

KT-748

MAINBOARD MANUAL

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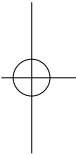
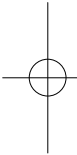


Notice

Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!



Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

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Handling Precautions

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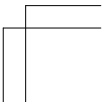
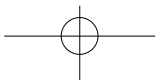
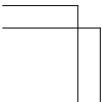


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Overview

The new mainboard is an ATX sized motherboard supporting the latest generation of AMD® processors at industry leading speeds. By utilizing DDR (Double Data Rate) transfer rate effectively reaches Front Side Bus speeds of 200/266/333/400 MHz. The board provides users with an ATA133 data transaction for hard drives and has 3 PC2100/PC2700/PC3200* DIMMs for up to 3 GB. (* Only two PC3200 SDRAMs at most are allowed on board.)

The board is based around the high performance SiS 748™ as North Bridge and SiS 963/L™ (as South Bridge. Its AGP 8X functions supported AGP 3.0 interface and the most robust 3D games with software environments. The AGP slot onboard supports 0.8/1.5 volt AGP card .

The board comes with a versatile range of I/O features such as 2 serial ports, 1 parallel port, 1 LAN, 2 optional IEEE 1394, 1 PS/2 mouse and keyboard connector, 6 USB ports, 1 media connector (front audio, Line-in, Line-out and Mic-in). In addition, the board is equipped with 5.1 audio channel enhanced PCI bus master IDE connectors. Ample expansion is available through 5 PCI* and 1AGP to meet the requirement for enjoying the CPU benefits in internet applications, video/3D graphics performance, and so forth. (* PCI1 to 4 are master; PCI5 slot is slave.)

Other key features are Remote On/Off, Auto Power Failure Recovery, integrated temperature monitoring and system fan control. Included also is 1st Utilities CD with enhanced drivers and a few bundled soft-ware solutions.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.



Mainboard



Floppy Drive Cable



80-Pin IDE Ribbon Cable



USB Cable



I/O Shielding



EZ Guide



Manual



Drivers



A73 Bracket with Cable (optional)



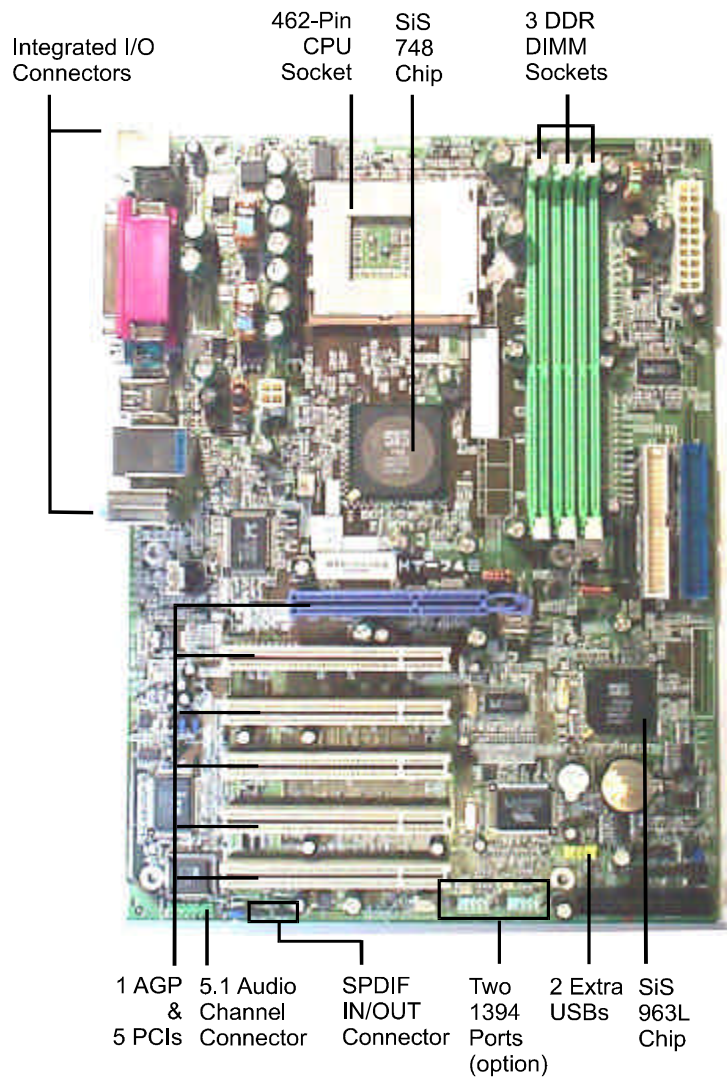
1394 Bracket with Cable (optional)



NOTE: **Ist Utilities** CD that contains patch files, onboard video/audio chip drivers, related online help and other useful information can be found in your mainboard package.

Please install it right after your Windows operating system installation is done. Place your Ist Utility in the drive, an operating menu will appear in your monitor. Please select *Auto Installation*. It will automatically detect which software tools (patch files, drivers) that the mainboard needs. Press **OK** button to go through the whole installation procedure in a very straight forward and easy way. It also provides you with a custom way to select wanted patch files and software drivers that for onboard chips use. **The top menu of Ist Utilities lists all the functions that allowed by this board.**

The KT-748 Mainboard



Chapter 1
Overview

Main Features



■ CPU

Duron: 900 - 1.3 GHz at FSB 200 MHz
Athlon : 900 - 1.4 GHz at FSB 200/266 MHz
Athlon XP:
 Polomino Core: 1500+ - 2100+ at FSB 266 MHz
 Thoroughbred Core: 1700+ - 2600+ at FSB 266 MHz
 Barton Core: 2500+ - 3000+ at FSB 333 MHz
(Those speed exceed above were not test yet when this book pressed.)

