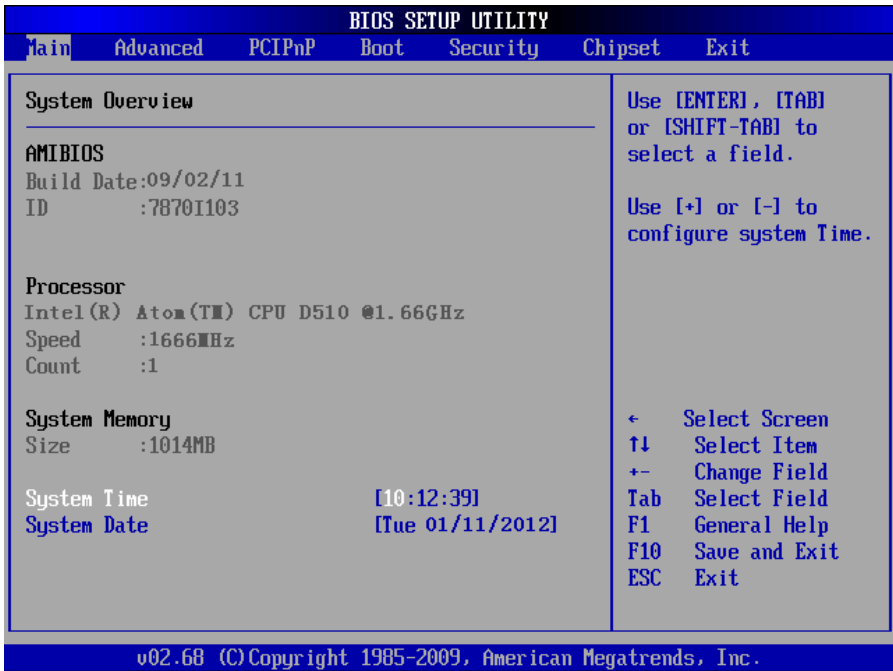
Power on the computer, BIOS will conduct self-diagnosis to the hardware of the motherboard and configure hardware parameter. Finally, the operating system will take control. BIOS is the communication bridge between hardware and O/S. Correct configuration of BIOS is critical for maintaining system stability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

BIOS Parameter Configuration

Boot the computer, “Del->SETUP” message will show after system finishing self-diagnosis. You need to press [Del] and system will enter into BIOS setup interface after IDE devices detection.

1. Power on the system or reboot the system, the display screen will show self-test message
2. When prompt "Press to enter setup" pop up, please press [Del] to enter into BIOS SETUP Program.
3. Use the “←→↓” to choose the option which you want to modify, press <Enter> to go to the sub-menu.
4. Use the “←→↓” and <Enter> to modify the value; press “Enter” to modify BIOS options that you choose
5. At any time, press<Esc> can go back to the father-menu.

4.1 Main Menu



AMI BIOS (Read Only)

This will show BIOS Build Date, BIOS ROM file name.

Processor (Read Only)

CPU information, such as the processor speed.

System Memory (Read Only)

This will show system memory size.

System Time

System Time Format: Hour/Minute/Second

System Date

System Date: Week/Date/Year

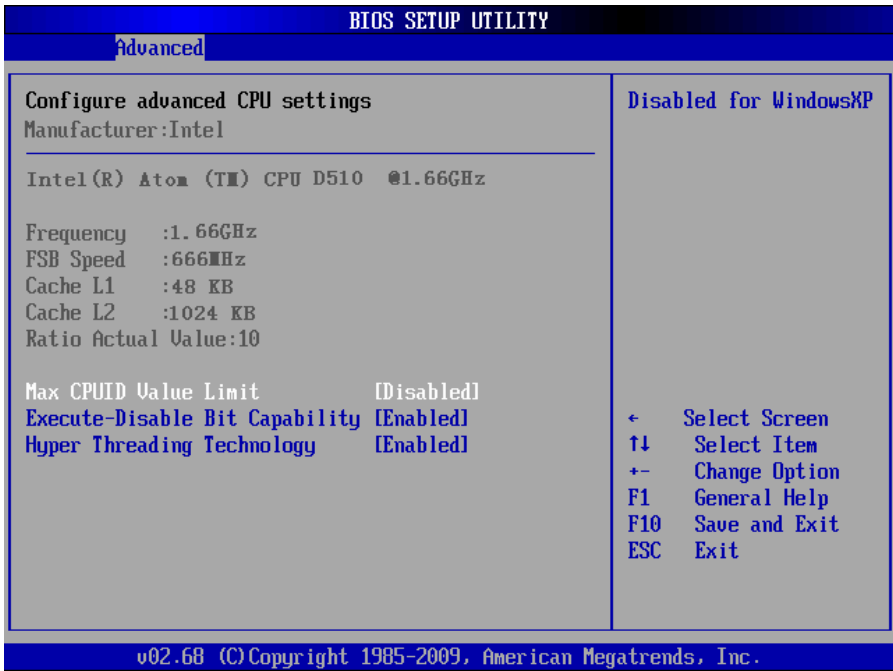
4.2 Advanced Menu

Note: The incorrect parameter may lead to your system failure, pls set up this section carefully according to the following instructions.

