FCC Information and Copyright

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation.

The vendor makes no representations or warranties with respect to the contents here and specially disclaims any implied warranties of merchantability or fitness for any purpose. Further the vendor reserves the right to revise this publication and to make changes to the contents here without obligation to notify any party beforehand.

The content of this user's manual is subject to be changed without notice and we will not be responsible for any mistakes found in this user's manual. All the brand and product names are trademarks of their respective companies.

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 BEFORE YOU START

Thank you for choosing our product. Before you start installing the mainboard, please make sure you follow the instructions below:

- Prepare a dry and stable working environment with sufficient lighting.
- Always disconnect the system from power outlet before operation.
- Before you take the mainboard out from anti-static bag, ground yourself properly by touching any safely grounded appliance, or use grounded wrist strap to remove the static charge.
- Avoid touching the components on mainboard or the rear side of the board unless necessary. Hold the board on the edge, do not try to bend or flex the board.
- Do not leave any unfastened small parts inside the case after installation. Loose parts will cause short circuits which may damage the equipment.
- Keep the system from dangerous area, such as heat source, humid air, and water.

1.2 PACKAGE CHECKLIST

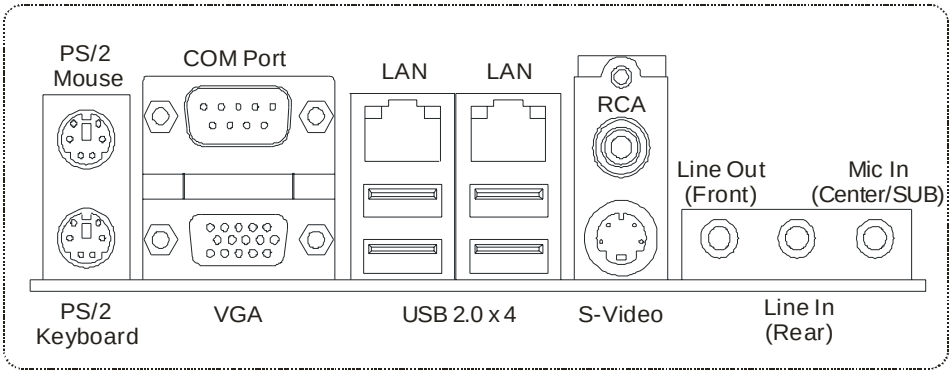
- Mini-ITX Mainboard X 1
- HDD Cable X 1
- User's Manual X 1
- Fully Setup Driver CD X 1
- I/O Bracket X 1
- SATA Cable X 1 (Optional)
- Quick Installation Guide X 1 (Optional)

1.3 MAINBOARD SPECIFICATIONS

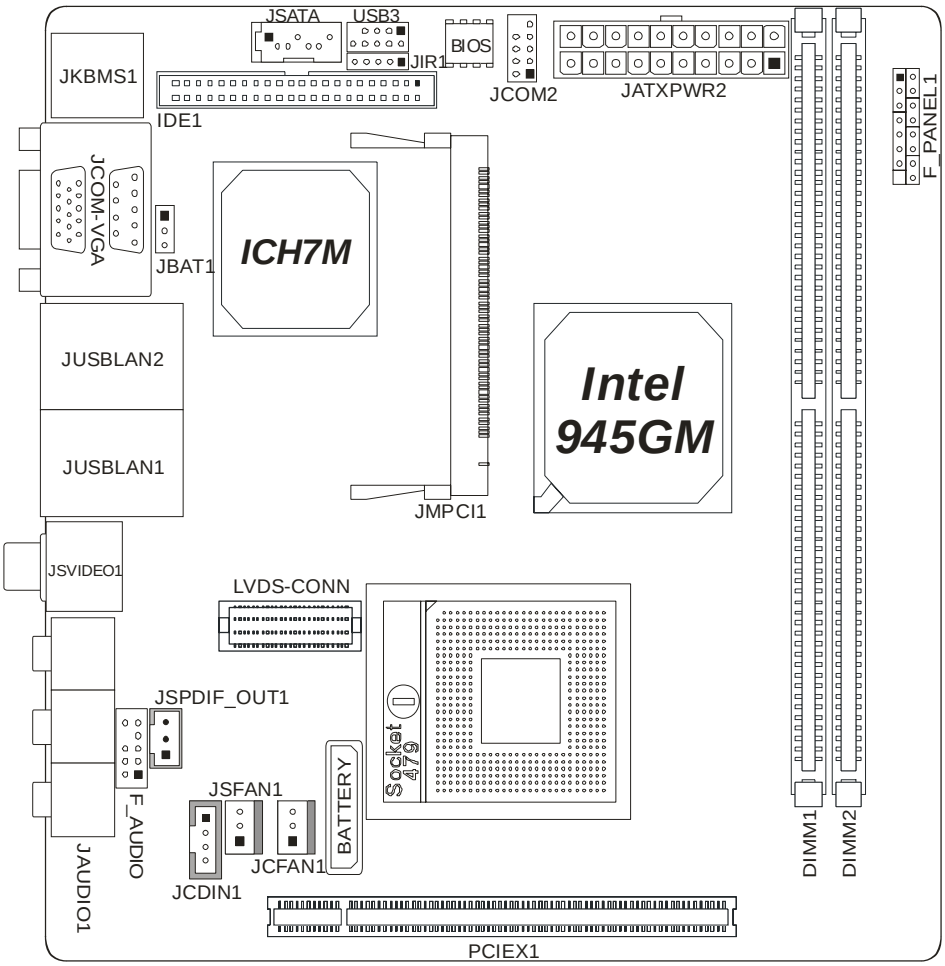
Specifications		
CPU	Mobile Socket 479 (Socket M) Supports Intel Core 2 Duo / Core Duo / Celeron M CPU	Supports Intel Centrino Duo Supports Wide Dynamic Execution / Smart Memory Access / 64-bit / Advanced Power Gating / Smart Cache / Dynamic Power Coordination / Enhanced Deeper Sleep with Dynamic Cache Sizing / Advanced Thermal Manager
FSB	667 MHz	
Chipset	Northbridge: Intel 945GM Southbridge: ICH7M	
Graphic	Intel GMA 950	Max Shared Video Memory is 192 MB
Super I/O	ITE IT8718 Provides the most commonly used legacy Super I/O functionality.	Low Pin Count Interface Environment Control initiatives, H/W Monitor Fan Speed Controller
Main Memory	DDR2 DIMM Slot x 2 Supports DDR2 667 / 533 Each DIMM supports 256/512MB/1GB DDR2 Max Memory Capicity 2GB	Dual Channel Mode DDR2 memory module Registered DIMM or ECC DIMM is not supported
IDE	ICH7M Ultra DMA 33/66 Bus Master Mode	Supports PIO Mode 0~4 Supports 2 IDE devices
SATA	ICH7M SATA Version 2.0 specification compliant.	Data transfer rates up to 3.0 Gb/s. Supports RAID 0 / 1 / 0+1
LAN PHY	RTL 8111B x2 or RTL 8101E x2	10 / 100 / 1000 Mb/s auto negotiation (for RTL 8111B) 10 / 100 Mb/s auto negotiation (for RTL 8101E) Half / Full duplex capability
Sound Codec	Realtek ALC662	5.1 channels audio out
Slots	PCI Express slot x1 Mini-PCI slot x1	
On Board Connector	IDE Connector x1 SATA2 Connector x1 Serial Header x1 Front Panel Connector x1	

Specifications			
	Front Audio Connector	x1	
	CD-in Connector	x1	
	S/PDIF out Connector	x1	
	CPU Fan header	x1	
	System Fan header	x1	
	Clear CMOS header	x1	
	USB 2.0 Connector	x1	
	LVDS Connector	x1	
	SIR Pin Header	x1	
	Power Connector (20pin)	x1	
Back Panel I/O	PS/2 Keyboard	x1	
	PS/2 Mouse	x1	
	Serial Port	x1	
	VGA Port	x1	
	LAN port	x2	
	USB Port	x4	
	RCA Port	x1	
	S-Video Port	x1	
	Audio Jack	x3	
Board Size	170 mm (W) x 170 mm (L)		Mini-ITX
OS Support	Windows XP / VISTA and Linux		Biostar Reserves the right to add or remove support for any OS with or without notice.

1.4 REAR PANEL



1.5 MAINBOARD LAYOUT



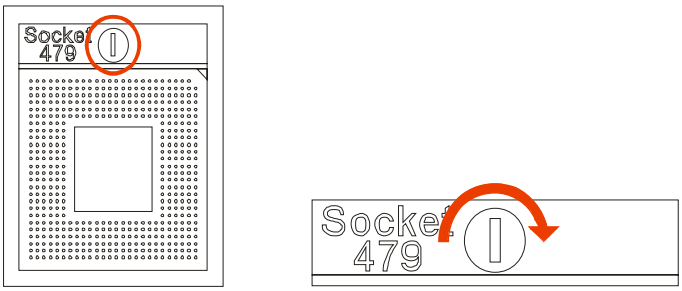
Note: ■ represents the 1st pin.

