



PRO-2000  
USER' Manual V1.1

# 用户手册

## USER' Manual



Industrial & Communication Computer 

做中国最可信赖的工控产品

PRO-2000  
USER' Manual V1.1

Shenzhen HQ: 0755-27331166  
Beijing Office: 010-82671166  
Shanghai Office: 021-61212081  
Chengdu Office: 028-85259319  
Shenyang Office: 024-23960846  
Xi'an Office: 029-88338386  
Nanjing Office: 025-58015489  
Wuhan Office: 027-87858983  
Tianjin Office: 022-23727100  
Singapore: 65-68530809  
Netherlands: 31-040-2668554

For more information, please visit [www.norco-group.com](http://www.norco-group.com)

# Declaration of conformity



**Shenzhen NORCO Intelligent Technology Co.,Ltd.**

declares that the product

**PRO-2000 Embedded 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<br>Characteristics of information technology equipment |
| <input checked="" type="checkbox"/> EN 50081-1 | Generic emission standard Part 1:<br>Residential, commercial and light industry                                |
| <input checked="" type="checkbox"/> EN 50082-1 | Generic immunity standard Part 1:<br>Residential, commercial and light industry                                |

**European Representative:**

**Shenzhen NORCO Intelligent Technology Co.,Ltd.**

Signature:  \_\_\_\_\_

Place/Data: HONGKONG/2009

Printed Name: Anders Cheung

Position/Title: President

# Declaration of conformity



Trade Name : Shenzhen NORCO Intelligent Technology Co.Ltd.

Model Name : PRO-2000

Responsible Party : Shenzhen NORCO Intelligent Technology Co.Ltd.


Equipment Classification : FCC Class B Subassembly

Type of Product : PRO-2000 Embedded 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:   
\_\_\_\_\_

Date: 2013

## **Disclaimer**

Except for the accessories attached to the product as specified herein, what is contained in this user manual does not represent the commitments of NORCO Company. NORCO Company reserves the right to revise this User Manual, without prior notice, and will not be held liable for any direct, indirect, intended or unintended losses and/or hidden dangers due to improper installation or operation.

Before ordering products, please learn about the product performance from the distributors 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 belong to its respective owners.

The contents of this manual are protected by copyright law. All rights are strictly reserved. Any form of unauthorized reproduction including but not limited to carbon copy, facsimile transmission and electronic copy or email is prohibited.

## Attentions

1. Please first read the user manual carefully before using this product
2. Please first unplug the AC power cable from the power socket before relocating the machine
3. Please make sure all power cords are disconnected before you go ahead to connect or disconnect any devices to/from the system.
4. To prevent any unnecessary damage to the products due to frequent power on/off, please wait at least 30 seconds to restart the unit after the shutdown.
5. Use a cross screwdriver to operate the device. Magnetic screwdriver would be better to avoid leaving any screws inside the case. Do not leave any tools or screws inside the case.
6. Use a wet cloth to clean the host and make sure the power is disconnected in advance. Do not use cleaning liquid or a spray cleaner.
7. To avoid fire hazard or damage to the machine, please make sure no liquid leak or poured into the machine and ensure good cooling performance.
8. If system goes wrong during the operation, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

# Table of Contents

Chapter 1 Product Introduction .....	1
1.1 Specifications.....	1
Chapter 2 Hardware Functions .....	4
2.1 External Interfaces Location .....	4
2.1.1 Serial Ports (COM1-COM10) .....	5
2.1.2 Ethernet (LAN1, LAN2) .....	5
2.1.3 Audio (Line-out, Mic-in) .....	6
2.1.4 Display Ports (VGA , LVDS) .....	6
2.1.5 Power Interface (DC_JACK).....	8
2.1.6 USB (USB12, USB34, USB5_6) .....	8
2.1.7 PS/2 .....	9
2.1.8 GPIO .....	9
2.2 Jumper Settings .....	10
2.2.1 CMOS Clear/Hold Jumper Setting (JCC) .....	11
2.2.2 Auto Boot upon Restore AC Power (JAT) .....	12
2.2.3 LVDS Rated Voltage Select Jumper (J11, J12) .....	12
2.3 Internal Interfaces .....	13
2.3.1 SATA Ports (SATA, JHDD).....	13
2.3.2 Display Port (LVDS) .....	15
2.3.3 LVDS Power Voltage (JLVDS) .....	16
2.3.4 FAN Interface (CPUFAN) .....	16
2.3.5JBAT .....	18
2.3.6 Power Interface (PWR).....	18
2.3.7 J1,J2 .....	20
2.3.8 Front Panel Interface (JFP) .....	21
2.3.9 Memory Slot.....	21
Chapter 3 BIOS SETUP .....	22
AMI BIOS Flash .....	22
AMI BIOS Description .....	22
BIOS Settings .....	22

3.1 Main Menu .....	23
3.2 Advanced .....	24
3.2.1 CPU Configuration .....	25
3.2.2 IDE Configuration .....	26
3.2.3 Super IO Configuration .....	27
3.2.4 Hardware Health Configuration .....	28
3.2.5 ACPI Configuration .....	29
3.2.6 AHCI Configuration .....	31
3.2.7 APM Configuration .....	32
3.2.8 Remote Access Configuration .....	33
3.2.9 USB Configuration .....	34
3.2.10 Onboard LAN Configuration .....	36
3.2.11 Secondary SuperIO Configuration .....	37
3.3 PCI PnP .....	38
3.4 Boot Menu .....	39
3.5 Security Menu .....	41
3.6 Chipset Menu .....	42
3.6.1 North Bridge Configuration .....	43
3.6.2 South Bridge Configuration .....	45
3.7 Exit Menu .....	46
Appendix .....	48
Appendix 1: Install Driver .....	49
Appendix 2: Watchdog Programming Guide .....	50



## **Packing List**

Thank you for purchasing NORCO products. Please check your package carefully according to the checklist below. If you find any components lost or damaged, please contact your vendor.

- |                                      |        |
|--------------------------------------|--------|
| ■ PRO-2000                           | 1 unit |
| ■ Green 3Pin Phoenix Power Connector | 1pcs   |
| ■ Drivers and Utilities (CD)         | 1pcs   |



## Chapter 1 Product Introduction

# Chapter 1 Product Introduction

## 1.1 Specifications

System	Description	Specification
Processor	CPU	D510
	Chipset	ICH8M
	BIOS	W25Q80BVSSIG
Memory	Type	Onboard DDR2 400
	Capacity	1GB
Power	Single Supply	DC12V
Display	VGA	1x VGA, 1x LVDS , 2 x VGA (SM750 extension)
Audio	Chip	ALC662 1xLine out ,1xMIC
LAN	Chip	2x 82583V
Storage	SATA	1x7Pin SATA, 1x 2.5" HDD
	Mini-IDE	1
	CF	1
Front Panel	LVDS+VGA	Single channel 18bit, onboard DB15 VGA output
	USB	6 x USB 2.0
	LAN	10/100/1000M, self-adaptive RJ45
	COM	10x RS232 (DB9): COM7-10 support RS485/422 COM3-4 can be changed to 2x DB15 VGA out
	AUDIO	Two-channel stereo out (green), Mic-in(Pink)
	Green Power Jack	2PIN DC In
	LED Indicator	PWR_LED(green), HDD_LED(red)
	Switch	reserved
	HDD	inbuilt
	CF	Standard CF socket, non-swappable
	GPIO	DB25 GPIO, 16x GPO, 8x GPI
	PS2	Standard PS2

	Power Interface	DC: 12V+-5%
Watchdog	Output	Reset
	Time Interval	Programmable 1-255S / 1-255m
Dimension		204mmX210mmX99.9mm
Cooling		Fanless
Motherboard		BPC-7878

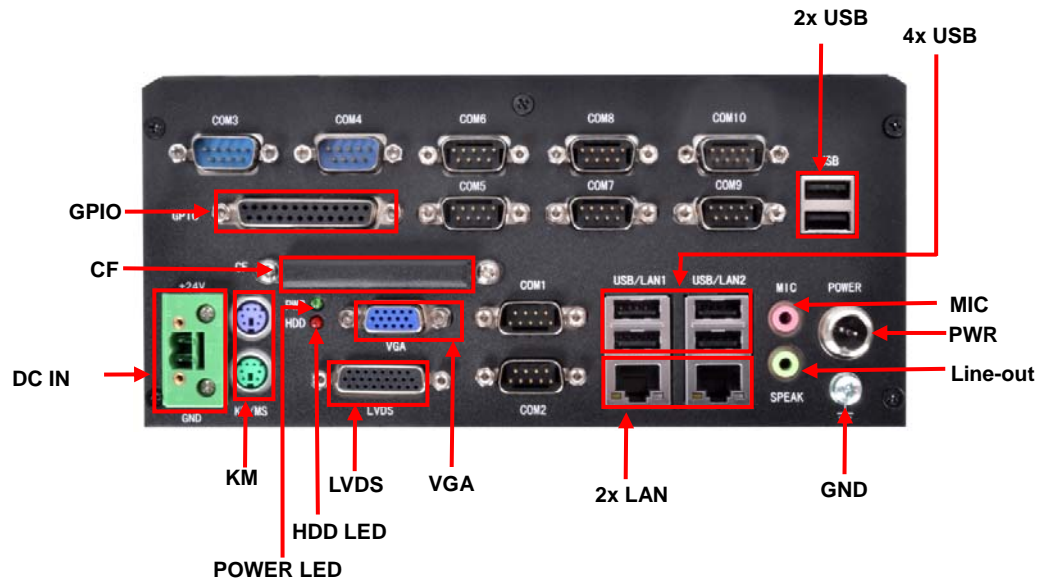
# Chapter 2 Hardware Functions



# Chapter 2 Hardware Functions

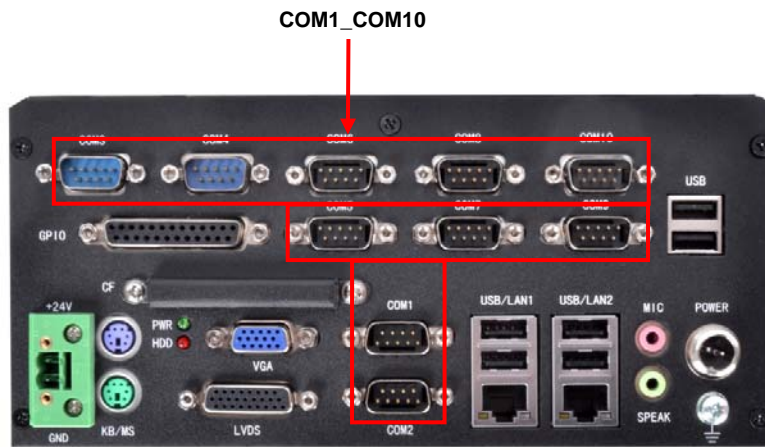
## 2.1 External Interfaces Location

PRO-200 Rear View



### 2.1.1 Serial Ports (COM1-COM10)

PRO-2000 provides 10x standard DB9 COM ports to connect external devices. Users can enable or disable these serial ports and select ports' IRQ and I/O addresses via BIOS settings.

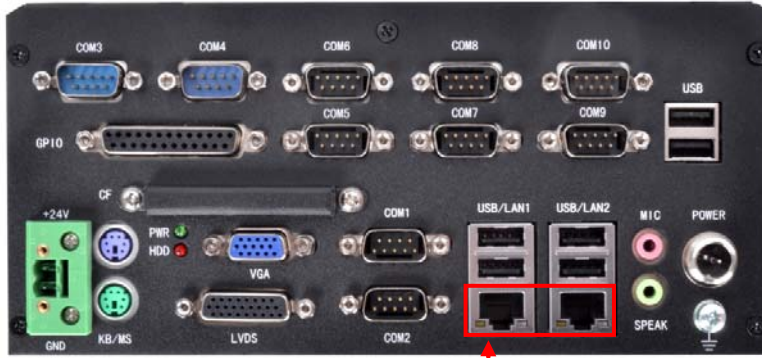


#### COM1\_COM10:

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

### 2.1.2 Ethernet (LAN1, LAN2)

PRO-2000 provides 2x standard RJ45 Ethernet ports. Both sides of the RJ-45 interface have one LED indicator. The yellow LED indicates data transfer status. The green LED indicates network link status.