BIOS SETUP UTILITY						
Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
Advanced Settings		Configure CPU.				
WARNING: Setting wrong values in below sections may cause system to malfunction.						
▶ CPU Configuration						
▶ IDE Configuration						
▶ SuperIO Configuration						
▶ Hardware Health Configuration						
▶ AHCI Configuration						
▶ APIC Configuration						
▶ Remote Access Configuration						
▶ USB Configuration						
▶ BYPASS Configuration						
▶ Onboard LAN Option ROM						
		← Select Screen				
		↑↓ Select Item				
		Enter Go to Sub Screen				
		F1 General Help				
		F10 Save and Exit				
		ESC Exit				

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4.2.1 CPU Configuration



This Read-Only option contains the detailed information of CPU, including CPU manufacturer, type, frequency, L1 cache and L2 cache, ect.

Max CPUID Value Limit

[Enable] is to use “Max CPUID Value Limit” function. [Disable] is not to use Max CPUID Value Limit” function.

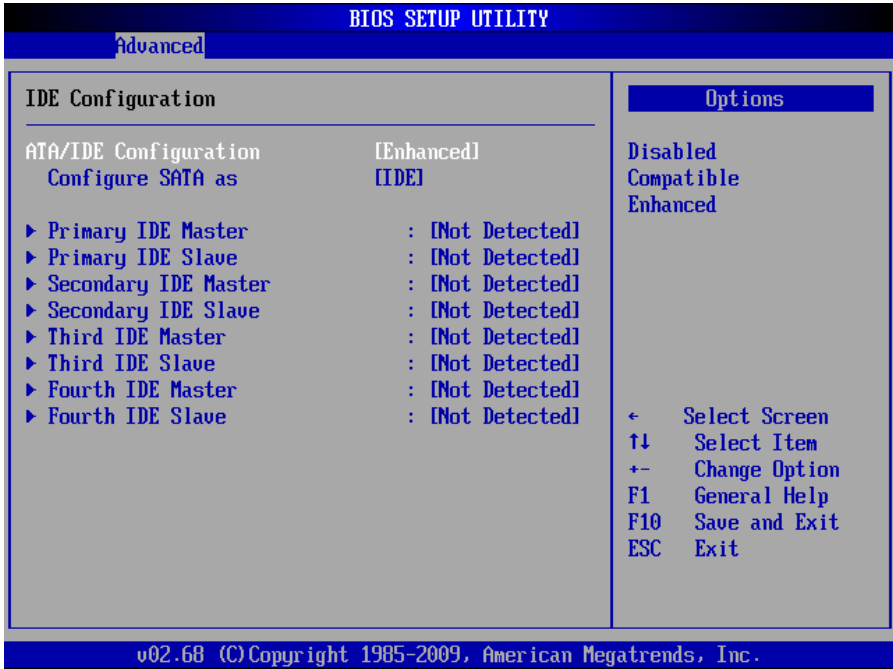
Execute-Disable Bit Capability

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.

Hyper Threading Technology

Intel Hyper-Threading Technology Function. This function requires system CPU, chipset, BIOS and OS all support HT technology. When enabling this function, recommend to use WinXP or Linux2.4 OS. If your system doesn't support Hyper Threading technology, enabling this function will degrade system performance.

4.2.2 IDE Configuration



ATA/IDE Configuration

ATA/IDE configuration mode select, including [Compatible] & [Enhanced] mode.

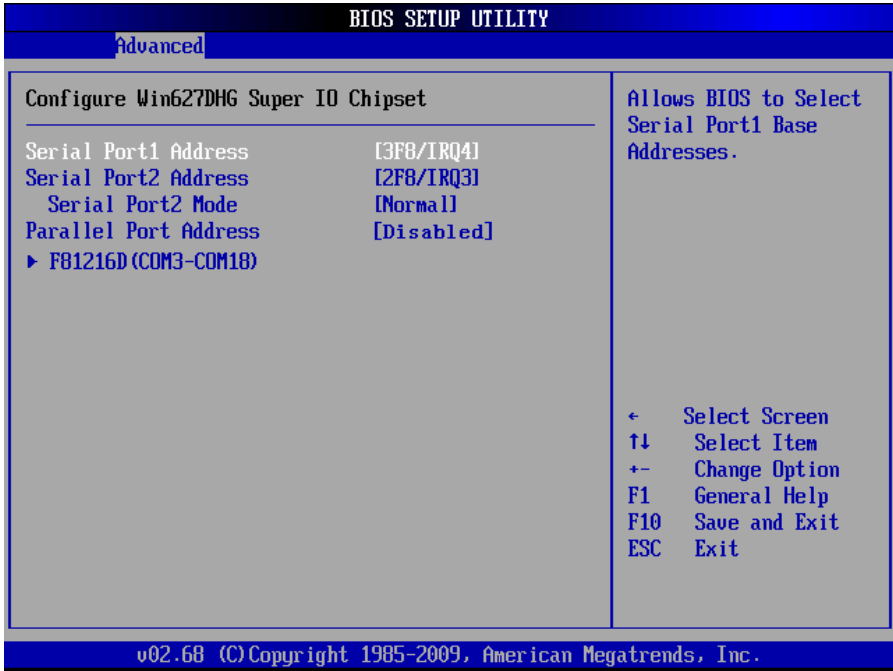
Configure SATA as

SATA Configuration Mode Selection. Three options available:[RAID], [AHCI] and [IDE].