CHAPTER 2: INSTALLATION

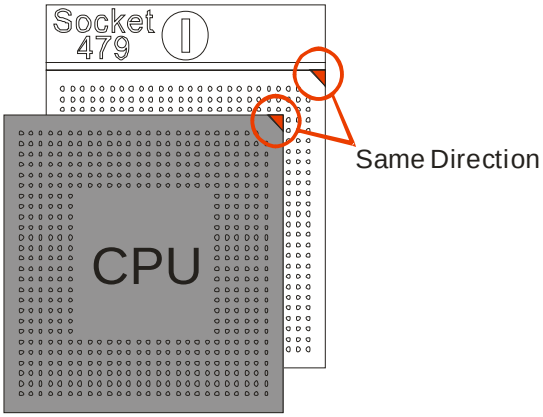
2.1 CPU

The mainboard comes with the socket 479 for Intel Core 2 Duo / Core Duo / Celeron M processors, it supports new generation of Intel Core 2 Duo processors with 667MHz of front side bus and 2MB L2 cache. Please follow the instruction to install the CPU properly.

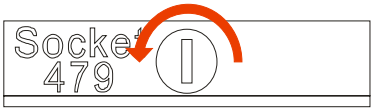
1. Use a flat-type screw driver to clockwise unlock the socket.



2. Follow the pin direction to install the CPU on the socket.



3. Use a flat-type screw driver to counter-clockwise lock the socket back again.

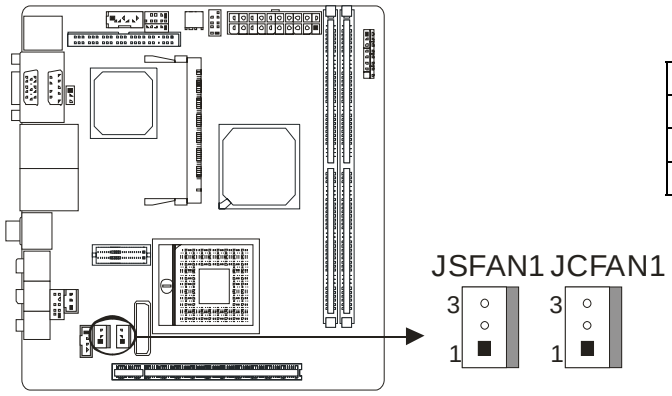


2.2 FAN HEADERS

These fan headers support cooling-fans built in the system. The fan cable and connector may be different according to the fan manufacturer. Connect the fan cable to the connector while matching the black wire to GND.

JCFAN1: CPU Fan Header

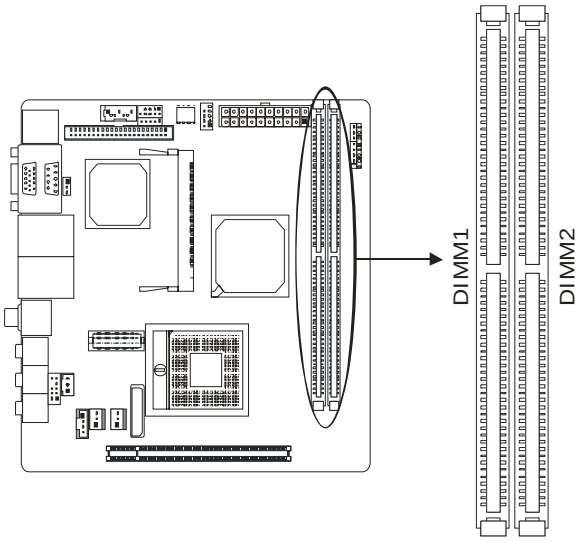
JSFAN1: System Fan Header



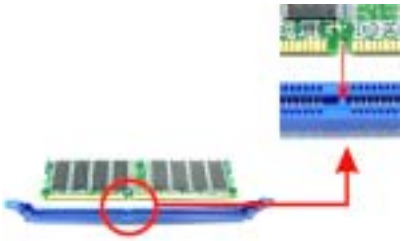
Pin	Assignment
1	FAN_MCM
2	Smart_Fan
3	GND

2.3 SYSTEM MEMORY

Memory Modules



1. Unlock a DIMM slot by pressing the retaining clips outward. Align a DIMM on the slot such that the notch on the DIMM matches the break on the Slot.



2. Insert the DIMM vertically and firmly into the slot until the retaining chip snap back in place and the DIMM is properly seated.

Memory Capacity

DIMM Socket Location	DDR2 Module	Total Memory Size
DIMM1	256MB/512MB/1GB	Max is 2GB.
DIMM2	256MB/512MB/1GB	

Dual Channel Memory Installation

To trigger the Dual Channel function of the motherboard, the memory module must meet the following requirements:

Install memory module of the same density in pairs, shown in the following table.

Single/Dual Channel Status	DIMM1	DIMM2
Single Channel	O	X
Single Channel	X	O
Dual Channel	O	O

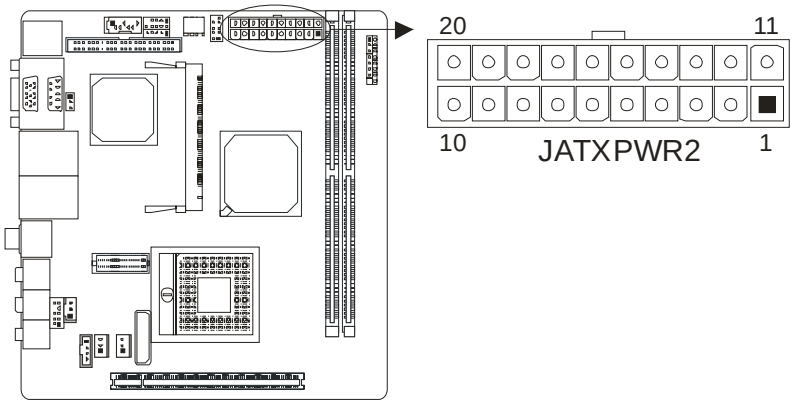
(O means memory installed, X means memory not installed.)

The DRAM bus width of the memory module must be the same (x8 or x16)

2.4 POWER SUPPLY

ATX Power Source Connector

JATXPWR2 allows user to connect 20-pin power connector on the power supply.



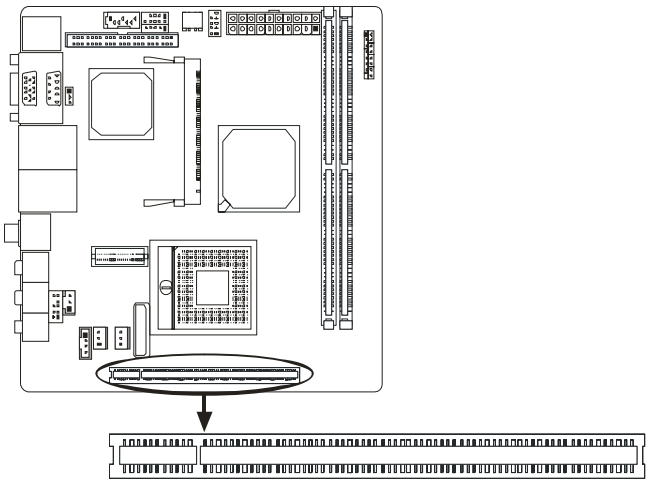
Pin	Assignment	Pin	Assignment
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	Power Supply On
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	Power Good	18	NC
9	+5V Standby	19	+5V
10	+12V	20	+5V

2.5 ONBOARD SLOT/CONNECTOR/HEADER/JUMPER

PCI-Express Slot

PCI-Express 1.0a compliant.

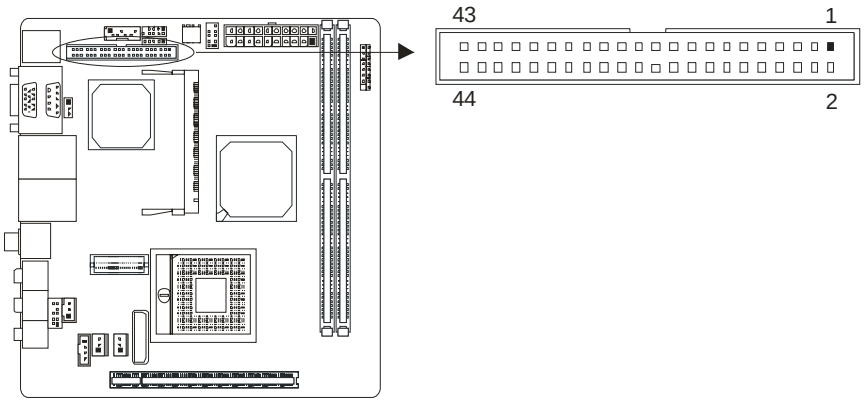
Maximum theoretical realized bandwidth of 4GB/s simultaneously per direction, for an aggregate of 8GB/s totally.