**RJ45 LAN LED Status:**

**2x LAN**

LILED(Green)	Function	ACTLED(Yellow)	Function
On	10/100/1000M	Flash	Transmit data

**2.1.3 Audio (Line-out, Mic-in)**

PRO-2000 provides 1x Line-out (green) and 1x Mic-in(pink).



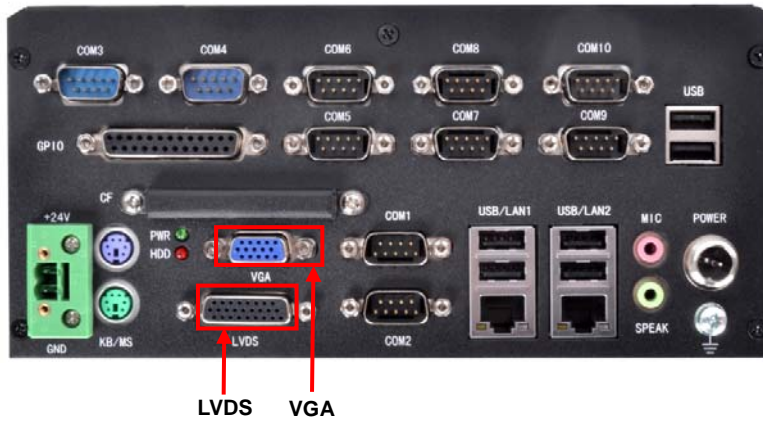
**MIC-in**

**Line-out**

**2.1.4 Display Ports (VGA , LVDS)**

PRO-2000 provides one 15Pin VGA port and one 2x 10Pin LVDS.





**VGA:**

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	SCL

**LVDS:**

Signal Name	Pin		Signal Name
LDC0	1	2	LDC1
LDC2	3	4	NC
NC	5	6	NC
NC	7	8	NC
NC	9	10	LL1C#
LDC0#	11	12	LDC1#
LDC2#	13	14	NC
NC	15	16	NC
NC	17	18	NC
LL1C	19	20	VDD
NC	21	22	GND
GND	23	24	GND

**2.1.5 Power Interface (DC\_JACK)**

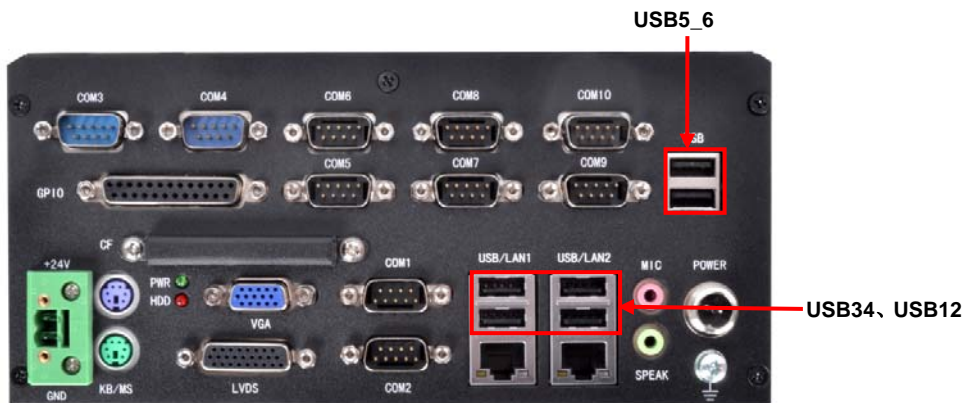


**DC-JACK**

Pin	Signal Name
1	DC+9~30V
2	GND

**2.1.6 USB (USB12, USB34, USB5\_6)**

PRO-2000 provides 6x standard USB ports.



**USB12, USB34, USB5\_6:**

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

4	GND
---	-----

**2.1.7 PS/2**

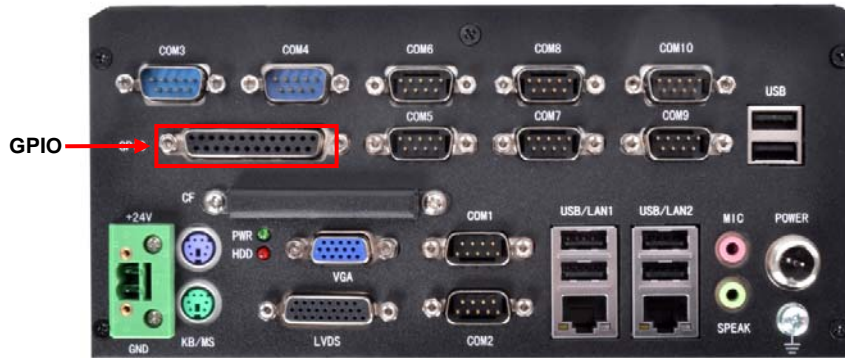
PRO-2000 provides 1x standard keyboard and mouse interface, which needs to be transferred to standard PS/2 port to connect keyboard and mouse.



**KM:**

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

**2.1.8 GPIO**



### GPIO:

Signal Name	Pin		Signal Name
GND	1	15	GPO14
GPO1	2	16	GPO15
GPO2	3	17	GPO16
GPO3	4	18	GPI1
GPO4	5	19	GPI2
GPO5	6	20	GPI3
GPO6	7	21	GPI4
GPO7	8	22	GPI5
GPO8	9	23	GPI6
GPO9	10	24	GPI7
GPO10	11	25	GPI8
GPO11	12	14	GPO13
GPO12	13		

## 2.2 Jumper Settings

Please refer to the following jumper setting guide before installing your hardware devices.

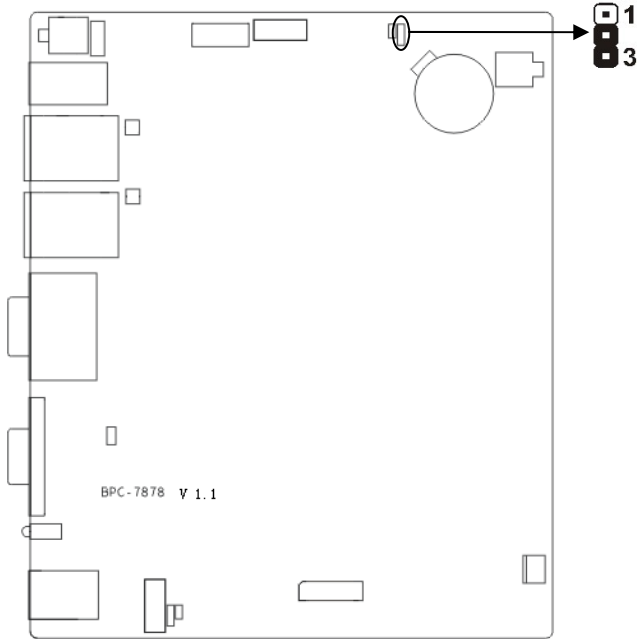
**Note:** How to identify PIN1 of jumper and interface: Please observe the word mark of plug socket, it will use "1" or bold line or triangular symbols; and please look at the back of PCB. Each interface weld spot has a square point, which is PIN 1. The PIN1 of all the jumpers has a white arrow beside it

**2.2.1 CMOS Clear/Hold Jumper Setting (JCC)**

CMOS is powered by the onboard button cell. Clear CMOS will lead to permanent elimination of previous system settings and back to the original system setting (factory default).

Steps:

- (1) Turn off the computer and disconnect power supply;
- (2) Place jumper cap on JCC Pin1 and Pin2 to make them short(close)for 5-10 seconds (Pin1-2) and then remove the jumper cap to restore the default setting with Pin2-3 closed (Pin 2-3);
- (3) Start the computer and press<Del> to enter BIOS setting and reload the optimal defaults.
- (4) Save and exit.

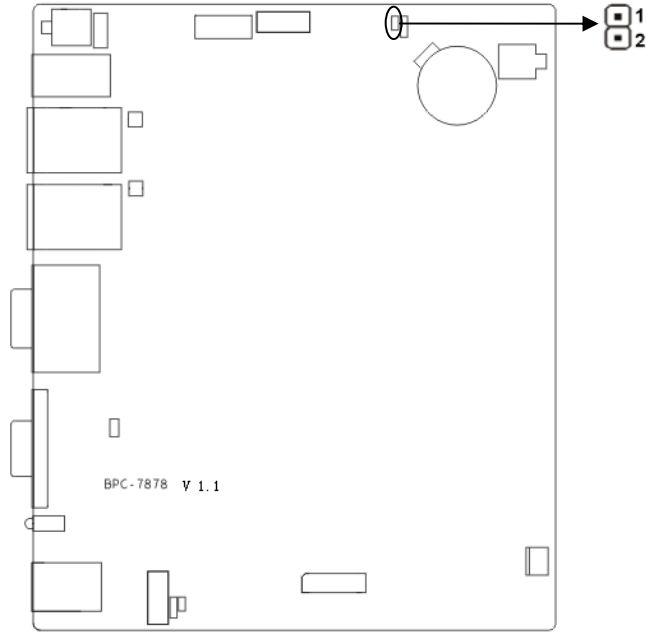


**JCC1:**

Setting	JCC
1-2	Clear CMOS, BIOS back to initialization(factory default)
2-3	Normal status, default setting (general)

**⚠** Do not clear CMOS when the computer is working, otherwise, it will cause damage to the motherboard !

**2.2.2 Auto Boot upon Restore AC Power (JAT)**

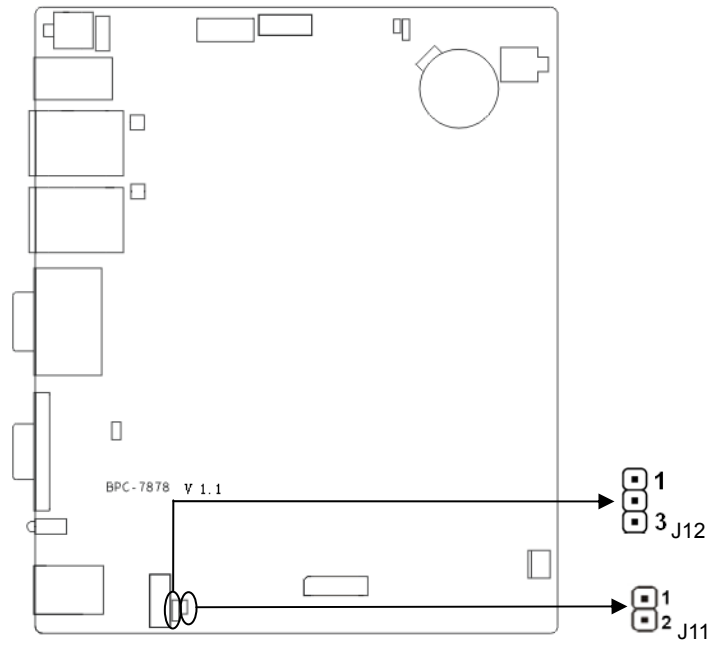


**JAT:**

Setting	JAT
Open	Not boot automatically
Close	Auto-boot

**2.2.3 LVDS Rated Voltage Select Jumper (J11, J12)**

Wrong voltage selection may damage the LVDS panel. Please first make clear about the LVDS panel's voltage before setup this jumper.