Primary/Secondary /Third/Fourth IDE Master/Slave

These eight options are used to set the type of IDE devices. Recommend to select [Auto], then system will auto detect the devices.

4.2.3 SuperIO Configuration



Serial Port1/2 Address

Setup the IRQ and base address of serial port1/2. Recommend to use the default set.

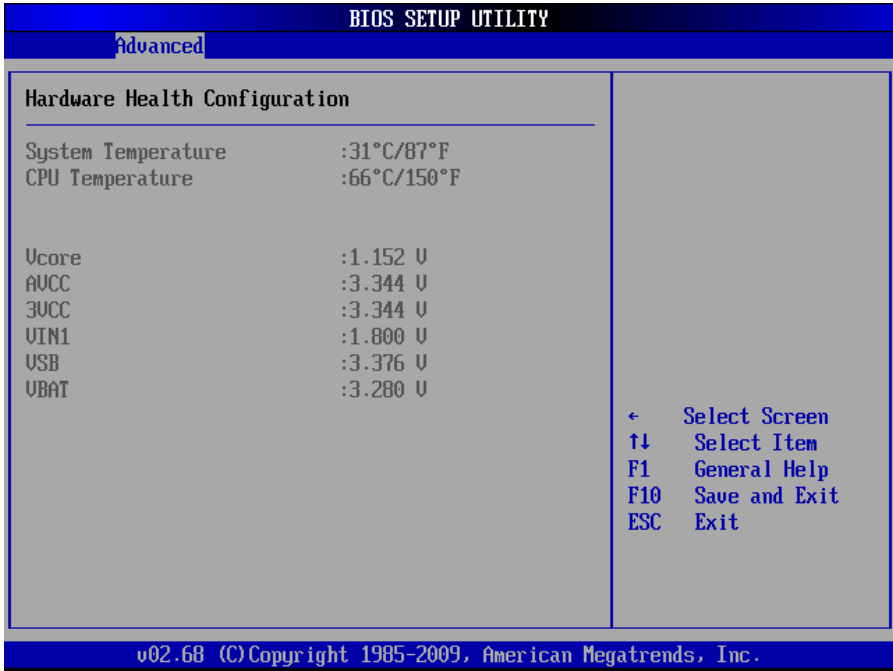
Serial Port2 Mode

Setup serial port2 mode. Default as [Normal].

Parallel Port Address

Configure Parallel Port Address. Default address: 378. Setting values are [378], [278], [3BC], [Disabled].

4.2.4 Hardware Health Configuration



Hardware Health Configuration

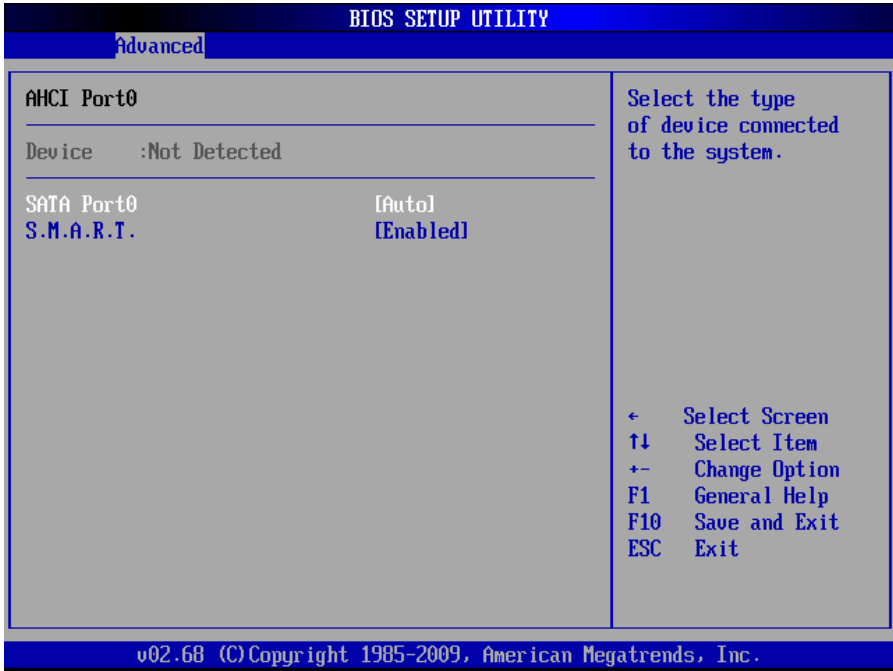
PC Hardware Health Status monitoring. BIOS will show current system temperature, CPU temperature, FAN rev speed and related voltage.