ATA Device Connector

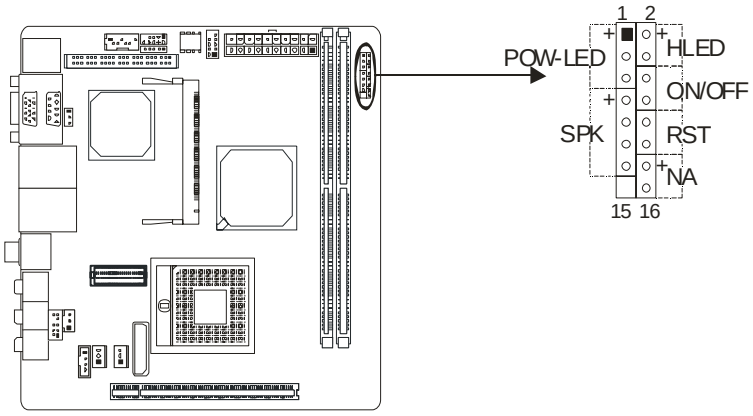
The mainboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA 33/66 functionality. It has one IDE connector.

The IDE connector can connect a master and a slave drive, so you can connect up to two ATA devices.



Front Panel Connector

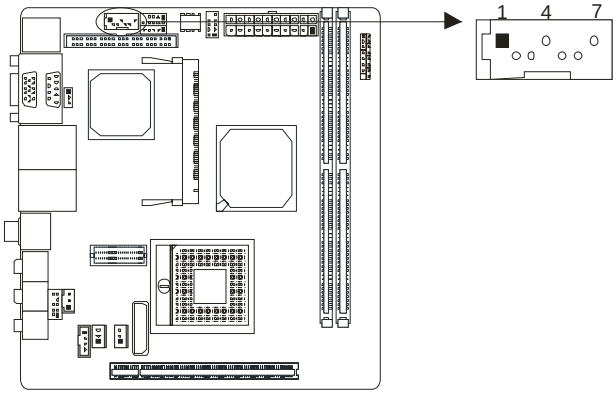
This 16-pin connector includes Power-on, Reset, HDD LED, Power LED, and speaker connection. It allows user to connect the system case's front panel switch functions.



Pin	Assignment	Function	Pin	Assignment	Function
1	+5VDUAL	Power LED	2	+5V	HDD LED
3	+5VDUAL		4	HD_LED	
5	-PLED		6	PW_BN	Power Switch
7	+5V	Speaker	8	GND	
9	NC		10	RST_SW	Reset Switch
11	NC		12	GND	
13	SPEAK		14	+5V	N/A
15	Key		16	NC	

Serial ATA Connector

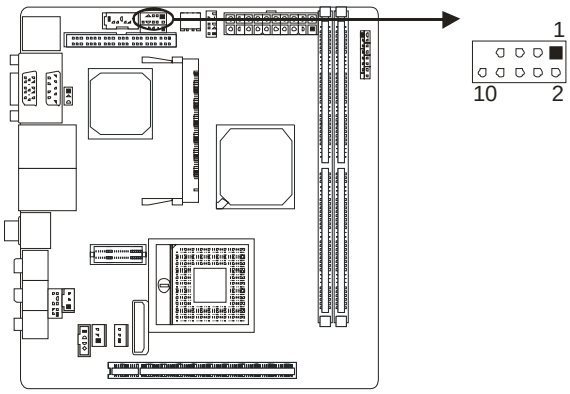
These next generation connector support the thin Serial ATA cable for primary internal storage devices. The current Serial ATA interface allows up to 300MB/s data transfer rate, faster than the standard parallel ATA with 133 MB/s (Ultra DMA).



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

USB 2.0 Connector

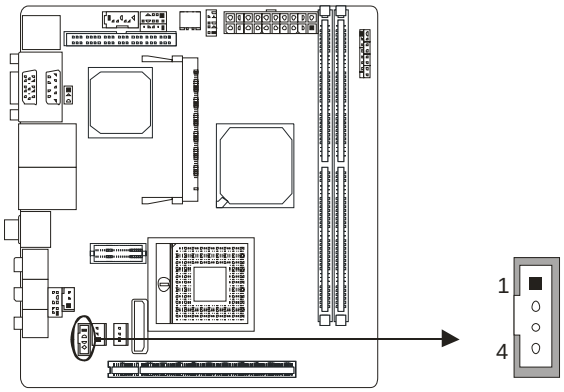
The mainboard provides a front USB pin header, allowing up to 2 additional USB2.0 ports up to maximum throughput of 480 Mbps. Connect the 2-port USB cable into this pin header. This port can be used to connect high-speed USB interface peripherals.



Pin	Assignment
1	+5V (fused)
2	+5V (fused)
3	USB-
4	USB-
5	USB+
6	USB+
7	Ground
8	Ground
9	Key
10	NC

CD-in Connector

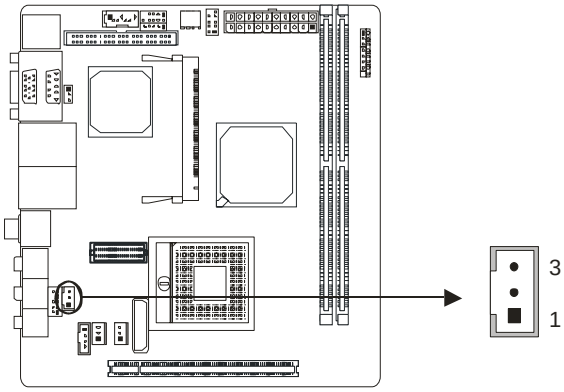
This pin header allows you to receive stereo audio input from sound source such as a CD-ROM.



Pin	Assignment
1	Left_Channel
2	GND
3	GND
4	Right_Channel

Digital Audio-out Connector

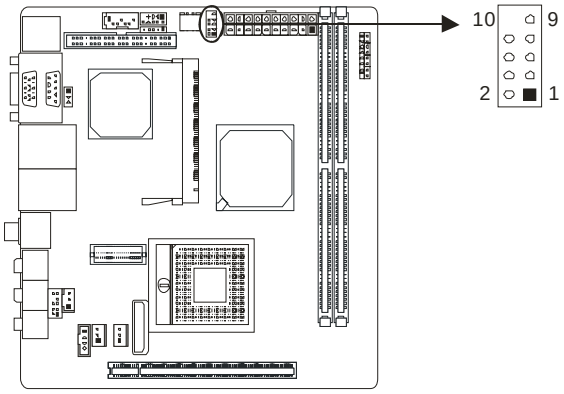
This connector allows user to connect the PCI bracket SPDIF output header.



Pin	Assignment
1	+5V
2	SPIDF_OUT
3	GND

Serial Port Connector

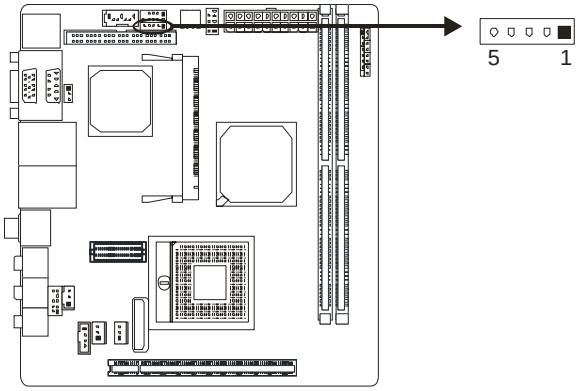
COM2 pin header can be used to attach additional port for serial mouse or another serial device.



Pin	Assignment
1	DCD
2	DSR
3	SIN
4	RTS
5	SOUT
6	CTS
7	DTR
8	RI
9	GND
10	Key

Fast IrDA Infrared Module Connector

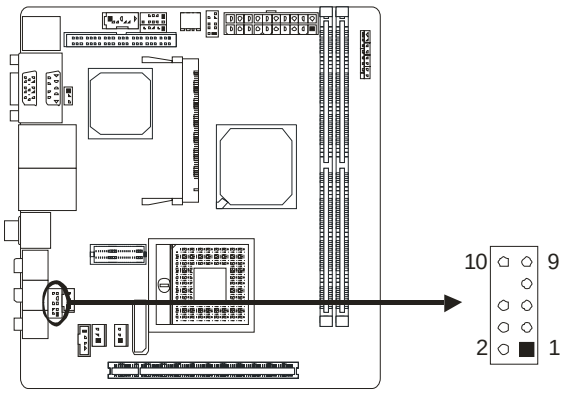
This connector is used to connect to an IrDA module. The BIOS settings must be configured to activate the IR function.