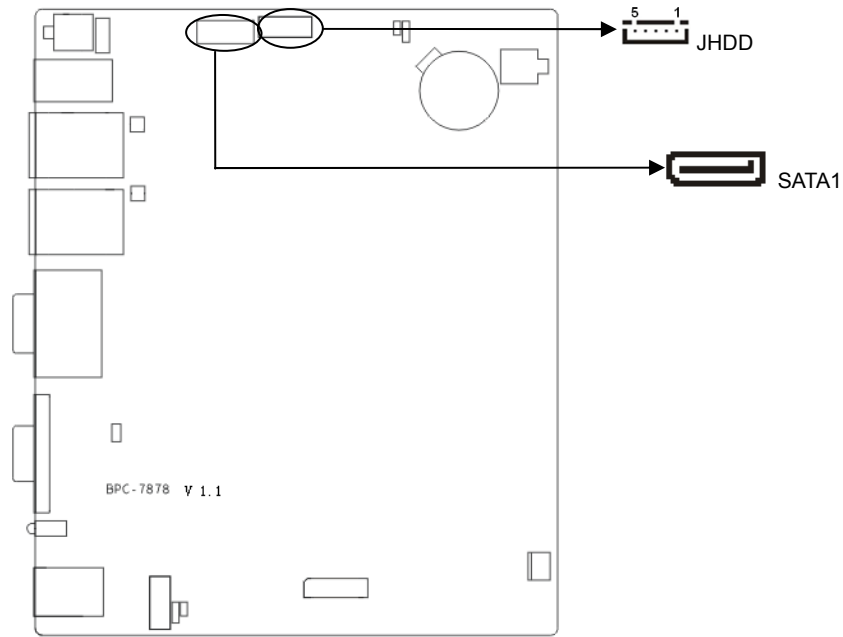
**J11, J12:**

Setting	3.3V	5V	12V
J11	×	×	1-2
J12	1-2	2-3	×

## 2.3 Internal Interfaces

### 2.3.1 SATA Ports (SATA, JHDD)

PRO-2000 provides 1x standard 7Pin SATA port and is connected to the power supply via JHDD



**SATA1:**

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

**JHDD:**

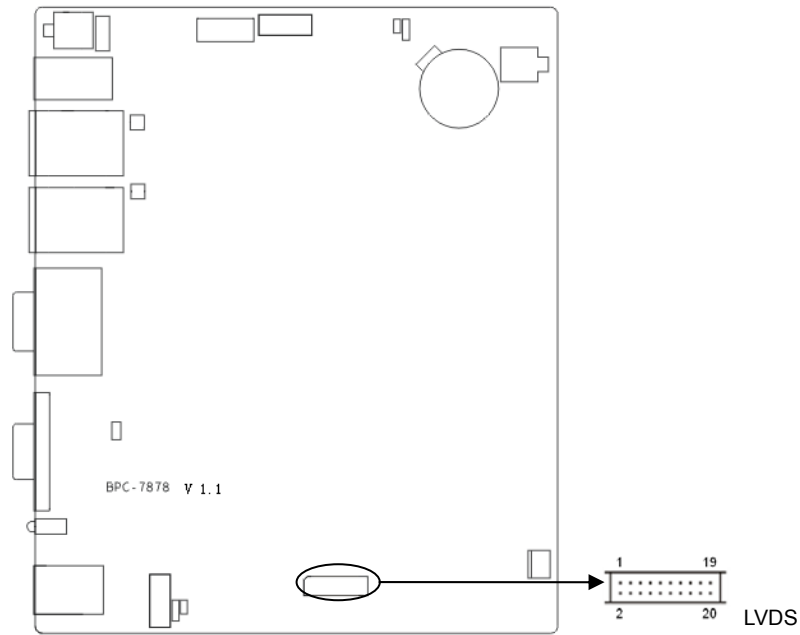
Pin	Signal Name
1	+12V
2	GND
3	VCC
4	GND



5	VCC3
---	------

**2.3.2 Display Port (LVDS)**

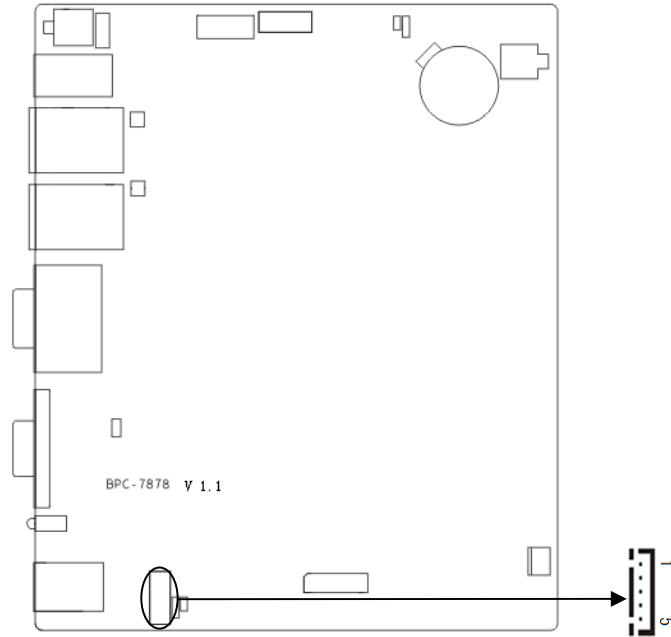
One 2x 10Pin LVDS port



**LVDS:**

Signal Name	Pin		Signal Name
VCC	1	2	VCC
GND	3	4	GND
LDC0+	5	6	LDC
LDC0-	7	8	CLK
GND	9	10	GND
LDC1+	11	12	CLK-
LDC1-	13	14	CLK+
GND	15	16	GND
LDC2+	17	18	NC
LDC2-	19	20	NC

### 2.3.3 LVDS Power Voltage (JLVDS)



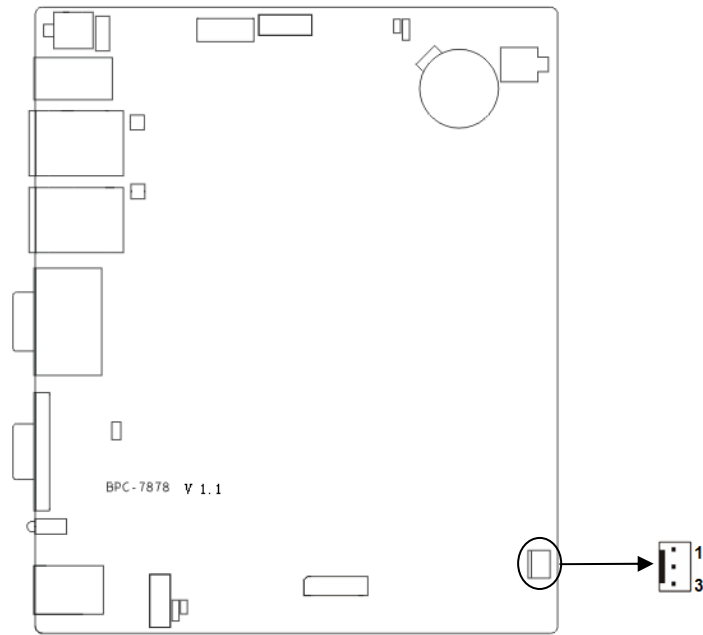
#### JLVDS:

Pin	Signal Name
1	+12V_LVDS (12V)
2	BKLT_EN (ON/OFF)
3	GND
4	BKLT_CTRL (DIMM)
5	VCC_LVDS (5V)

### 2.3.4 FAN Interface (CPU FAN)

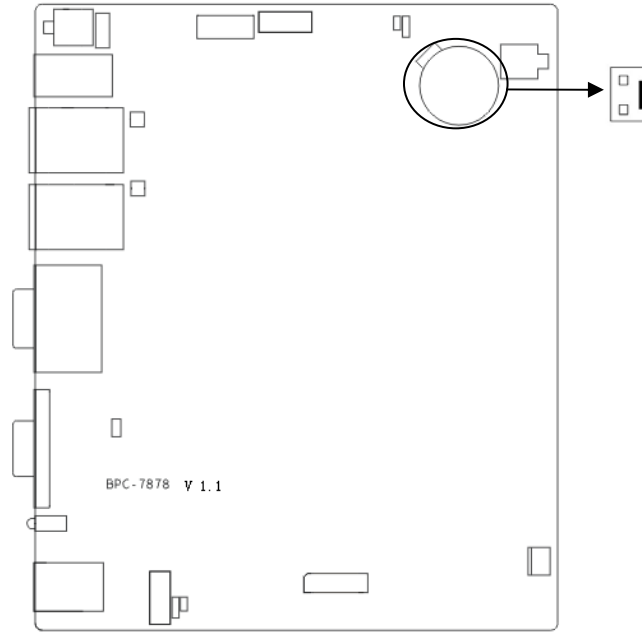
Board provides one 3Pin CPU FAN interface. Please remember following two points when using CPU FAN:

- (1) FAN current  $\leq 500\text{mA}$  (6W, 12V)
- (2) Please make sure the FAN cable matches the socket wiring.



**CPUFAN:**

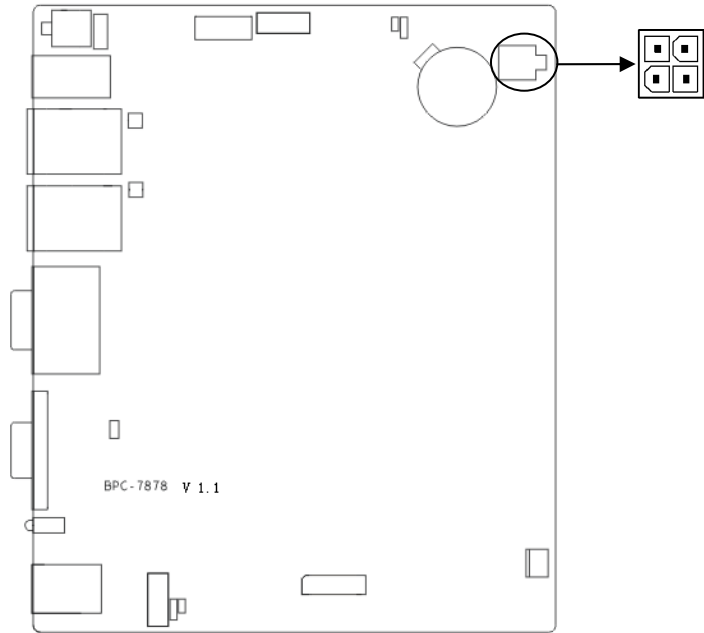
Pin	Signal Name
1	GND
2	+12V
3	Speed detect

**2.3.5JBAT****JBAT:**

Pin	Signal Name
1	BAT+
2	GND

**2.3.6 Power Interface (PWR)**

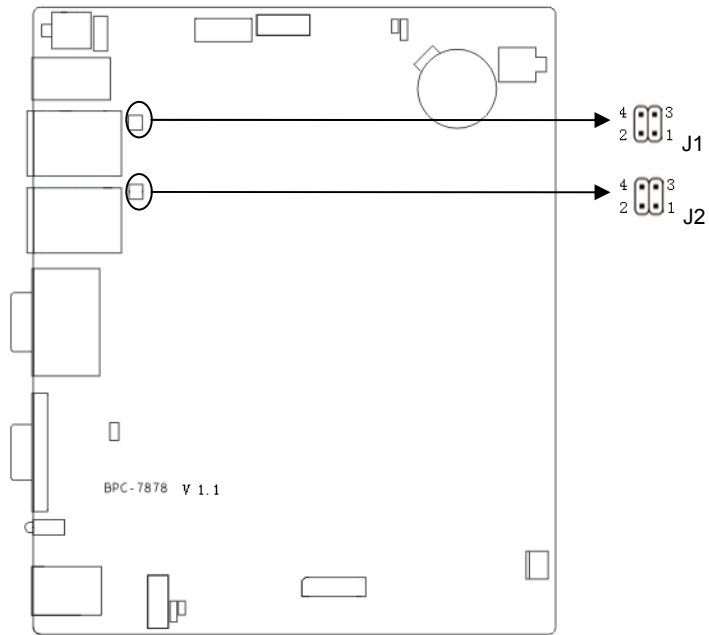
Square 2x2Pin Single power supply interface