4.2.5 AHCI Configuration

BIOS SETUP UTILITY	
Advanced	
<p>AHCI Settings</p> <ul style="list-style-type: none">▶ AHCI Port0 [Not Detected]▶ AHCI Port1 [Not Detected]▶ AHCI Port2 [Not Detected]	<p>While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices.</p> <p>← Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit</p>
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AHCI Port0

Move cursor to “AHCI Port0” and press “Enter” , following screen will show:



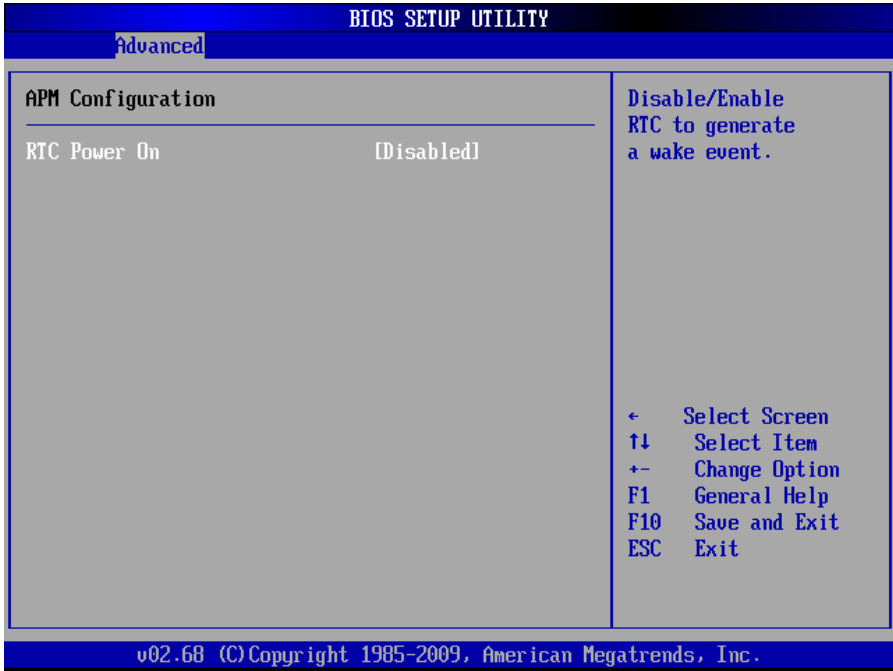
SATA Port0

Setting values: [Auto], [Enabled], [Disabled]. Default as [AUTO]

S.M.A.R.T.

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology; often written as SMART) is a monitoring system for computer hard disk drives to detect and report on various indicators of reliability, in the hope of anticipating failures. Recommend to use default set.

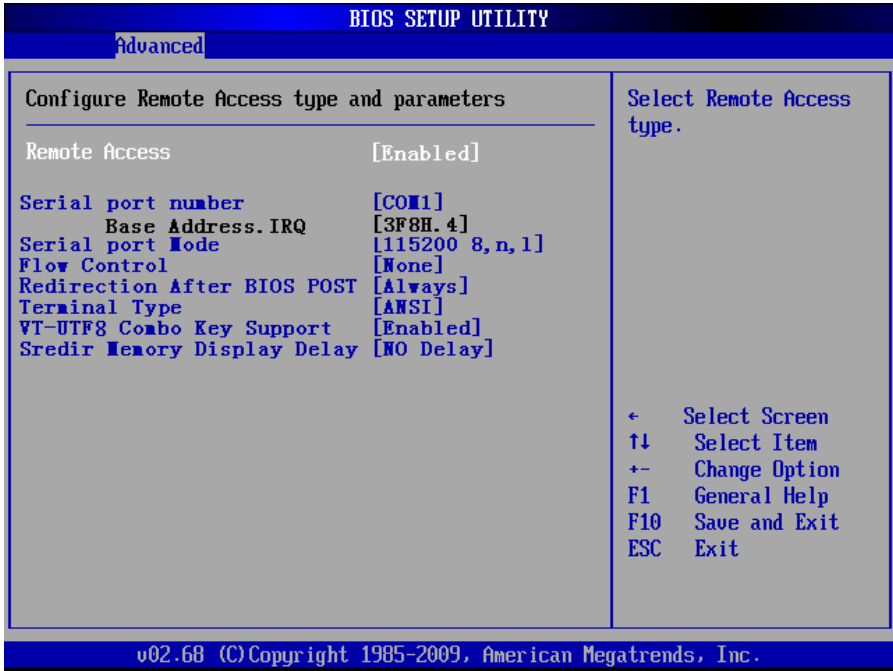
4.2.6 APM Configuration



RTC Power On

This is to setup RTC power on function , which can be configured as [Enabled] or [Disabled].

4.2.7 Remote Access Configuration



Remote Access

Enable or disable BIOS remote access function.

Serial port number

Serial port corresponding base address and IRQ. Setting value: [COM1], [COM2].

Serial port Mode

Serial port mode setting. Setting values include [115200 8,n,1], [57600 8,n,1], [38400 8,n,1], [19200 8,n,1], [9600 8,n,1]. Recommend to use the default set.

Redirection After BIOS POST

Setup redirection after BIOS POST. Options are [Disabled], [Boot Loader], [Always].

Terminal Type

Terminal Type selection. Recommend to use the default set.

VT-UTF8 Combo Key Support

Enable or Disable VT, UTF8 Combo Key Support

Sredir Memory Display Delay

Serial Terminal Display Delay. Setting values : [NO Delay], [Delay 1Sec], [Delay2Sec], [Delay 4Sec]

4.2.8 USB Configuration



USB Devices Enabled (Read Only)

This option shows the USB devices connected to motherboard.