Pin	Assignment
1	+5V
2	CIRRX
3	IRRX
4	GND
5	IRTX

Front Panel Audio Connector

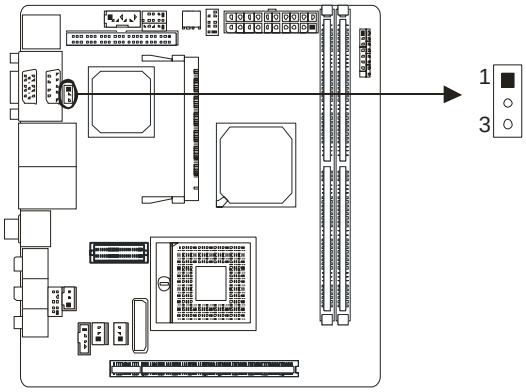
This is an interface for the front panel audio cable that allow convenient connection and control of audio devices. By default, the pins labeled LINE_OUT_R/NEXT_R and the pins LINE_OUT_L/NEXT_L are shorted with jumper caps. Remove the caps only when you are connecting the front panel audio cable.



Pin	Assignment
1	**Mic Left in**
2	**Ground**
3	**Mic Right in**
4	**GPIO**
5	**Right line in**
6	**Jack Sense**
7	**Front Sense**
8	**Key**
9	**Left line in**
10	**Jack Sense**

Clear CMOS Header *

By placing the jumper on pin2-3, it allows user to restore the BIOS safe setting and the CMOS data, please carefully follow the procedures to avoid damaging the mainboard.



Pin 1-2 Close:
Normal Operation(default).

Pin 2-3 Close:
Clear CMOS data.

※ Clear CMOS Procedures:

1. Remove AC power line.
2. Set the jumper to “Pin 2-3 close”.
3. Wait for five seconds.
4. Set the jumper to “Pin 1-2 close”.
5. Power on the AC.
6. Reset your desired password or clear the CMOS data.

*How to Setup Jumpers

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is “close”, if not, that means the jumper is “open”.

Pin opened

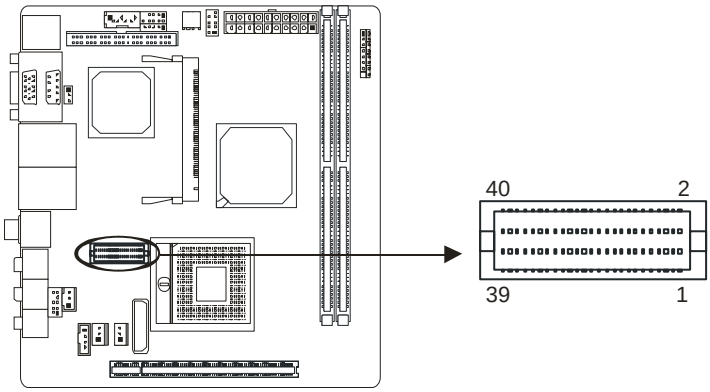
Pin closed

Pin1-2 closed

LVDS Connector

This connector is for devices requiring display interface such as LVDS.

This connector supports only 18-bit single-/dual-channel panels up to UXGA (1600 x 1200), 25 MHz to 112 MHz; at 18bpp (18-bit TFT panel type supported.)

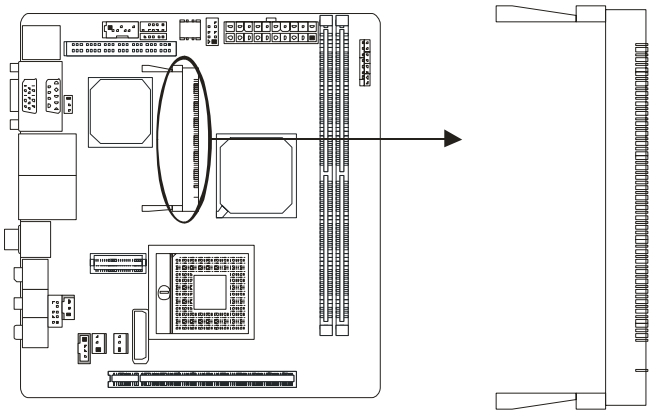


Mini PCI Slot

Mini-PCI socket for TYPE III B (32-bit, 33MHz), Power supply: +3.3V, +12V.

Mini PCI is a standard for a computer bus for attaching peripheral devices to a computer motherboard and is an adaptation of the Peripheral Component Interconnect (PCI) bus.

Many Mini PCI devices are available today: WiFi, modems, sound cards, cryptographic accelerators, SCSI, IDE/ATA and SATA controllers.



CHAPTER 3: BIOS SETUP

3.1 ENTERING SETUP

Power on the system and press <Delete> during the beginning of the boot sequence to enter the BIOS setup menu. If you missed the BIOS setup entry point, you may restart the system and try again.

3.2 USING SETUP

Use the arrow keys to highlight items in most of the place, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

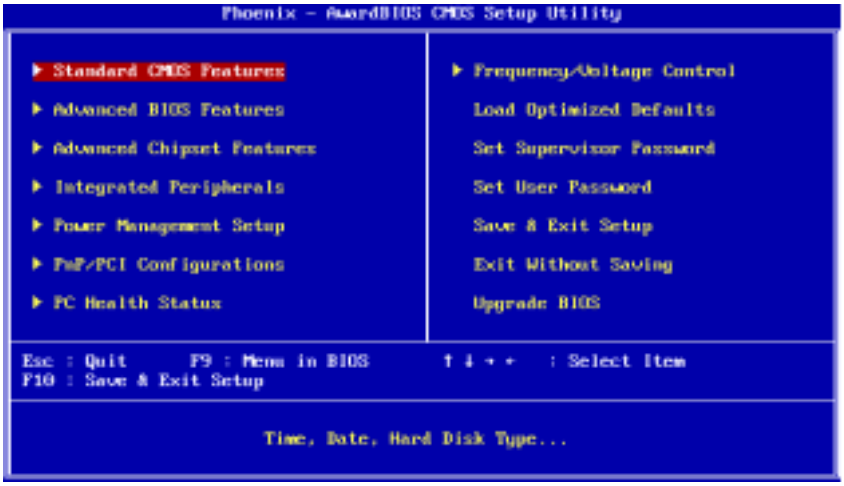
Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

!! WARNING !!

For better system performance, the BIOS firmware is being continuously updated. The BIOS information described in this manual is for your reference only. The actual BIOS information and settings on board may be slightly different from this manual.

3.3 MAIN MENU

Once you enter Phoenix-Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.



Standard CMOS Features

This submenu contains industry standard configurable options.

Advanced BIOS Features

This submenu allows you to configure advanced features of the BIOS.

Advanced Chipset Features

This submenu allows you to configure special chipset features.

Integrated Peripherals

This submenu allows you to configure certain IDE hard drive options and Programmed Input/ Output features.

Power Management Setup

This submenu allows you to configure the power management features.

PnP/PCI Configurations

This submenu allows you to configure certain “Plug and Play” and PCI options.

PC Health Status

This submenu allows you to monitor the hardware of your system.

Frequency/Voltage Control

This submenu allows you to change CPU Vcore Voltage and CPU/PCI clock.

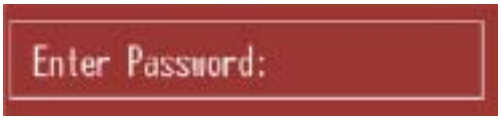
(However, we suggest you to use the default setting. Changing the voltage and clock improperly may damage the CPU or M/B!)

Load Optimized Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.

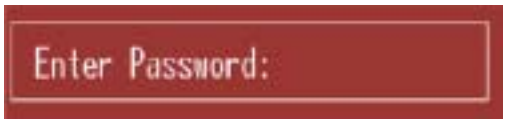
Set Supervisor Password

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.



Set User Password

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the “User” will only be able to view configurations but will not be able to change them.



Save & Exit Setup

Save all configuration changes to CMOS (memory) and exit setup. Confirmation message will be displayed before proceeding.

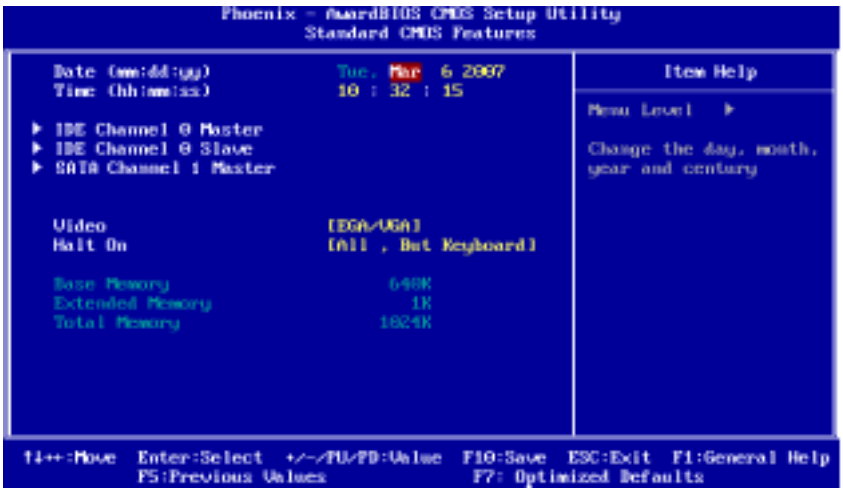
Exit Without Saving

Abandon all changes made during the current session and exit setup. Confirmation message will be displayed before proceeding.