**PWR:**

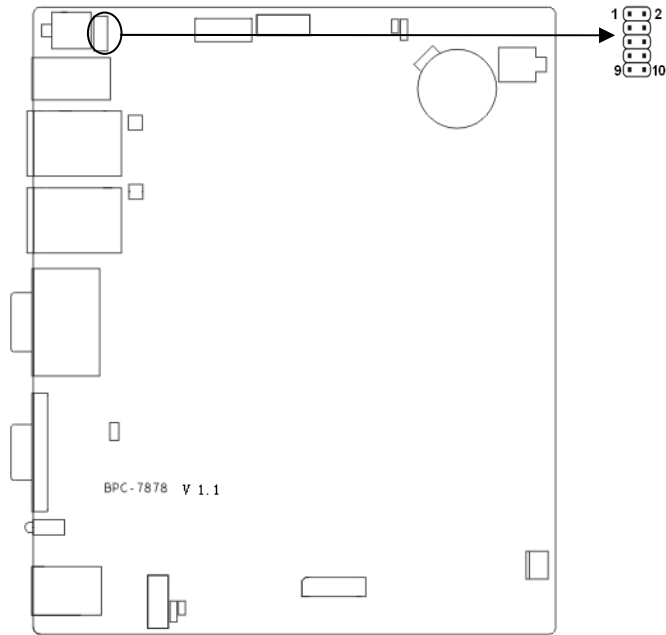
Pin	Signal Name
1	GND
2	GND
3	+12V
4	+12V

2.3.7 J1, J2



### 2.3.8 Front Panel Interface (JFP)

JFP is used to connect all function buttons and indicator LEDs on chassis front panel.



**JFP:**

Signal Name	Pin		Signal Name
PWRLED+	1	2	GND
HDD_LED+	3	4	HDD_LED-
BUZZ+	5	6	BUZZ-
RSTBTN	7	8	GND
PWRBTN	9	10	GND

### 2.3.9 Memory Slot

Single Channel onboard DDR2 400MHz 1G



## Chapter 3 BIOS SETUP



## Chapter 3 BIOS SETUP

### AMI BIOS Flash

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.

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

Specific Command: C:\ AFUDOS \*\*\*\*.rom /P /B/C /N /X

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

#### Remark:

1. BIOS upgrading is only executed when it is necessary.
2. Please uses the BIOS SETUP Utility in the CD-ROM provided by us or download the latest version on related websites.
3. Please do not power off or reboot the system during BIOS upgrading, otherwise, the BIOS may be damaged or system may not be able to boot again.
4. After BIOS flash, please manually Load Default to optimize BIOS settings.
5. Please backup your BIOS in advance.

### 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.

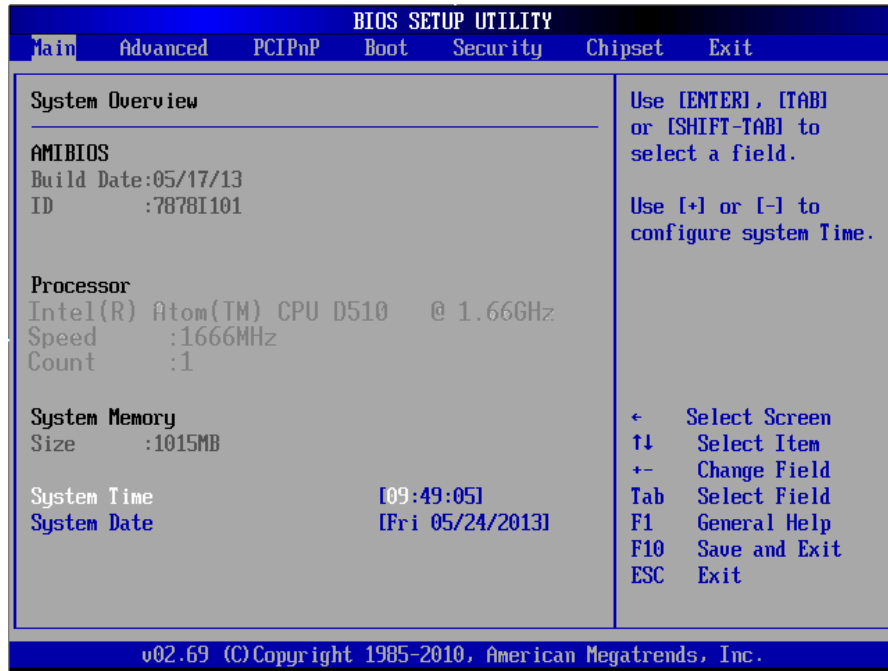
### BIOS Settings

1. Power on or restart the system, self-detection message will display on the screen.
2. When system pops out the prompt "Press <Del> to enter setup, <F11> to Popup menu", please press <Del> key to enter BIOS setup interface.

3. Use the “← ↑ → ↓” to select 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.

Note: BIOS is updated regularly. Following picture is only for your reference. It may be different from the BIOS version that you are using now.

### 3.1 Main Menu



**BIOS Build Date**

**BIOS ID**

**Processor:** CPU information including manufacturer, model, etc

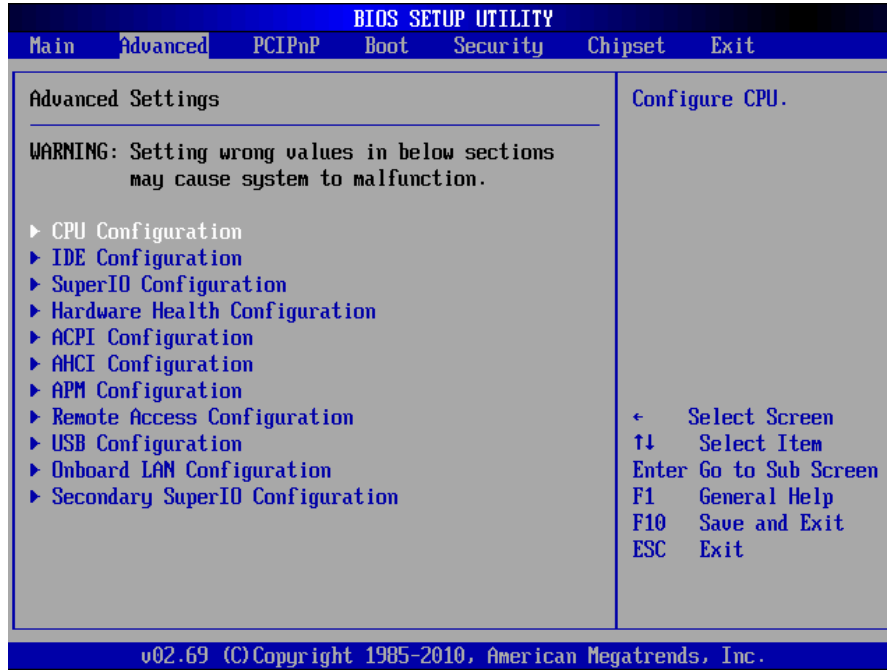
**System Memory:** Memory Size

**System Time**

System Time Format: Hour (00-23)/ Minute (00-59)/Second(00-59).

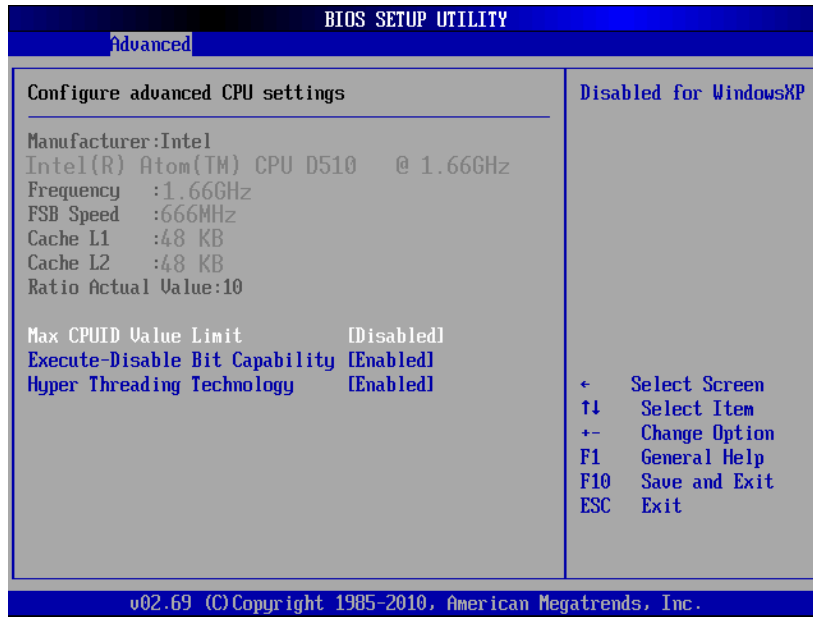
**System Date**

System Date Format: Month (Jan.-Dec.)/Date (01-31)/Year ( up to 2099)/Week (Mon.~Sun.).

**3.2 Advanced**

**Note:** Wrong configuration of the following parameters will lead to system failure. Please follow the instructions below to set up the system.

### 3.2.1 CPU Configuration



The read only option contains detailed information of the CPU, including the CPU vendor, model, frequency, Level1 cache, level2 cache, etc.

#### Max CPUID Value Limit

Please set this item as [Enabled] if the system OS doesn't support the extended CPUID function.

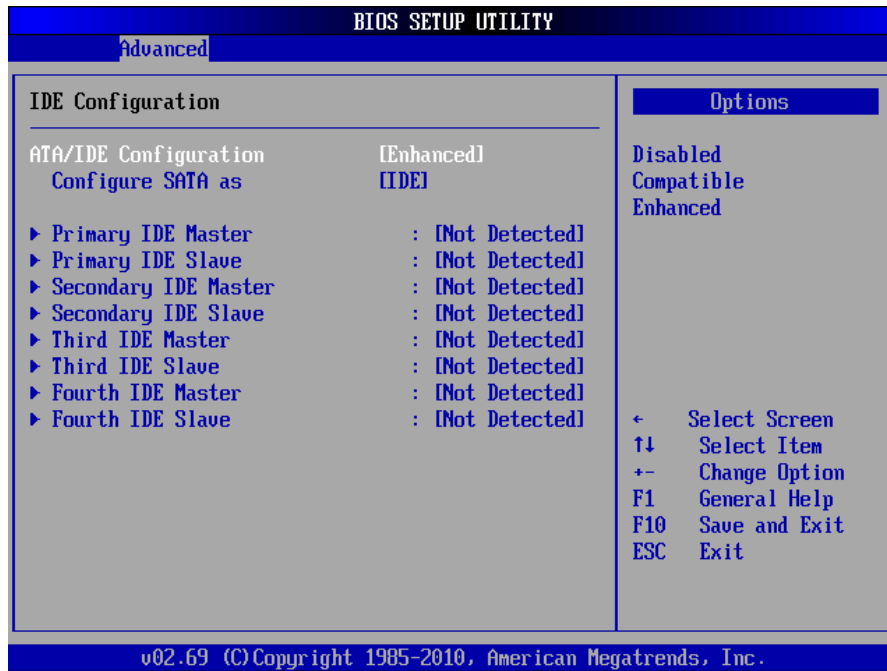
#### Execute-Disable Bit Capability

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. System default this option [Enabled].