USB Function

Enable or disable USB function. If configured as [Disabled], USB function is unsupported. System default as [Enabled].\

USB 2.0 Controller

[Enabled]: Activate USB2.0 Controller

[Disabled]: Close USB2.0 Controller

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>

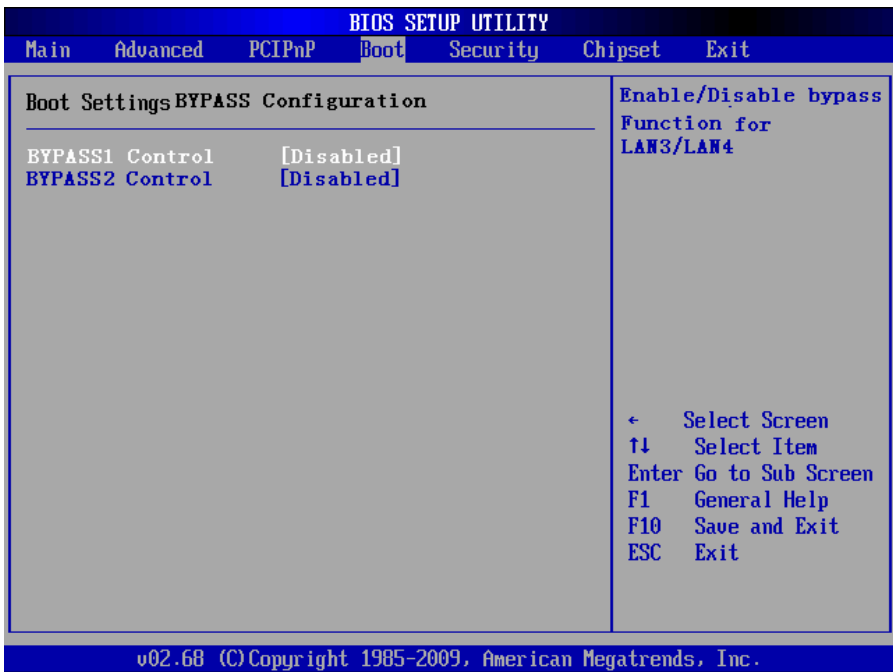
USB2.0 Controller Mode

Setup USB 2.0 transmission mode

<FullSpeed> : USB port is 1.1 spec (12Mbps)

<HiSpeed>: USB port is 2.0 spec (480Mbps)