Upgrade BIOS

This submenu allows you to upgrade bios.

3.4 STANDARD CMOS FEATURES



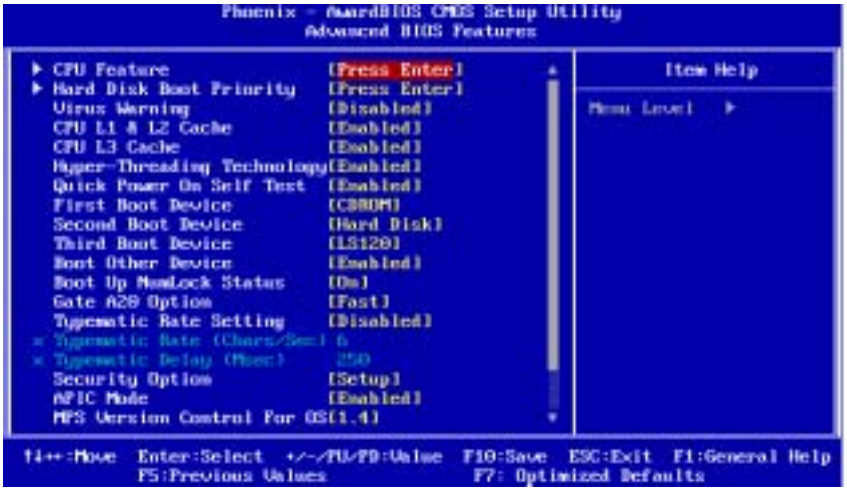
Selections

This table shows the items and the available options on the menu of Standard CMOS Features.

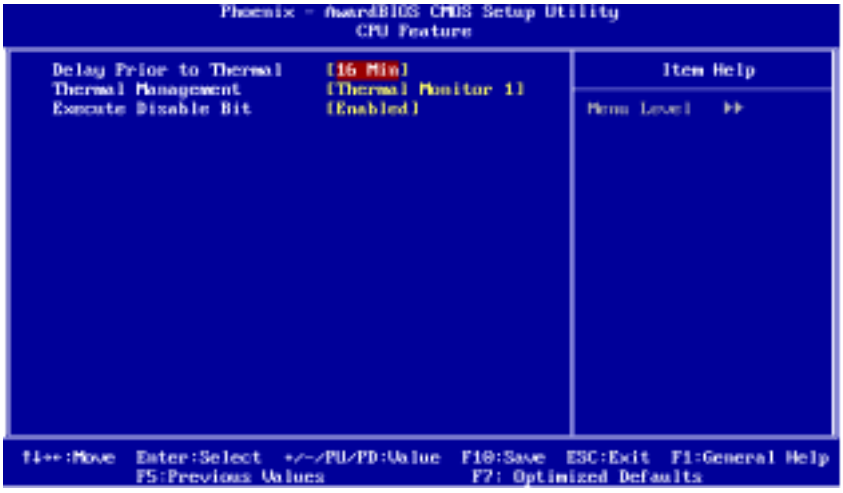
Item	Options	Description
Date	mm : dd : yy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	hh : mm : ss	Set the system internal clock.
IDE Channel 0 Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Channel 0 Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
SATA Channel 1 Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.

Item	Options	Description
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
Halt On	All Errors No Errors All, but Keyboard	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

3.5 ADVANCED BIOS FEATURES



CPU Features



Delay Prior to Thermal

This option controls the activation of the Thermal Monitor's automatic mode. It allows you to determine when the Thermal Monitor should be activated in automatic mode after the system boots.

The Choices: 4 Min / 8 Min / **16 Min (Default)** / 32 Min

Thermal Management

This option allows you to select the way to control the “Thermal Management.”

The Choices: Thermal Monitor 1(Default) / Thermal Monitor 2

Execute Disable Bit

When disabled, forces the XD feature flag to always return 0.

The Choices: Enabled (default) / Disabled

Hard Disk Boot Priority

This is for setting the priority of the hard disk boot order when the “Hard Disk” option is selected in the “[First/Second/Third] Boot Device” menu item.

The Choices: Pri. Master / Pri.Slave / Sec.Master / Sec.Slave / USBHDD0 / USBHDD1 / USBHDD2 / Bootable Add-in Cards

Virus Warning

This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.

The Choices: Enabled / **Disabled (Default)**

CPU L1 & L2 Cache

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

The Choices: Enabled (Default) / Disabled

CPU L3 Cache

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

The Choices: Enabled (Default) / Disabled

Hyper-Threading Technology

This option allows you to enable or disable CPU Hyper-Threading. “Enabled” for Windows XP and Linux 2.4.x (OS optimized for Hyper-Threading Technology.) and “Disabled” for other OS (OS not optimized for Hyper-Threading Technology.)

The Choices: Enabled (Default) / Disabled

Quick Power On Self Test

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.

The Choices:	Disabled	Normal POST.
	Enabled (Default)	Enable quick POST.

First / Second / Third Boot Device

The BIOS will attempt to load the operating system in this order.

The Choices: LS120 / Hard Disk / CDROM / ZIP100 / USB-FDD / USB-ZIP / USB-CDROM / Legacy LAN / Disabled

Boot Other Device

When enabled, BIOS will try to load the operating system from other device when it failed to load from the three devices above.

The Choices: Enabled (Default) / Disabled

Boot Up NumLock Status

Selects the NumLock State after the system switched on.

The Choices:

The Choices:	**On (Default)**	Numpad is number keys.
	Off	Numpad is arrow keys.

Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

The Choices:	**Fast (Default)**	Lets chipset control Gate A20.
	Normal	A pin in the keyboard controller controls GateA20

Typematic Rate Setting

When a key is held down, the keystroke will repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be configured.

The Choices: Disabled (Default) / Enabled

Typematic Rate (Chars/Sec)

Sets the rate at which a keystroke is repeated when you hold the key down.

The Choices: 6 (Default) / 8 / 10 / 12 / 15 / 20 / 24 / 30

(This option can be set only when “Typematic Rate Setting” is enabled.)

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The Choices: 250 (Default) / 500 / 750 / 1000

(This option can be set only when “Typematic Rate Setting” is enabled.)

Security Option

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.

The Coices:

System	A password is required for the system to boot and is also required to access the Setup Utility.
Setup (default)	A password is required to access the Setup Utility only.

This will only apply if passwords are set from the Setup main menu.

APIC Mode

Selecting Enabled enables APIC device mode reporting from the BIOS to the operating system.

The Choices: Enabled (default) / Disabled

MPS Version Control For OS

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification.

Select version supported by the operation system running on this computer.

The Choices: 1.4 (Default) / 1.1

OS Select For DRAM > 64MB

A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.

The Choices: Non-OS2 (Default) / OS2

Small Logo(EPA) Show

This item allows you to select whether the “Small Logo” shows. Enabled (default) “Small Logo” shows when system boots up. Disabled No “Small Logo” shows when system boots

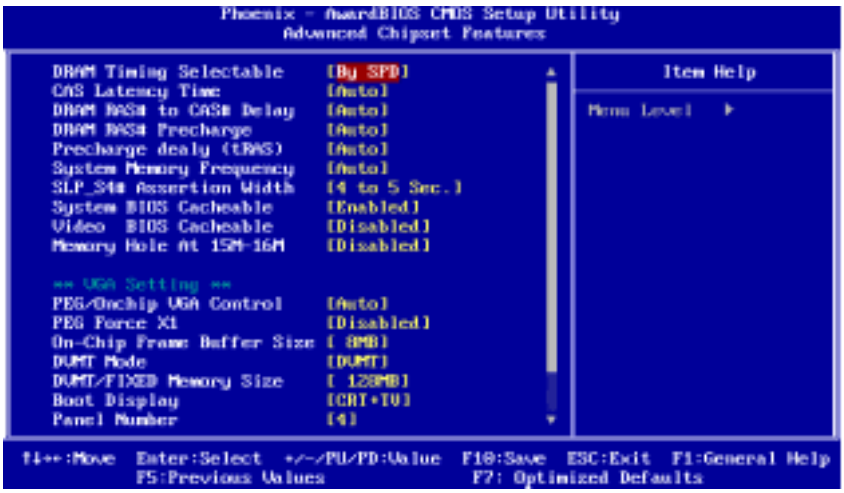
The Choices: Disabled (Default) / Enabled

Summary Screen Show

This item allows you to enable/disable the summary screen. Summary screen means system configuration and PCI device listing.

The Choices: Disabled (Default) / Enabled

3.6 ADVANCED CHIPSET FEATURES



DRAM Timing Selectable

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choices: By SPD (default) / Manual

CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choices: Auto (default) / 3 / 4 / 5 / 6

DRAM RAS# to CAS# Delay

This field let you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

The Choices: Auto (default) / 2 / 3 / 4 / 5 / 6

DRAM RAS# Precharge

If an insufficient number of cycles is allowed for RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

The Choices: Auto (default) / 2 / 3 / 4 / 5 / 6

Precharge Delay (TRAS)

This item controls the number of DRAM clocks to activate the precharge delay.