#### Hyper-Threading Technology

Enable or disable CPU Hyper-Threading Technology.

### 3.2.2 IDE Configuration



#### ATA/IDE Configuration

ATA/IDE configuration mode select. Two options available: [Compatible] mode and [Enhanced] mode.

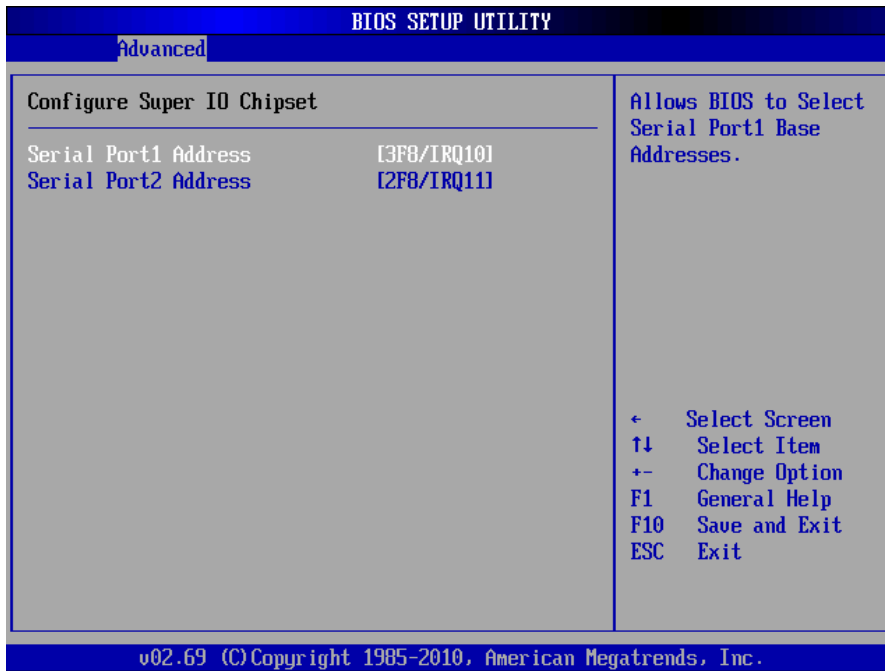
#### Configure SATA as

To configure SATA as [AHCI] or traditional [IDE]

#### Primary/Secondary /Third/Fourth IDE Master/Slave

This option indicates the information of the connected Hard Disk

### 3.2.3 Super IO Configuration



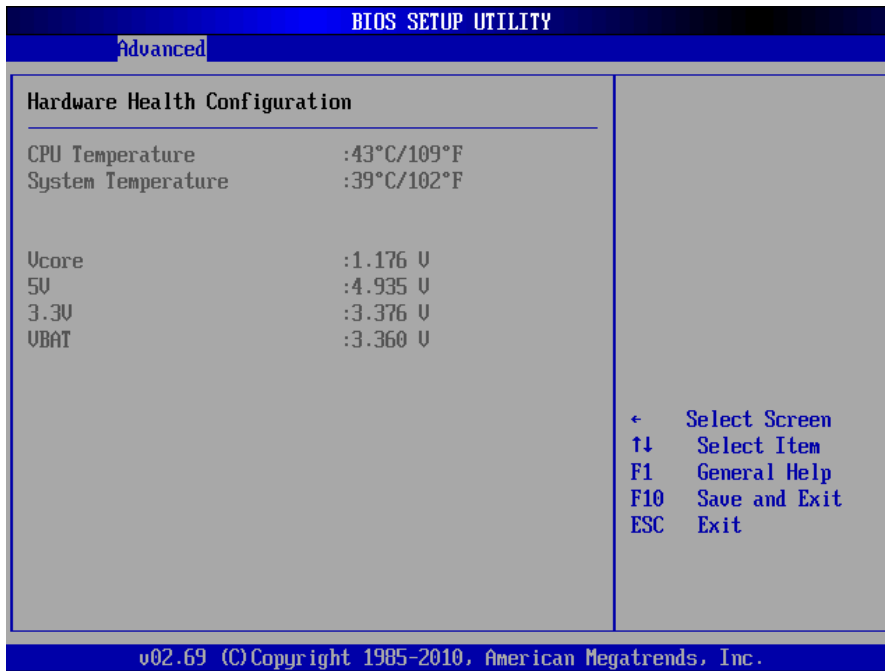
#### Serial Port1 Address

To setup Serial Port 1 address and IRQ, options include [3F8/IRQ10 (default)], [2F8/ IRQ11], and [Disabled]. Recommend to select the default value. COM1, COM2 cannot utilize the same address and IRQ.

#### Serial Port2 Address

To setup Serial Port 1 address and IRQ, options include [3F8/IRQ10], [2F8/IRQ11(default)], [Disabled]. Recommend to select the default value. COM1, COM2 cannot utilize the same address and IRQ.

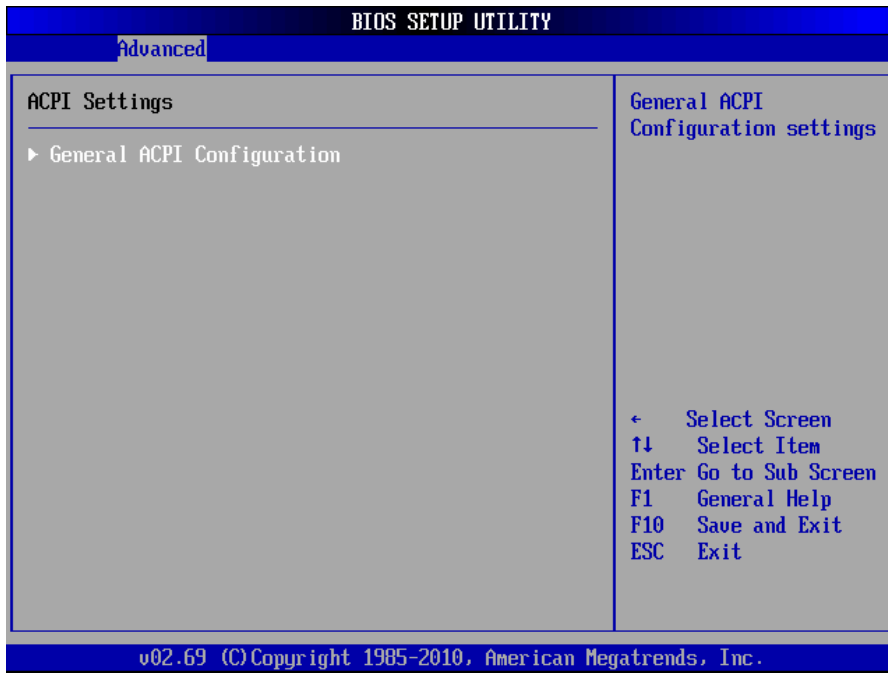
### 3.2.4 Hardware Health Configuration



#### Hardware Health Configuration

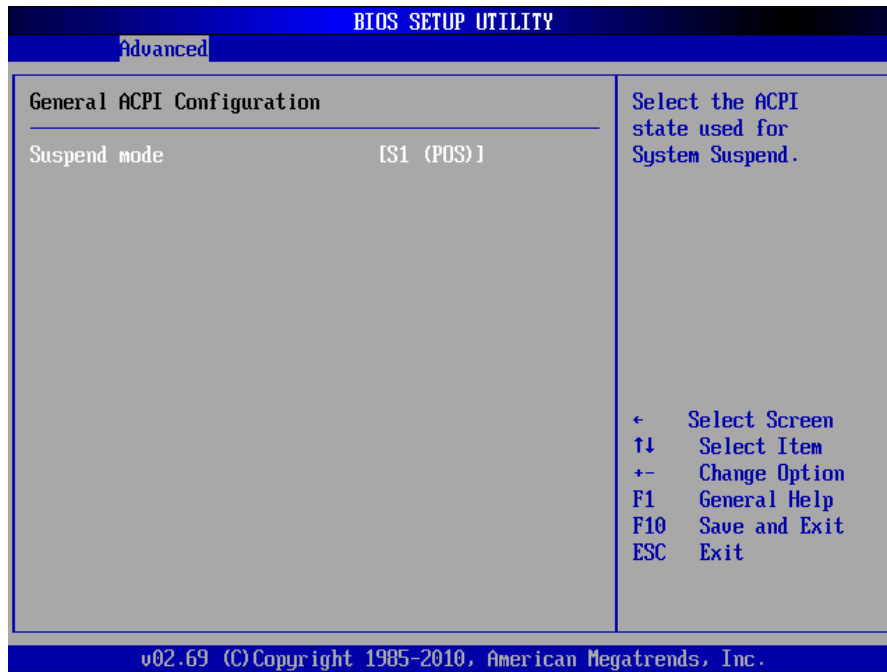
Display the status of the system including system temperature, CPU temperature, CPU Fan Speed, Voltage etc.

### 3.2.5 ACPI Configuration



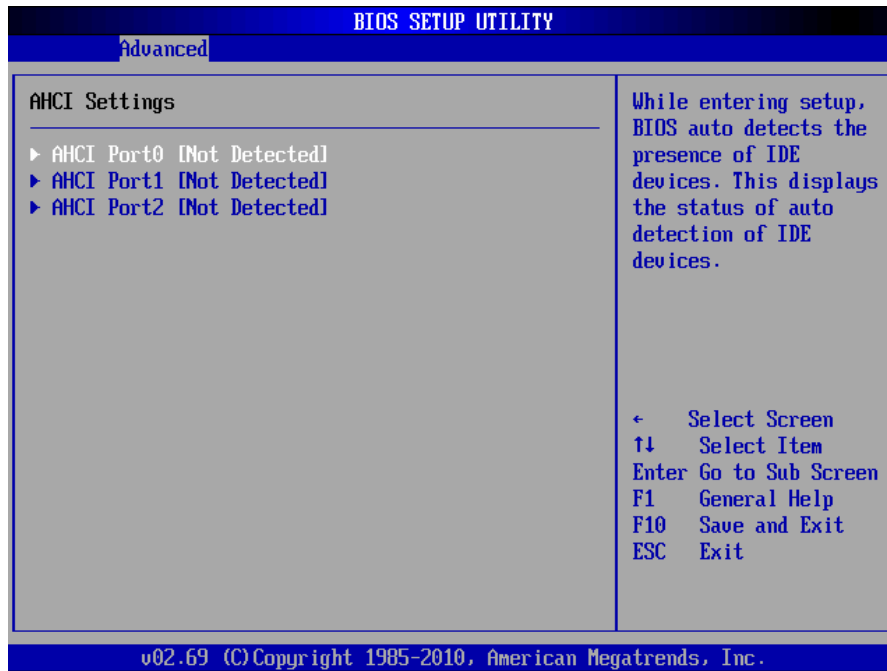
Move cursor to "General ACPI Configuration " and press [Enter], then following screen will pop out:



**Suspend mode**

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

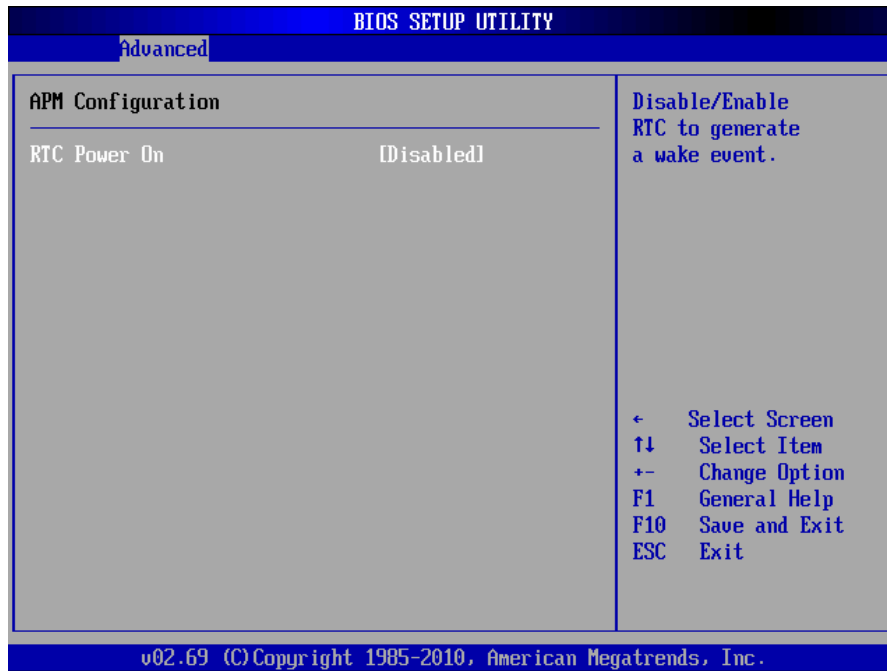
### 3.2.6 AHCI Configuration



#### AHCI Settings

When selecting Configure SATA as "AHCI", "AHCI Port0/1/2" will show hard disk information.