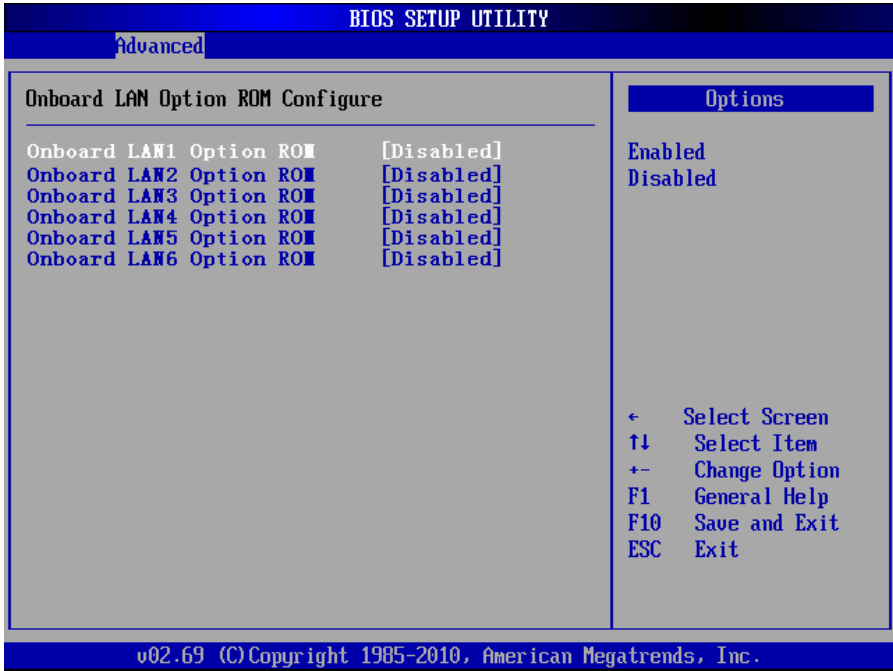
4.2.9 BYPASS Configuration



BYPASS1/2 Control

Enable or disable BYPASS function for LAN3/LAN4

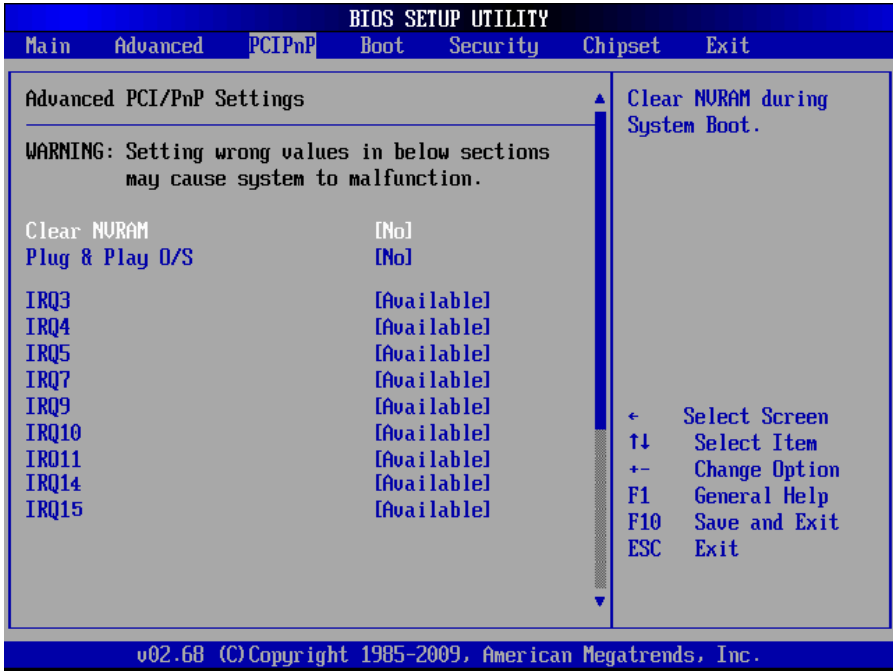
4.2.10 Onboard LAN Option ROM



Onboard LAN1/2/3/4/5/6 Option ROM

Onboard LAN Option ROM configuration. Available options: [Enabled] or [Disabled].

4.3 PCI PnP Menu



Clear NVRAM

Clear NVRAM data or not. Available options include [NO] ,YES].

[NO] for keeping the data

[YES] for clearing the data

Plug & Play O/S

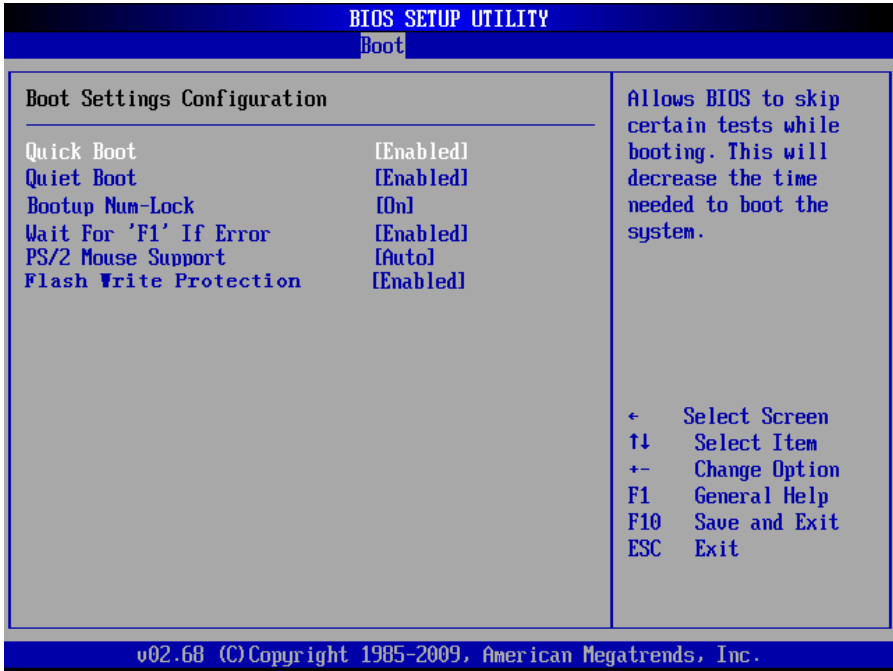
This option is for selecting BIOS or PnP O/S to allocate the interrupted resource in the peripheral devices.

Choose [YES], O/S will automatically allocate the resources If O/S doesn't have the PnP function, pls set this option as [NO].

4.4 Boot Menu

BIOS SETUP UTILITY						
Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
Boot Settings		Configure Settings during System Boot.				
▶ Boot Settings Configuration						
		← Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit				
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4.4.1 Boot Settings Configuration



Quick Boot

<Enabled>: BIOS will skip self-detection and accelerate POST

Quiet Boot

This option will show supplier’s Logo on boot screen. Options include [Disabled] and [Enabled].

Boot Up Num-Lock

This option is used to activate the Num-lock after booting the DOS system. <ON> for unlocking the number key; <OFF> for locking the number key and the number key will be under the control of cursor

Wait For “F1” If Error

If error occurs , wait for “F1”. When the error doesn’t lead to power down, then the message “Press ‘F1’ to resume” or “Press’ F1’ to Setup” will show, users can press F1 to make the system continue to work.

PS/2 Mouse Support

Enable or disable PS/2 Mouse support.

Flash Write Protection

This is used to setup BIOS flash write protection function. [Enabled] is to support this function.[Disabled]: system will unsupport this function.

4.5 Security Menu

BIOS SETUP UTILITY					
Main	Advanced	PCIPnP	Boot	Security	Chipset Exit
Security Settings				Install or Change the password.	
Supervisor Password :Not Installed					
User Password :Not Installed					
Change Supervisor Password					
Change User Password					
Boot Sector Virus Protection [Disabled]					
				← Select Screen	
				↑↓ Select Item	
				Enter Change	
				F1 General Help	
				F10 Save and Exit	
				ESC Exit	

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Supervisor Password

This option will show supervisor password status. If setup supervisor password, then system will show “Installed”. If not, system will show “Not Installed”.