The Choices: Auto (default) / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 / 14 / 15

System Memory Frequency

This item allows you to select the Memory Frequency.

The Choices: Auto (default) / 400MHz / 533MHz / 667MHz

SLP S4# Assertion Width

This item sets the minimum assertion width of the SLP-S4# signal to guarantee the DRAM has been safely power-cycled.

The Choices: 4 to 5 Sec. (default) / 3 to 4 Sec. / 2 to 3 Sec. / 1 to 2 Sec.

System BIOS Cacheable

Selecting Enabled allows you caching of the system BIOS ROM at F0000h~FFFFFh, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

The Choices: Enabled (default) / Disabled

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

The Choices: Disabled (default) / Enabled

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved it cannot be cached. The user information of peripherals that need to use this area of system memory usually discussed their memory requirements.

The Choices: Disabled (default) / Enabled

VGA Setting

PEG/Onchip VGA Control

This item allows you to enabled or disabled PEG/On-chip VGA controller.

The Choices: Auto (default) / Onchip VGA / PEG Port

PEG Force X1

When using on-chip VGA, this item has to be set as X1.

The Choices: **Disabled(default)** PCI Express X16
Enabled PCI Express X1

On-Chip Frame Buffer Size

This item will be different as your memory modules. When the memory size is decided, this frame buffer size will also be fixed.

The Choices: 8MB (default) / 1MB

DVMT Mode

The Choices: DVMT (default) / FIXED / BOTH

DVMT/FIXED Memory Size

DVMT stands for “Dynamic Video Memory Technology“. This is an enhancemnet of the unified memory architecture (UMA) concept. Where the optimum amount of memory is allocated for balanced graphics and system performance. DVMT dynamically reponds to system requirements and applications demands, by allocating the proper amount of display, texturing and buffer memory after the operating system has booted.

The Choices:128MB (Default) / 64MB

Boot Display

The Choices: CRT+TV (default) / CRT / TV / EFP / LFP / Auto

Panel Number

This option allows you select the panel number

The Choices: 4 (Default) / 1-16 with an interval of 1

TV Standard

This option allows you select the standard of TV.

The Choices: Off (Default) / NTSC / PAL / SECAM

Video Connector

This option allows you select the type of TV connector.

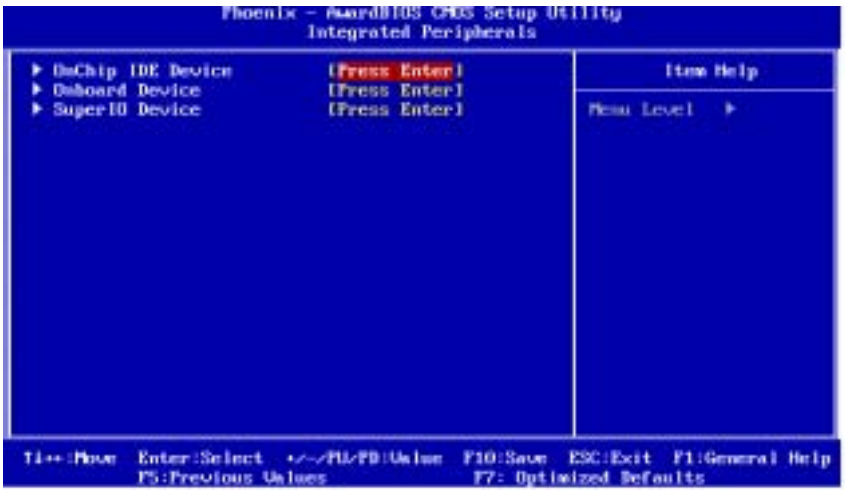
The Choices: Automatic (Default) / Composite / Component / Both

TV Format

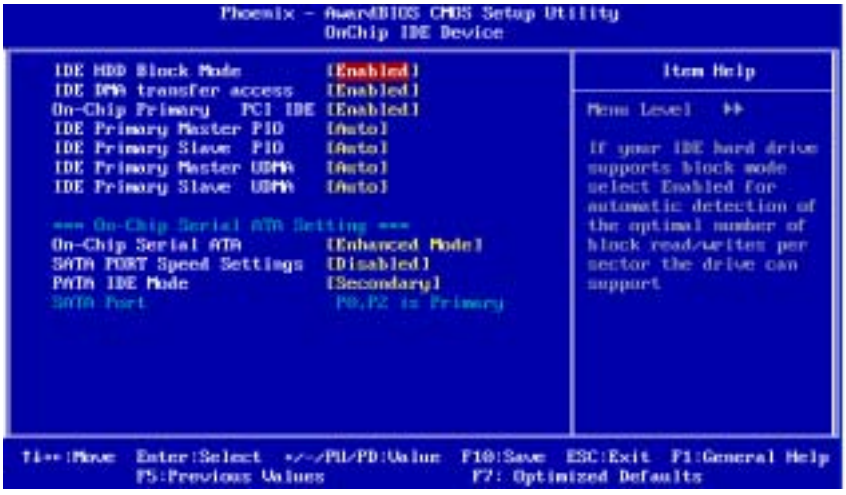
This option allows you select the type of TV format.

The Choices: Auto (Default) / NTSC_M / NTSC_M_J / NTSC_433 / NTSC_N / PAL_B / PAL_G / PAL_D / PAL_H / PAL_I / PAL_M / PAL_M / PAL_N / PAL_60 / SECAM_L / SECAM_L1 / SECAM_B / SECAM_D / SECAM_G / SECAM_H / SECAM_K / SECAM_K1

3.7 INTEGRATED PERIPHERALS



OnChip IDE Device



IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read / write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block mode(most new drives do), select Enabled for automatic detection of the optimal number of block read / write per sector where the drive can support.

The Choices: Enabled (default) / Disabled

IDE DMA Transfer Access

This item allows you to enable or disable the IDE transfer access.

The Choices: Enabled (default) / Disabled

On-chip Primary/Secondary PCI IDE

This item allows you to enable or disable the primary/ secondary IDE Channel.

The Choices: Enabled (default) / Disabled

IDE Primary Master/Slave PIO

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increase performance progressively. In Auto mode, the system automatically determines the best mode for each device.

The Choices: Auto (default) / Mode0 / Mode1 / Mode2 / Mode3 / Mode4

IDE Primary Master/Slave UDMA

Ultra DMA functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA, select Auto to enable BIOS support.

The Choices: Auto (default) / Disabled

On-Chip Serial ATA

This item allows you to choose:

Disabled: disabled SATA Controller

Combined Mode: PATA and SATA are combined max of 2 IDE drivers in each channel.

Enhanced Mode: enabled both SATA and PATA max of 6 IDE drivers are supported.

SATA Only: SATA is operating in legacy mode.

The Choices: Disabled / Auto / Combined Mode / **Enhanced Mode (default)** / SATA only.

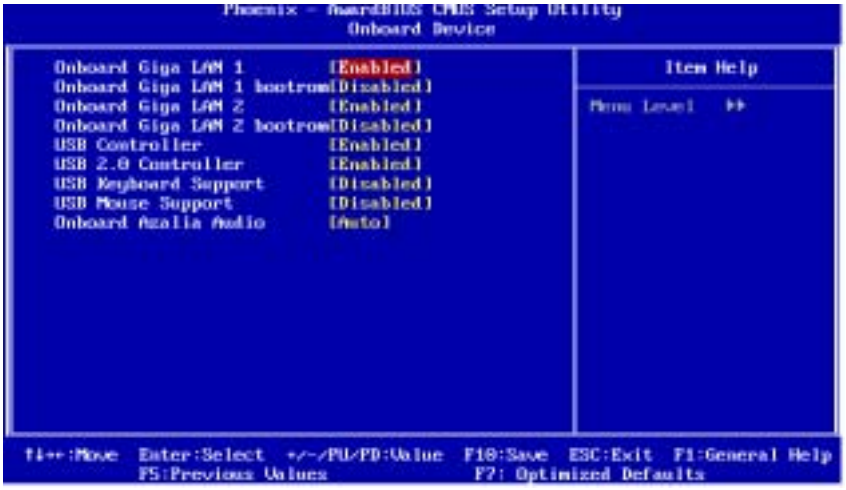
SATA PORT Speed Settings

The Choices: Disabled (default) / Force GEN I / Force GEN II

PATA IDE Mode

The Choices: Secondary (default)

Onboard Device



Onboard Giga Lan 1/2

This option allows you to control the onboard Lan.

The Choices: Enabled (Default) / Disabled

Onboard Giga Lan 1/2 bootrom

Decide whether to invoke the boot ROM of the onboard LAN chip.