### 3.2.7 APM Configuration



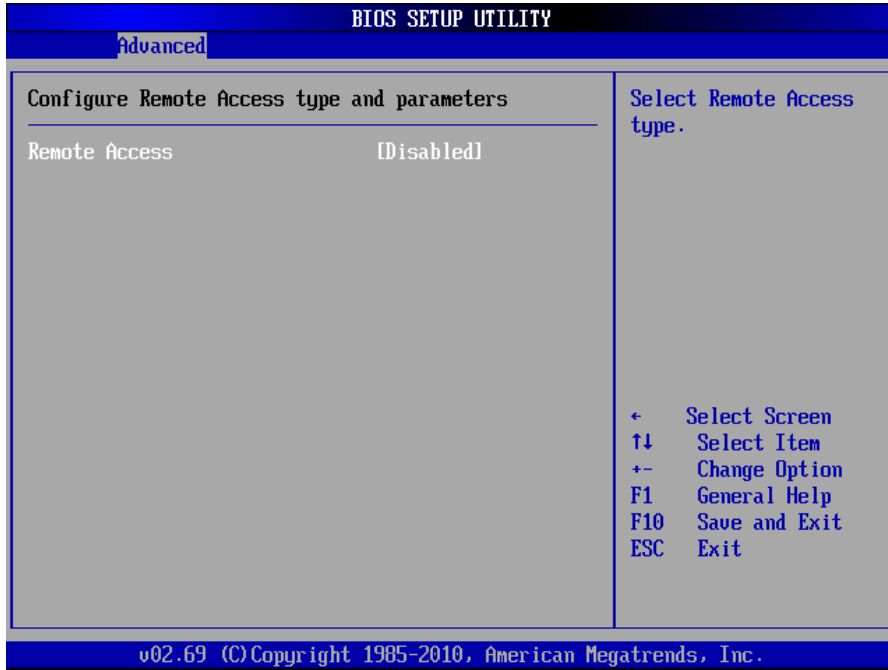
#### RTC Power On

Enable or disable the RTC Power On function. System defaults [Disabled]. When enabling this function, please set up following two options.

**RTC Power On Date:** Set the date for system RTC power on

**RTC Power On Time:** Set the exact time for system RTC power on

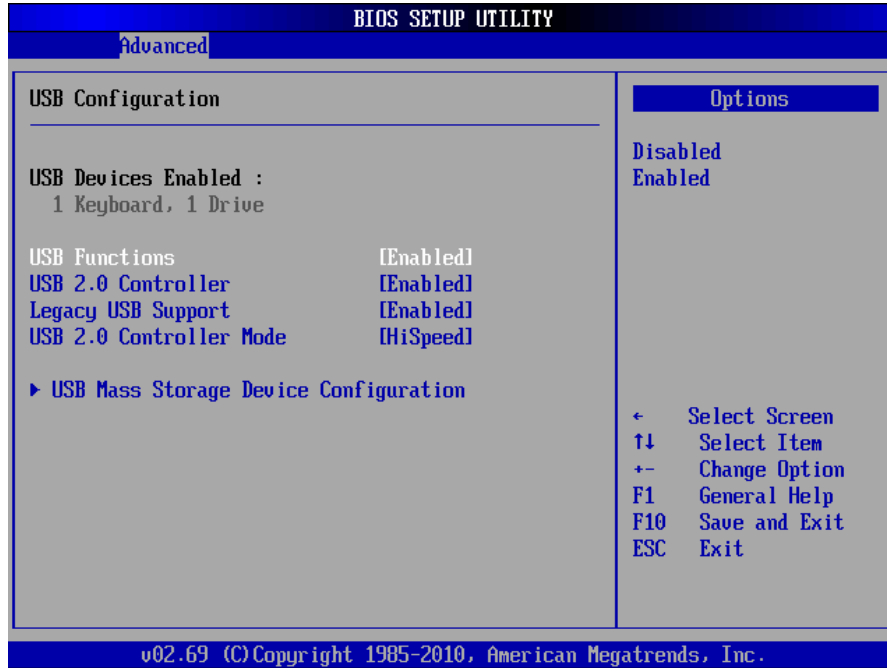
### 3.2.8 Remote Access Configuration



#### Remote Access

Enable or disable remote access function

### 3.2.9 USB Configuration



#### USB Devices Enabled (Read Only)

This option will display the USB devices that connected to the motherboard.

#### USB Functions

To enable or disable the USB ports.

#### USB2.0 Controller

To enable or disable the USB2.0 Controller.

#### Legacy USB Support

Legacy USB support setting. To support USB devices in DOS mode, such as USB FLASH disk, USB keyboard, set this option as [Enabled] or [Auto]. Otherwise, select [Disabled].

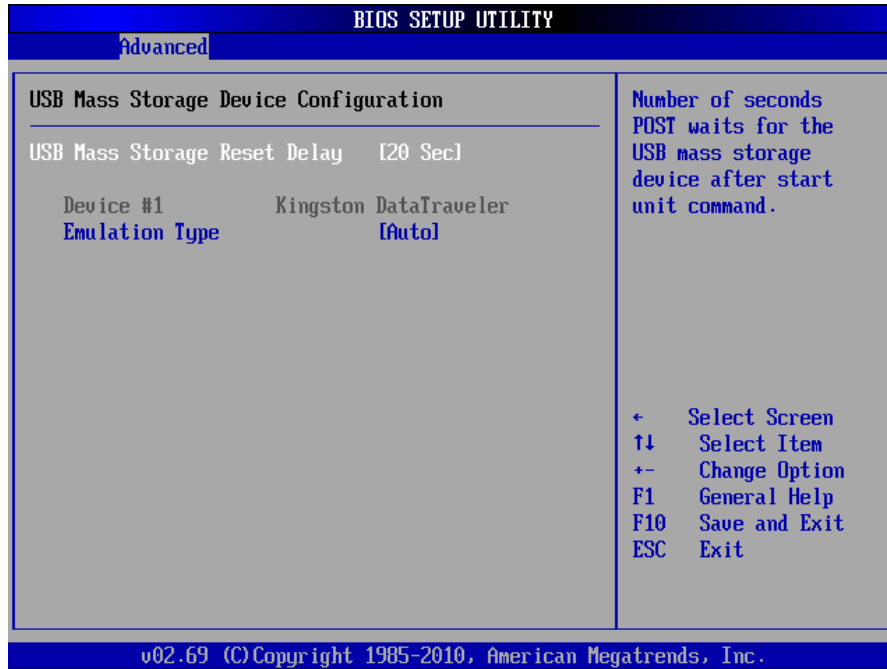
#### USB2.0 Controller Mode

Set USB 2.0 transmission mode:

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

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

Move cursor to "USB Mass Storage Device Configuration" and press "Enter" , then following screen will pop out:



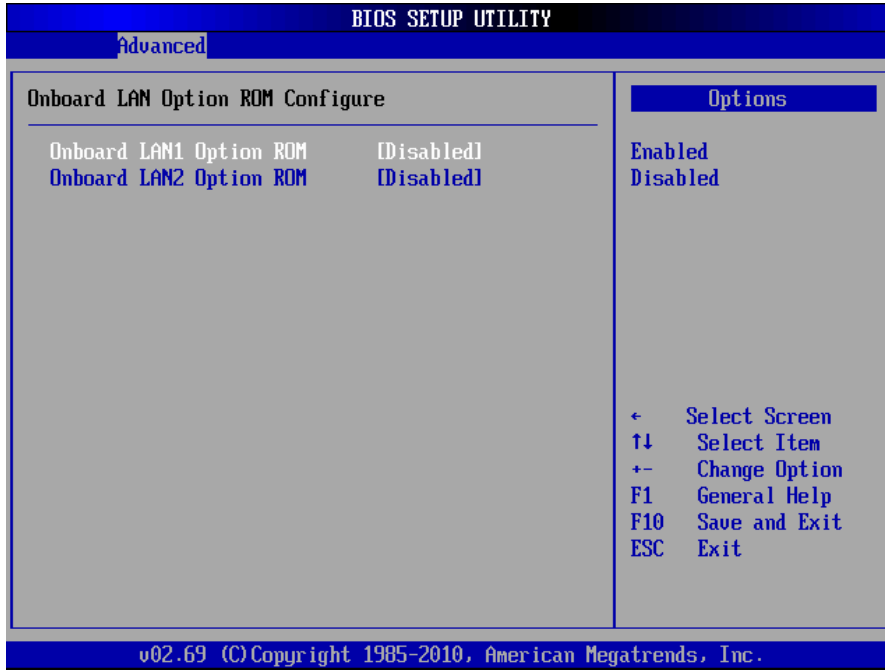
#### USB Mass Storage Reset Delay

Set USB mass storage reset delay , system default value [20Sec].

#### Emulation Type

Set the USB flash disk emulation type when U disk boot. Emulation types include Floppy, harddisk, CD-ROM. System defaults [Auto].

### 3.2.10 Onboard LAN Configuration



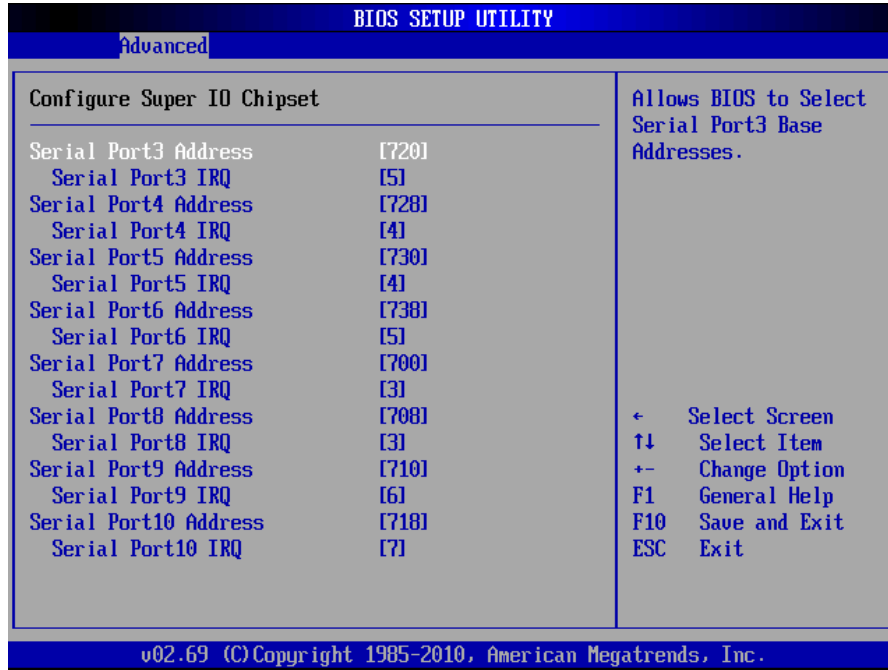
#### Onboard LAN1 Option ROM

Enable or disable the onboard LAN1/LAN2 Option ROM

#### Onboard LAN2 Option ROM

Enable or disable the onboard LAN1/LAN2 Option ROM

**3.2.11 Secondary SuperIO Configuration**



**Serial Port3/ Port4/ Port5/ Port6 Address**

Set serial port 3/4/5/6 address. Setting values contain [720],[728],[730],[738],[Disabled].