User Password

This option will show user password status. If setup user password, then system will show "installed". If not, system will show "Not installed".

Change Supervisor Password

This option is used to change supervisor password. Select this option and press [Enter] to go to sub-menu, then you can change supervisor password.

Change User Password

This option is used to change user password. Select this option and press[Enter]. You will to the submenu to change your user password.

Boot Sector Virus Protection

<Enabled> the bootable sections protection will be available. If you 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)? _

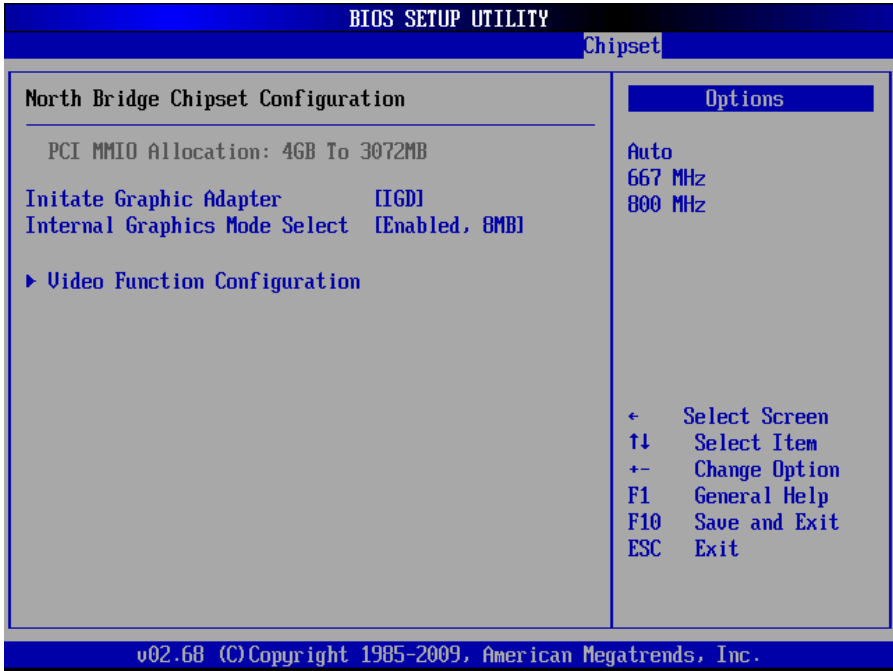
(Must press much 'N' and skip up)

<Disabled>: close this function.

4.6 Chipset Menu

BIOS SETUP UTILITY						
Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
Advanced Chipset Settings			Configure North Bridge features.			
WARNING: Setting wrong values in below sections may cause system to malfunction.						
▶ North Bridge Configuration						
▶ South Bridge Configuration						
			← Select Screen			
			↑↓ Select Item			
			Enter Go to Sub Screen			
			F1 General Help			
			F10 Save and Exit			
			ESC Exit			
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4.6.1 North Bridge Configuration



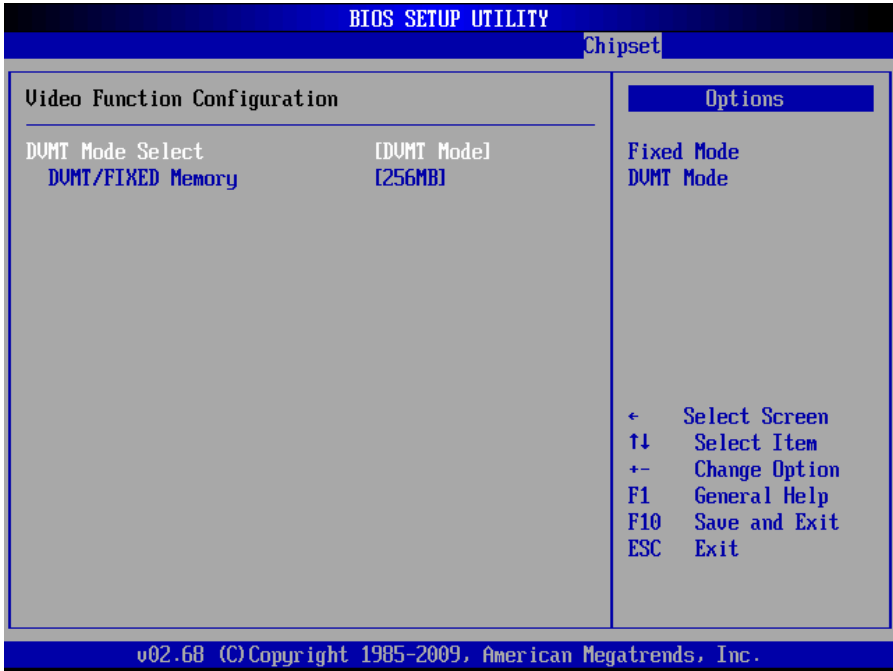
Initate Graphic Adapter

Set prior Graphic adapter

Internal Graphics Mode Select

The graphic memory size setting for the motherboard graphic card. It will share the vedio memory before installing driver; after installing driver, system will allocate the memory size according to DVMT

4.6.1.1 Video Function Configuration



DVMT Mode Select

Integrated Graphic card Shared Memory Mode Select.