The Choices: Disabled (Default) / Enabled

USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The Choices: Enabled (default) / Disabled

USB 2.0 Controller

This entry is to enable or disable EHCI controller only. This BIOS itself may/ may not have high speed USB support. If the BIOS has high speed USB support built in, the support will automatically turn on, when high speed device were attached.

The Choices: Enabled (default) / Disabled

USB Keyboard Support

This item allows you to enable or disable the USB Keyboard Legacy Support.

The Choices: Enabled Enable USB Keyboard Support.
Disabled (default) Disable USB Keyboard Support.

USB Mouse Support

This item allows you to enable or disable the USB Mouse Legacy Support.

The Choices: Enabled Enable USB mouse Support.
Disabled (default) Disable USB mouse Support.

Onboard Azalia Audio

This item allows you to decide to enable or disable to support HD Audio.

The Choices: Auto (default) / Disabled

SuperIO Device

POWER ON Function

This item allows you to choose the power on function.

The Choices: Any Key (default), Button Only / Password / Hot Key / Mouse Move/Click / Mouse Double Click / Keyboard 98

KB POWER ON Password

Input password and press Enter to set the Keyboard power on password.

Hot Key Power ON

Input password and press Enter to set the Keyboard power on password.

The Choices: Ctrl-F1 (default) / Ctrl-F2 / Ctrl-F3 / Ctrl-F4 / Ctrl-F5 / Ctrl-F6 / Ctrl-F7 / Ctrl-F8 / Ctrl-F9 / Ctrl-F10 / Ctrl-F11 / Ctrl-F12

Onboard Serial Port 1/2

Select an address and corresponding interrupt for the first and second serial ports.

The Choices: 3F8/IRQ4 / Disabled / 2F8/IRQ3 / 3E8/IRQ4 / 2E8/IRQ3 / Auto

UART Mode Select

This item allows you to choose between different Infra Red (IR) modes.

The Choices: Normal (default) / SCR / ASKIR / IrDA

UR2 Duplex Mode

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

The Choices: Half (default) / Full

PWRON After PWR-Fail

This setting specifies whether your system will reboot after a power fail or interrupts occurs.

Off	Leaves the computer in the power off state.
On	Reboots the computer.
Former-Sts	Restores the system to the status before power failure or interrupt occurs.

The Choices: Off (default) / On / Former-Sts.

CIR Port Address

This option allows you to set the CIR port address.

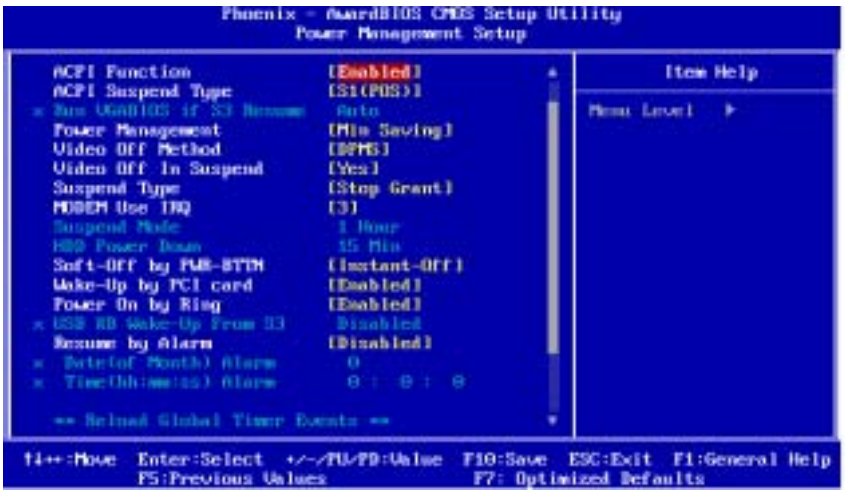
The Choices: Disabled (Default) / 220 / 228

CIR Port IRQ

This option allows you to set the CIR port IRQ.

The Choices: 11 (Default) / 5

3.8 POWER MANAGEMENT SETUP



ACPI Function

This item displays the status of the Advanced Configuration and Power Management (ACPI).

The Choices: Enabled (Default) / Disabled.

ACPI Suspend Type

The item allows you to select the suspend type under the ACPI operating system.

The Choices:

S1 (POS) (Default)	Power on Suspend
S3 (STR)	Suspend to RAM
S1&S3	POS+STR

Run VGABIOS if S3 Resume

Choosing Enabled will make BIOS run VGA BIOS to initialize the VGA card when system wakes up from S3 state. The system time is shortened if you disable the function, but system will need AGP driver to initialize the card. So, if the AGP driver of the VGA card does not support the initialization feature, the display may work abnormally or not function after S3.

The Choices: Auto (default) / Yes / No

Power Management

This category allows you to select the power saving method and is directly related to the following modes:

1. HDD Power Down.
2. Suspend Mode.

There are three options of Power Management, three of which have fixed mode settings.

The Choices:

Min Saving (Default)

Minimum power management.

Suspend Mode = 1 hr.

HDD Power Down = 15 Min

Max Saving

Maximum power management only available for sl CPU's.

Suspend Mode = 1 min.

HDD Power Down = Disable

User Define

Allow you to set each option individually.

When you choose user define, you can adjust each of the item from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min.

Video Off Method

This option determines the manner when the monitor goes blank.

The Choices:

V/H SYNC+Blank

This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen

This option only writes blanks to the video buffer.

DPMS (Default)

Initial display power management signaling.

Video Off In Suspend

This determines the manner in which the monitor is blanked.

The Choices: Yes (default) / No

Suspend Type

Select the Suspend Type.
The Choices: Stop Grant (default) / PwrOn Suspend

Modem Use IRQ

This determines the IRQ, which can be applied in MODEM use.
The Choices: 3 (Default) / 4 / 5 / 7 / 9 / 10 / 11 / NA

Suspend Mode

The item allows you to adjust the system idle time before suspend.
The Choices: Disabled / 1 Min / 2 Min / 4 Min / 6 Min / 8 Min / 10 Min / 20 Min / 30 Min / 40 Min / **1 Hour (Default)**

HDD Power Down

When enabled, the hard-disk drives will power down after a set time of system inactivity. All other devices remain active.
The Choices: 15 Min (Default) / 1 Min~15Min / Disabled

Soft-Off by PWRBTN

This item determines the behavior of system power button. Instant off turn off the power immediately, and Delay 4 Sec. will require you to press and hold the power button for 4 seconds to cut off the system power.
The Choices: Delay 4 Sec / **Instant-Off (Default)**

Wake-Up by PCI card

When you select “Enable”, a PME signal from PCI card returns the system to Full On state.
The Choices: Enabled (default) / Disabled

Power On by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.
The Choices: Enabled (default) / Disabled

USB KB Wake-Up From S3

This item allows you to enable or disable USB keyboard wake up from S3.
The Choices: Disabled (default) / Enabled

Resume by Alarm

When “Enabled”, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.
The Choices: Disabled (Default) / Enabled

Date (of Month) Alarm

You can choose which month the system will boot up. This field is only configurable when “RTC Resume” is set to “Enabled”.

Time (hh:mm:ss) Alarm

You can choose the hour, minute and second the system will boot up. This field is only configurable when “RTC Resume” is set to “Enabled”.

Note: If you have changed the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Global Timer Events

Primary/Secondary IDE 0/1

You can select to enable or disable Primary or Secondary IDE 0 or IDE 1 function under this item.
The Choices: Disabled (default) / Enabled

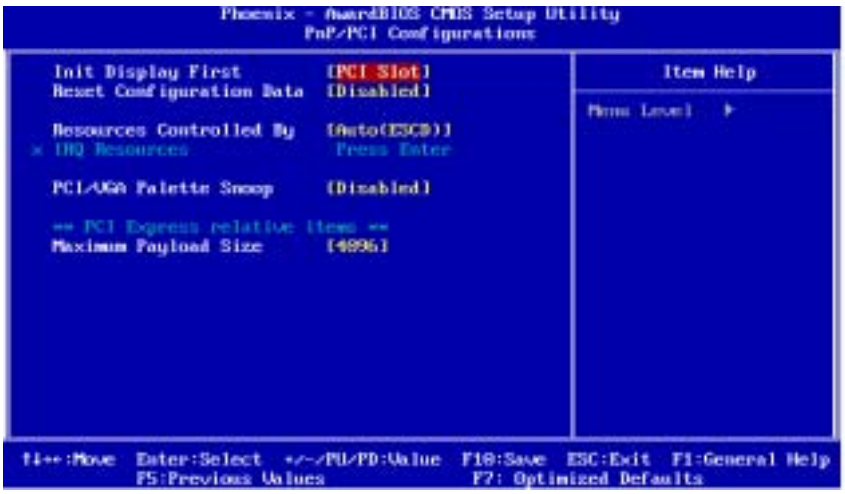
FDD, COM, LPT Port

You can select to enable or disable FDD, COM, and LPT port under this item.
The Choices: Disabled (default) / Enabled

PCI PIRQ [A-D]#

You can select to enable or disable PCI PIRQ [A-D]# under this item.
The Choices: Disabled (default) / Enabled

3.9 PNP/PCI CONFIGURATIONS



Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.