Recommend to select the default value. Serial ports cannot utilize the same address.

**Serial Port3/ Port4/ Port5/ Port6 IRQ**

Set serial port 3/ 4/ 5/ 6 IRQ, setting options: 3, 4, 5, 7, 10, 11.

**Serial Port7/ Port8/ Port9/ Port10 Address**

Set serial port 7/8/9/10 address. Setting values contain [700],[708],[710],[718],[Disabled].

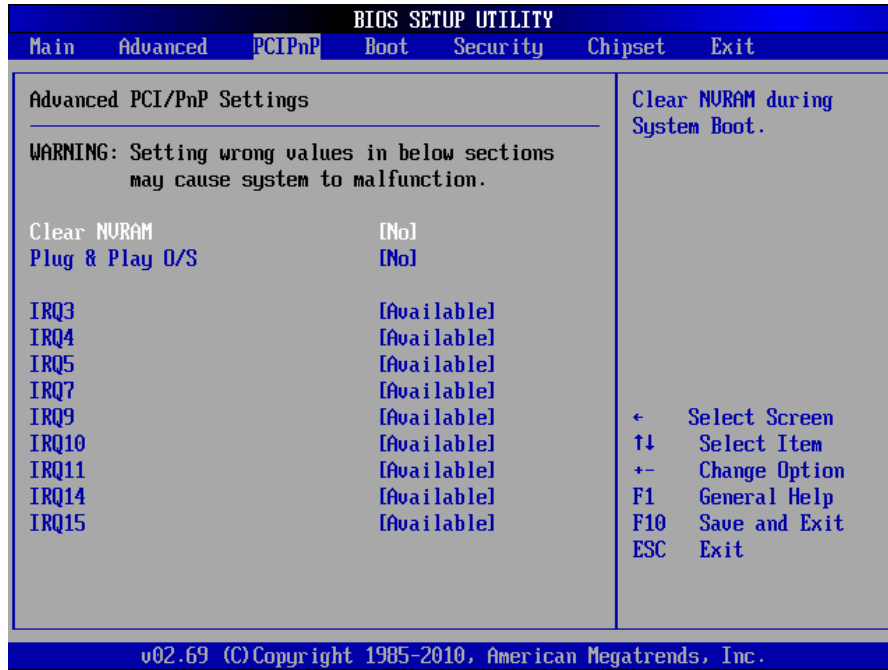
Recommend to select the default value. Serial ports cannot utilize the same address.

**Serial Port7/ Port8/ Port9/ Port10 IRQ**

Set serial port7/ 8/ 9/ 10 IRQ, setting options: 3, 4, 5, 6, 7, 10, 11.



### 3.3 PCI PnP



**Clear NVRAM**

[NO]: KEEP NVRAM

[YES]: Clear NVRAM

**Plug & Play O/S**

Select BIOS or PNP OS to allocate IRQ to system peripheral equipments.

[YES]: If your operating system supports PNP, then PNP OS will allocate the IRQ

[NO]: Your operating system is not the Plug & Play O/S, please select [NO].

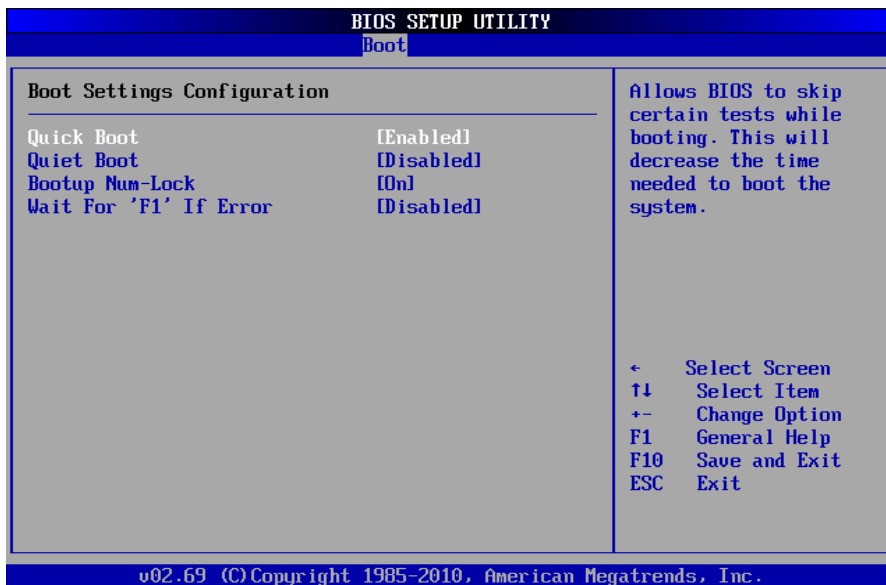
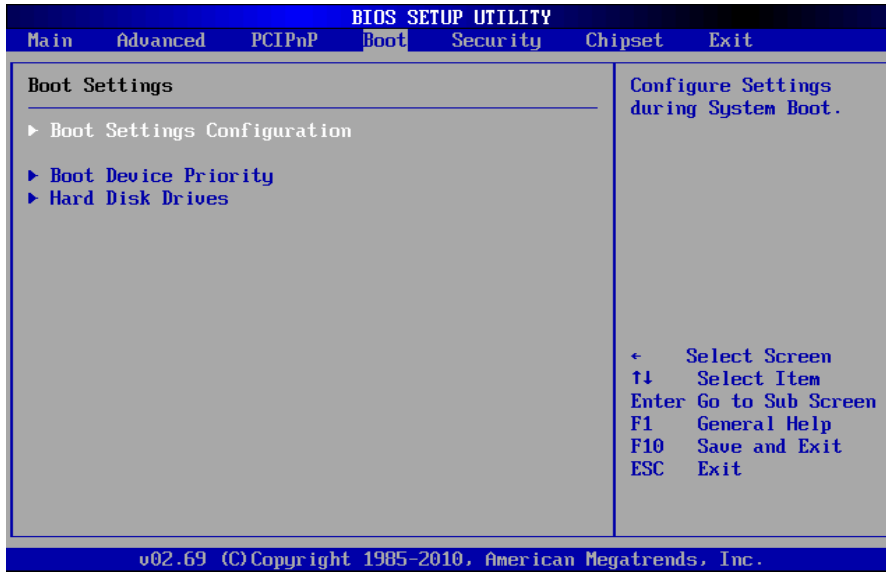
**IRQ3-15**

This option is to specify the IRQ is available or reserved.

[Available]: Assign IRQ to PCI/PNP devices

[Reserved]: Assign IRQ to ISA devices

3.4 Boot Menu



**Quick Boot**

Selecting <Enabled> allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

**Quiet Boot**

<Enabled>: to display the supplier's logo on the screen when system starts up. System defaults [Disabled].

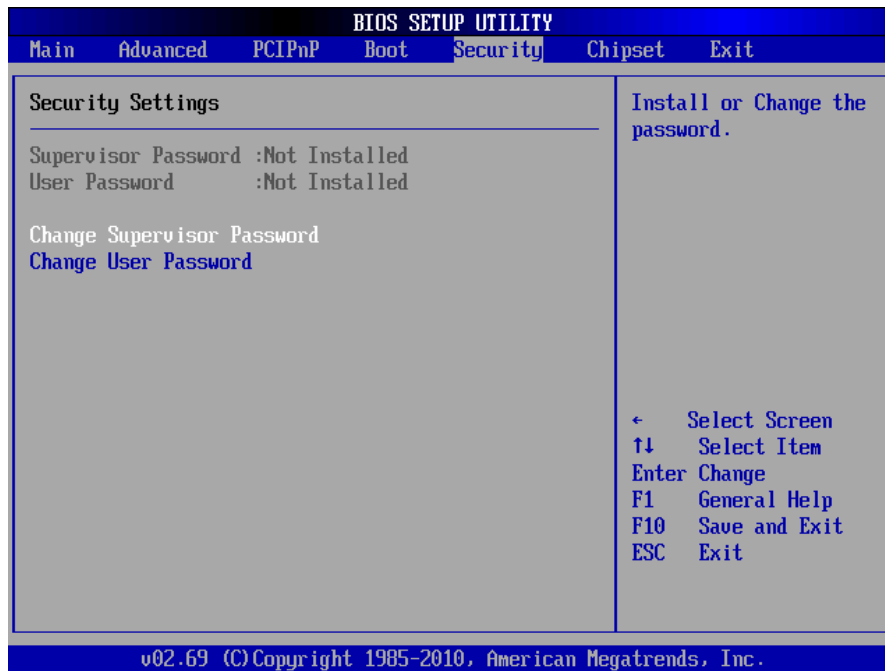
**Boot Up Num-Lock**

BIO allows activating the Num-lock after system powers on. Default value <ON> is to unlock the number key and <OFF> is to lock the number key and makes the key under the control of computer cursor.

**Wait For "F1" If Error**

If error occurs, wait for "F1". When the error doesn't lead to power down, then following messages will show: "Press 'F1' to resume" or "Press'F1' to Setup", users can press F1 to make the system go on working.

### 3.5 Security Menu



The password length: Min: 1 character, Maximum: 20 characters.

#### Administrator Password

Set administrator password.

#### User Password

Set user password.

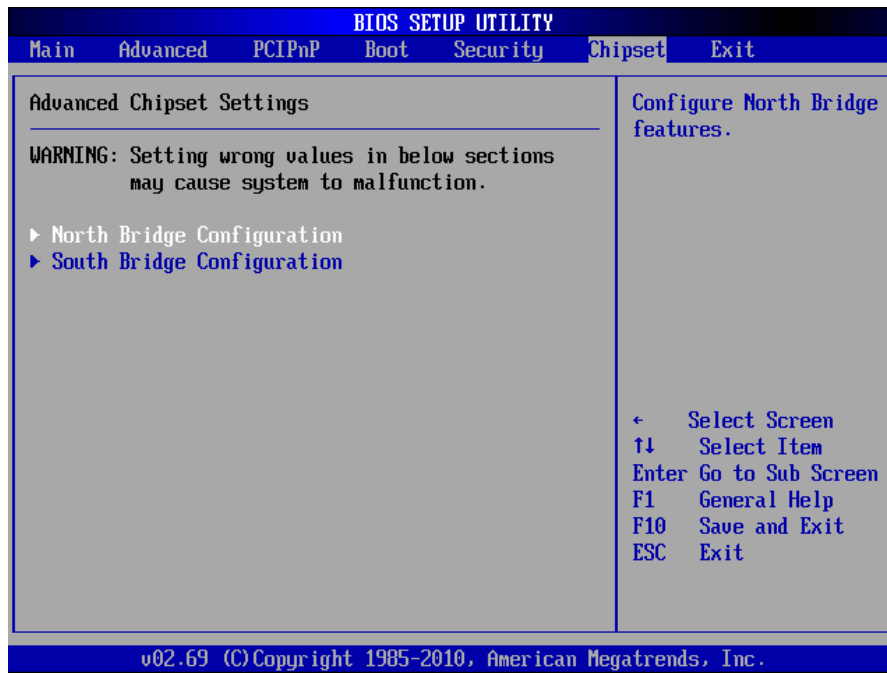
#### Change Supervisor Password

Press 'Enter' to select this option, then enter the sub-menu to change supervisor password.