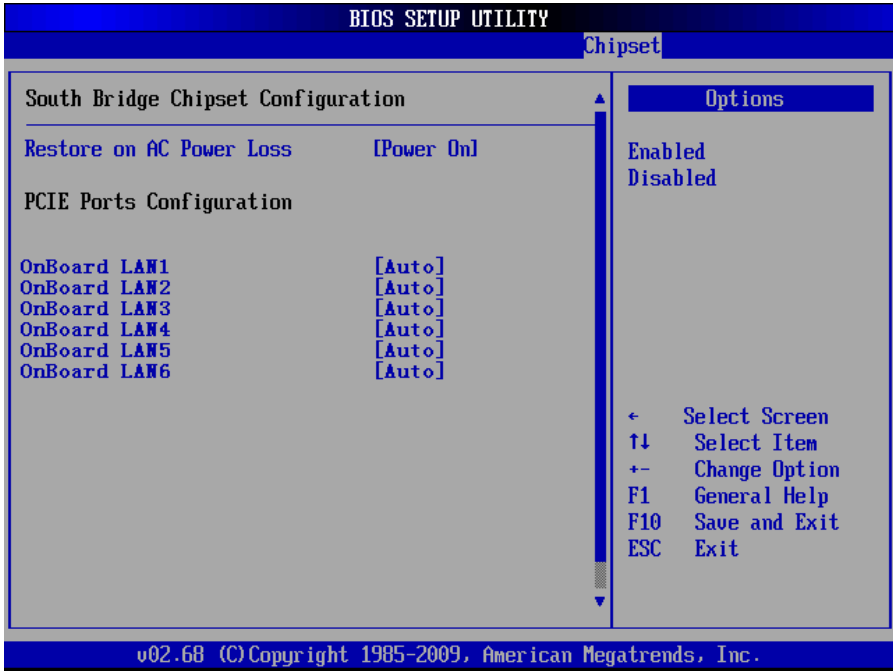
[DVMT]: Dynamic video memory Size. Drive will allocate shared video memory according to the size of system memory.

[FIXED]: Fixed Shared Video Memory Size. Drive will allocate the shared video memory according to the value that BIOS configured.

DVMT/FIXED Memory

It will show the size of shared memory.

4.6.2 South Bridge Chipset Configuration



Restore on AC Power Loss

To select the restore mode on AC power loss.

[Power Off]: Press power button to boot the computer after restore on AC power loss

[Power On]: Power on automatically

[Last State]: Back to the last state before the power loss

Onboard LAN 1/2/3/4/5/6

This is configured to enable or disable the onboard LAN controller.

4.7 Exit Menu



Save Changes and Exit

Press [Enter] under this option and press [Enter] again to confirm, then system will save all the changes and exit system setup.

Discard Changes and Exit

Press [Enter] under this option and press [Enter] again to confirm, then system will discard all changes and exit system setup.

Discard Changes

Press [Enter] under this option and press [Enter] again to confirm, then system will discard all changes and continue to stay at the setup interface.

Load Optimal Defaults

Load optimal defaults enable system to run at its optimal status. Recommend to first select this option before BIOS setup.

Load Failsafe Defaults

System auto load failsafe defaults under this option and will run at a low performance with a higher stability. When system fails, this function is very useful.



Appendix

Appendix

Appendix 1: Watchdog Programming 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 for 30 seconds, DEBUG in DOS:

```
C:\>debug
-o 2e 87
-o 2e 87           ;Unlock
-o 2e 2d
-o 2f e0           ;bit4=0 ,set pin as watchdog func
-o 2e 07
-o 2f 08           ;Select Logic Devices
-o 2e 30
-o 2f 01           ;Activate Logic Devices
-o 2e f5
-o 2f 00           ;Set timing unit as second/ ( Set as minute   o 2f 08 )
-o 2e f6
-o 2f 30           ;Set Timer Count as 30h=48Sec.
-o 2e aa           ;Lock the register
-q
C:\>
```

Upon the last line, Press "Enter", then system will auto reboot after counting 48 seconds

Reference code (c++ language):

```
-----  
outputb (0x2e, 0x87)  
outputb (0x2e, 0x87) // Open SUPER IO register  
outputb (0x2e, 0x2D)  
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 timing unit as second/ (set as minute outputb (0x2f, 0x08))  
outputb (0x2e, 0xF6)  
outputb (0x2f, 0x30)//Set Timer Count as 30h=48 seconds  
outputb (0x2E, 0xAA) //Lock SUPER IO register  
//----- code end -----
```

If system halted, watchdog enables system reboot automatically.

◦

Appendix 2: Glossary

ACPI

Advanced Configuration and Power Management Interface for short. ACPI specifications allow OS to control most power of computer and its extended devices.

BIOS

Basic input/output 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 DB 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.

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, 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.

PnP

Plug-and-Play. It is a specification that allows PC to configure its external devices automatically and can work independently without 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 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 is the 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.



敬请参阅

<http://www.norco.com.cn>

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