The Choices: PCI Slot (default) / PCIEx / Onboard

Reset Configuration Data

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict.

Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.

Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signify that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

The Choices: Disabled (Default) / Enabled

Resources Controlled By

By Choosing “Auto(ESCD)” (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing “Manual”, the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

The Choices: Auto (ESCD) (Default) / Manual

IRQ Resources

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the “Press Enter” tag, you will be directed to a submenu that will allow you to configure the system interrupts. This is only configurable when “Resources Controlled By” is set to “Manual”.

IRQ-3	assigned to	PCI Device
IRQ-4	assigned to	PCI Device
IRQ-5	assigned to	PCI Device
IRQ-7	assigned to	PCI Device
IRQ-9	assigned to	PCI Device
IRQ-10	assigned to	PCI Device
IRQ-11	assigned to	PCI Device
IRQ-12	assigned to	PCI Device
IRQ-14	assigned to	PCI Device
IRQ-15	assigned to	PCI Device

PCI / VGA Palette Snoop

Some old graphic controllers need to “snoop” on the VGA palette and then map it to their display as a way to provide boot information and VGA compatibility. This item allows such snooping to take place.

The Choices: Disabled (Default) / Enabled

Maximum Payload Size

Set the maximum payload size for Transaction packets (TLP).

The Choice: 4096 (default.) / 128 / 256 / 512 / 1024 / 2048

3.10 PC HEALTH STATUS

CPU FAN Control

Choose “smart” to reduce the noise caused by CPU FAN.
The Choices: Smart (default) / Always On.

CPU Fan Off<℃>

If the CPU Temperature is lower than the set value, FAN will turn off.
The Choices: Min=0; Max=127; Key in a DEC number.

CPU Fan Start<℃>

CPU fan starts to work under smart fan function when arrive this set value.
The Choices: Min=0; Max=127; Key in a DEC number.

CPU Fan Full speed <℃>

When CPU temperature is reach the set value, the CPU fan will work under Full Speed.

The Choices: Min=0; Max=127; Key in a DEC number.

Start PWM Value

When CPU temperature arrives to the set value, the CPU fan will work under Smart Fan Function mode. The range is from 0~127, with an interval of 1.

The Choices: Min=0; Max=127; Key in a DEC number.

Slope PWM

Increasing the value of slope PWM will raise the speed of CPU fan.

The Choices: 1 PWM Value/℃(default) / 2 PWM Value/℃ / 4 PWM Value/℃ / 8 PWM Value/℃ / 16 PWM Value/℃

Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature. This item is only effective under Windows 98 ACPI mode.

The Choices: Disabled (Default) / 60℃/140℉/ 65℃/149℉ / 70℃/158℉

Show H/W Monitor in POST

If you computer contains a monitoring system, it will show PC health status during POST stage. The item offers several different delay times.

The Choices: Enabled (default) / Disabled

CPU Vcore / GMCH Vore / +3.3V / +5.0V / ICH7M Core / 5V(SB) / Voltage Battery

Detect the system's voltage status automatically.

Current CPU Temp

This field displays the current temperature of CPU.

Current SYS Temp

This field displays the current temperature of the system.

Current CPU FAN Speed

This field displays the current speed of CPU fan.

Current SYS FAN Speed

This field displays the current speed SYSTEM fan.

3.11 FREQUENCY/VOLTAGE CONTROL

DDR Voltage Regulator

This item allows you to select DDR Voltage Regulator.
The Choices: 1.9v (Default) / 2.0v / 2.1v / 2.2v

CPU CLOCK

This item allows you to select CPU Clock, and CPU over clocking.
Min=100, Max=333, key in a DEC number.
The Choices: 100MHz (Default)

Special Notice:

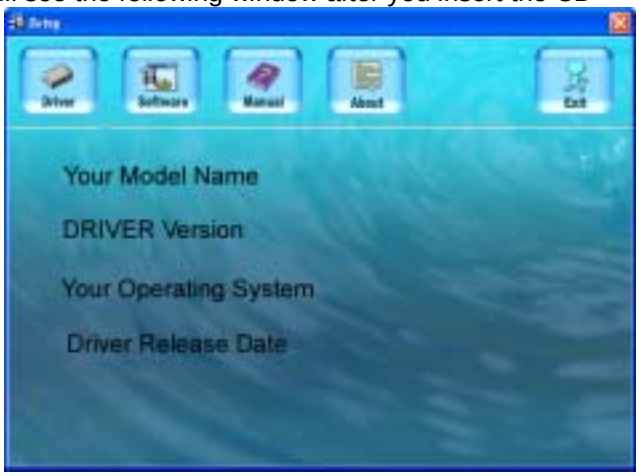
If the system's frequency that you selected is not functioning, you can clear the COMS data by setting the JCOMS1 ((2-3) closed)) as "ON" status. All the CMOS data will be loaded as defaults setting.

CHAPTER 4: USEFUL HELP

4.1 DRIVER INSTALLATION NOTE

After you installed your operating system, please insert the Fully Setup Driver CD into your optical drive and install the driver for better system performance.

You will see the following window after you insert the CD



The setup guide will auto detect your mainboard and operating system.

> ***Note:***
> If this window didn't show up after you insert the Driver CD, please use file browser to locate and execute the file ***SETUP.EXE*** under your optical drive.

A. Driver Installation

To install the driver, please click on the Driver icon. The setup guide will list the compatible driver for your mainboard and operating system. Click on each device driver to launch the installation program.

B. Software Installation

To install the software, please click on the Software icon. The setup guide will list the software available for your system, click on each software title to launch the installation program.

C. Manual

Aside from the paperback manual, we also provide manual in the Driver CD. Click on the Manual icon to browse for available manual.

> ***Note:***
> You will need Acrobat Reader to open the manual file. Please download the latest version of Acrobat Reader software from
> ***http://www.adobe.com/products/acrobat/readstep2.html***

4.2 PHOENIX-AWARD BIOS BEEP CODE

Beep Sound	Meaning
One long beep followed by two short beeps	Video card not found or video card memory bad
High-low siren sound	CPU overheated System will shut down automatically
One Short beep when system boot-up	No error found during POST
Long beeps every other second	No DRAM detected or install

4.3 EXTRA INFORMATION

A. BIOS Update

After you fail to update BIOS or BIOS is invaded by virus, the Boot-Block function will help to restore BIOS. If the following message is shown after boot-up the system, it means the BIOS contents are corrupted.

In this Case, please follow the procedure below to restore the BIOS:

1. Make a bootable floppy disk.
2. Download the Flash Utility “AWDFLASH.exe” from the Biostar website: www.biostar.com.tw
3. Confirm mainboard model and download the respectively BIOS from Biostar website.
4. Copy “AWDFLASH.exe” and respectively BIOS into floppy disk.
5. Insert the bootable disk into floppy drive and press Enter.
6. System will boot-up to DOS prompt.
7. Type *“Awdflash xxxx.bf/sn/py/r”* in DOS prompt.
   (*xxxx* means BIOS name.)
8. System will update BIOS automatically and restart.
9. The BIOS has been recovered and will work properly.

B. CPU Overheated

If the system shutdown automatically after power on system for seconds, that means the CPU protection function has been activated.

When the CPU is over heated, the mainboard will shutdown automatically to avoid a damage of the CPU, and the system may not power on again.

In this case, please double check:

1. The CPU cooler surface is placed evenly with the CPU surface.
2. The CPU fan is rotated normally.
3. The CPU fan speed is fulfilling with the CPU speed.

After confirmed, please follow steps below to relief the CPU protection function.

1. Remove the power cord from power supply for seconds.
2. Wait for seconds.
3. Plug in the power cord and boot up the system.

Or you can:

1. Clear the CMOS data.
   (See “Close CMOS Header: JCMOS1” section)
2. Wait for seconds.
3. Power on the system again.

4.4 TROUBLESHOOTING

Probable	Solution
1. No power to the system at all Power light don't illuminate, fan inside power supply does not turn on. 2. Indicator light on keyboard does not turn on.	1. Make sure power cable is securely plugged in. 2. Replace cable. 3. Contact technical support.
System inoperative. Keyboard lights are on, power indicator lights are lit, and hard drive is spinning.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.
System does not boot from hard disk drive, can be booted from optical drive.	1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup. 2. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.
System only boots from optical drive. Hard disk can be read and applications can be used but booting from hard disk is impossible.	1. Back up data and applications files. 2. Reformat the hard drive. Re-install applications and data using backup disks.
Screen message says "Invalid Configuration" or "CMOS Failure."	Review system's equipment. Make sure correct information is in setup.
Cannot boot system after installing second hard drive.	1. Set master/slave jumpers correctly. 2. Run SETUP program and select correct drive types. Call the drive manufacturers for compatibility with other drives.

2007/04/13