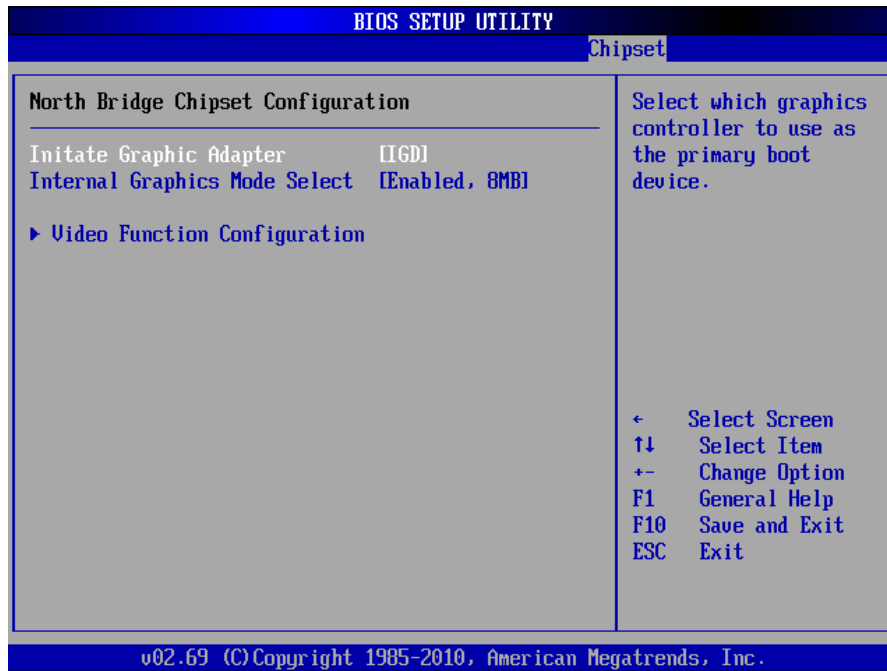
#### Change User Password

Press 'Enter' to select this option, then enter the sub-menu to change User Password.

### 3.6 Chipset Menu



### 3.6.1 North Bridge Configuration



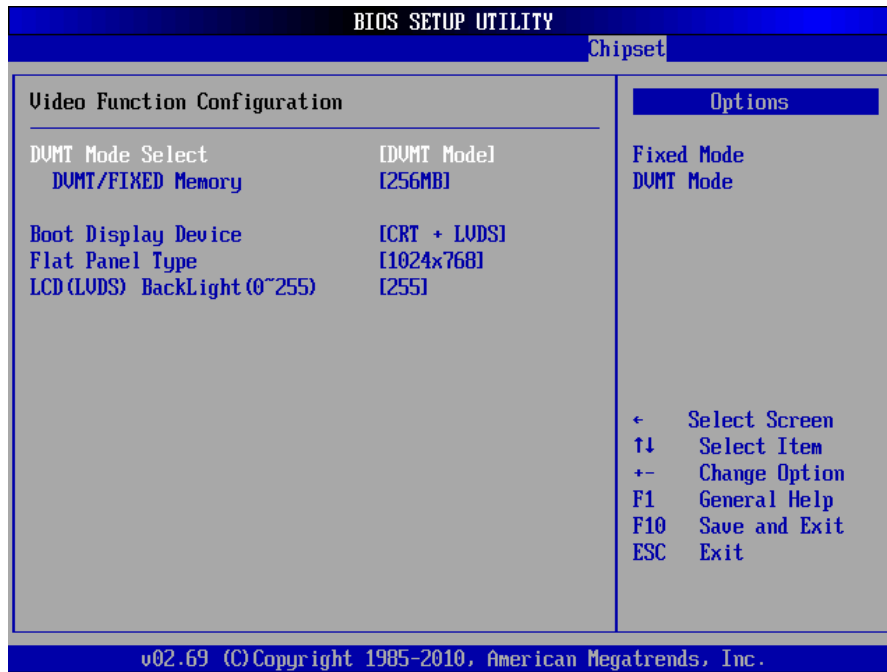
#### Initiate Graphic Adapter

Select which graphics controller to use as the primary boot device.

#### Internal Graphics Mode Select

Internal Graphics Mode Select. Share the video memory before driver installation. After installing drivers, video memory will be allocated by DVMT.

Move cursor to "Video Function Configuration" and press <Enter>, then following screen will pop out:



#### DVMT Mode Select

Integrated graphics shared memory mode select:

[DVMT]: Dynamic sharing video memory size. Drive allocates the shared memory size according to system memory capacity.

[FIXED]: Fixed sharing video memory size. Drive allocates the memory size according to BIOS settings.

#### DVMT/FIXED Memory

Shared video memory size

#### Boot Display Device

Set the connected display device when system boots.

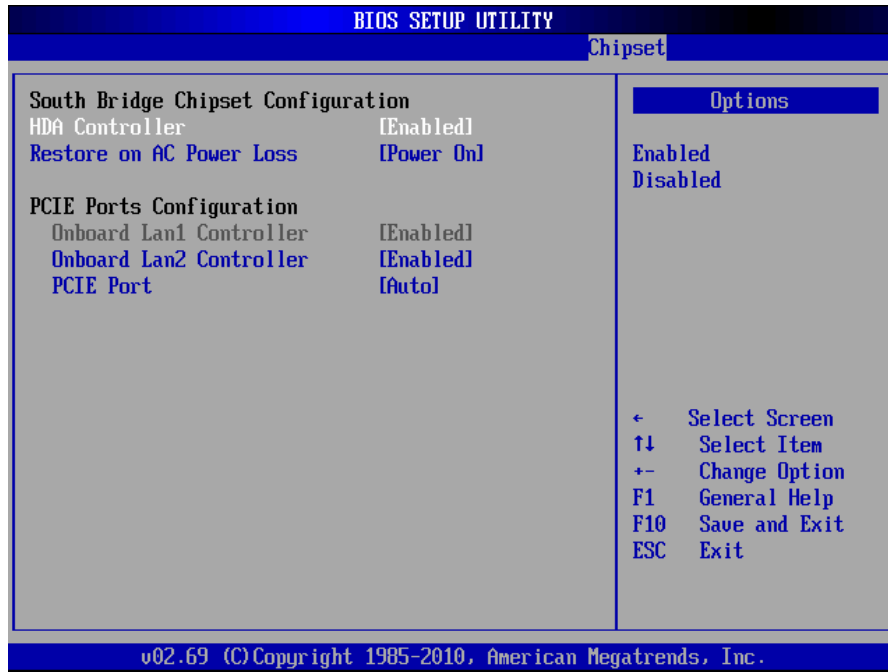
#### Flat Panel Type

Select flat panel type and set the resolution under LVDS display mode.

**LCD(LVDS) BackLight(0~255)**

Set LVDS display backlight (0-255).

**3.6.2 South Bridge Configuration**



**HDA Controller**

Enable or disable the HDA controller.

**Restore AC Power Loss**

Select the computer startup status after restore the AC power.

[Power Off]: Press the power button to restart the computer when restore the power supply

[Power On]: system startup directly when restores the power supply

[Last State]: Stay the last state before the AC power loss

**Onboard Lan1 Controller**

Enable or disable onboard LAN1 Controller. System default [Enabled].

**Onboard Lan2 Controller**

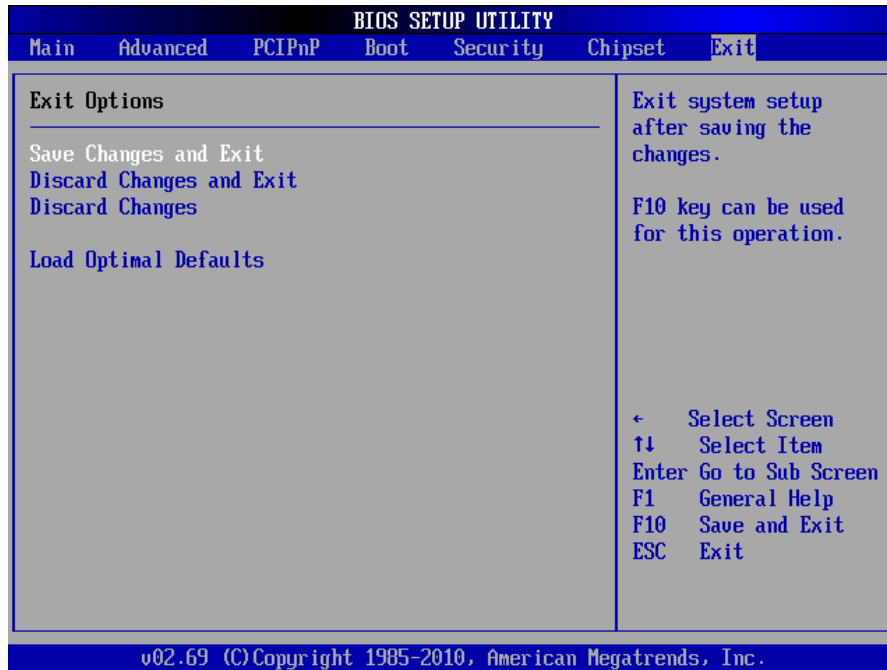


Enable or disable onboard LAN2 Controller. System default [Enabled].

### PCIE Port

PCIE Ports configuration.[Auto], [Enabled] and [Disabled] options are available. System default [Auto].

## 3.7 Exit Menu



### Save Changes and Exit

Press [Enter] to select this option and press [Enter] to confirm to save all BIOS changes and Exit.

### Discard Changes and Exit

Press [Enter] to select this option and press [Enter] to confirm to discard all changes and exit.

### Discard Changes

Press [Enter] under this option and press [Enter] to confirm to discard all changes and still stay

at the current BIOS setup interface.

**Load Optimal Defaults**

Load optimal defaults, which indicate system is running at its optimum efficiency. Users are recommended to first select this option when doing BIOS settings.



# Appendix

# Appendix

## Appendix 1: Install Driver

---

Please install the driver as per the following steps:

1. Insert the installation CD into CD-ROM, a dialog box "NORCO Drivers Installer" will pop out;
2. Find the motherboard Name and click to enter to driver installation interface;
3. Find the corresponding driver list and install the drivers one by one;
4. Complete the installation, restart the system.

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

Note: If system prompts the message "Reboot the Computer" in the process of installing drivers, we need to restart the computer as per system prompts.

## Appendix 2: Watchdog Programming Guide

---

### watchdog reference code

Set the port to realize different functions of watchdog. Write the port in C Language to realize different functions of watchdog.

Port Instructions:

```
void main()
{
int indexp = 0x2e,datap = 0x2f;
unsigned char temp;
Outportb(indexp,0x87);
Outportb(indexp,0x87); //unlock

Outportb(indexp,0x2d);
temp = (unsigned char) inportb (datap);
temp &= 0xfe;
Outportb(indexp,0x2d);
Outportb(datap,temp); //set pin for watchdog
Outportb(indexp,0x07);
Outportb(datap,0x08);
Outportb(indexp,0x30);
Outportb(datap,0x01); //enable logical device
Outportb(indexp,0xf5);
Outportb(datap,0x00); //set second
Outportb(indexp,0xf6);
Outportb(datap,0x05); //set 5seconds
Outportb(indexp,0xf7);
Outportb(datap,0x00);
Outportb(indexp,0xaa); //lock
}
```

If system fails, the watchdog enables system to reboot automatically.



敬请参阅

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

本手册所提供信息可不经事先通知进行变更

华北工控对所述信息保留解释权