■ Chipset

North Bridge: *SiS® 748*
South Bridge: *SiS® 963L*

■ Memory

3 memory sockets :
support 184-pin PC2100/PC2700/PC3200 DDR SDRAM
memory size totally upto 3 GB

■ Expansion Slots

1 AGP Slot : Spec. 3.0 4X/8X; 5 PCI Slots

■ IDE Connections

2 IDE connectors - PIO mode, Ultra DMA 66/100/133
up to 4 devices

■ Audio Features

Realtek ALC655 controller; AC97 Link
LINE_IN, LINE_OUT, MICROPHONE_IN Jack
5.1 audio channel; front audio pinheaders

■ Mounting Holes

6 holes

■ Mainboard Size

12 x 9 (unit: inch)

■ I/O Ports

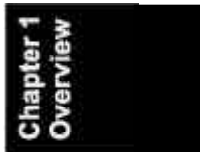
- 2 IDE connectors -
PIO, Bus Master, Ultra DMA 66/100/133
up to 4 devices
- 2 serial ports COM1 and COM2
- 1 parallel port
- PS/2 mouse and PS/2 keyboard
- 6 USB 2.0 ports

■ LAN

RTL8100C/8110S® 10/100/1000 Ethernet

■ IEEE 1394 Ports *(optional)*

VT6307L; 2 ports; 1 bracket with cable



FIC Unique Innovation for Users (NOVUS) - Enhanced Mainboard Features and System Support

■ LogoGenie

A user friendly GUI supporting Windows 95/98SE (not Windows 2000/NT/ME/XP), LogoGenie allows you to customize, create or select a Logo which will be displayed when the system is booting.

**NOTE:**

1. LogoGenie supports Award BIOS only.
2. If you create a Logo file (.bmp) by LogoGenie, the file size must be 640 x 464 x 256 colors.

To enable this utility, please proceed as follows:

1. Insert software CD. Select LogoGenie from the Menu and follow the installation instructions.
2. After LogoGenie has been installed, go to Windows Start Box. In Programs Menu, select LogoGenie, then select LogoGenie.
3. Press F1 to read Help file to understand how to use this software if it is new to you.

- BIOSGuardian

BIOS Guardian effectively acts as a fire-wall against viruses that can attack the BIOS while the system is running and by default is enabled.



WARNING:

BIOS Guardian must be disabled before reflash BIOS.



NOTE:

Please read Page 3-6 for detail information.

- Easy Key

Instead of completing the multi-layered BIOS setup process these 3 Easy Key functions provide direct access to Sub-Menu when completing BIOS settings adjustments.

Easy-Keys are as follows:

Ctrl + c: To enter clock settings menu.

Ctrl + p: To load Performance Default settings and restart.

Ctrl + f: To load Fail-Safe Default settings and restart.

Installation Procedures

The mainboard has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you must complete the following steps:

- Step 1 - **Set system jumpers**
- Step 2 - **Install memory modules**
- Step 3 - **Install the Central Processing Unit (CPU)**
- Step 4 - **Install expansion cards**
- Step 5 - **Connect ribbon cables, cabinet wires, and power supply**
- Step 6 - **Set up BIOS software**
- Step 7 - **Install supporting software tools**



WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the sensitive components, you should follow the following precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

1). Set System Jumpers



NOTE: Users are not encouraged to change the jumper/switch settings not listed in this manual. Changing the settings improperly may adversely affect system performance.

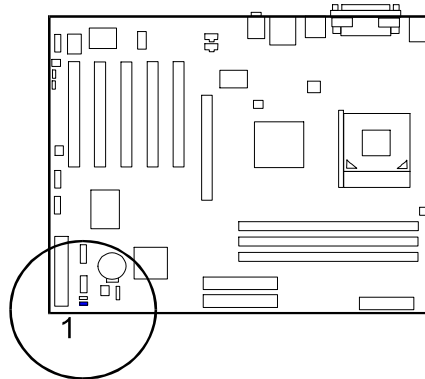
Clear CMOS

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data:

- (1) Turn off your computer;
- (2) open the system case, disconnect the ATX power cable;
- (3) place the jumper cap onto the pinpair 2-3 at least 6 seconds to enable CMOS clearance;
- (4) place the jumper cap onto the pinpair 1-2 to disable the effect of CMOS clearance;
- (5) connect the ATX power cable; close the system case;
- (6) turn on your computer until *CMOS checksum error* appears;
- (7) hold down the *Delete* key when boots;
- (8) enter the BIOS Setup to re-enter user preferences.

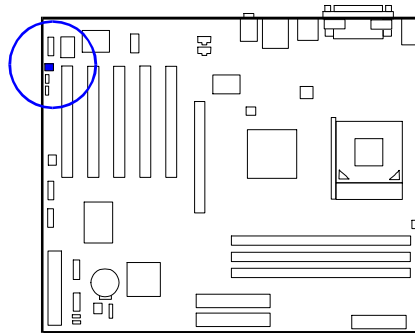
1 2 3 **Disable**
(Default)

1 2 3 **Enable**
(Clear CMOS)



BIOS Anti-Reflash Protect

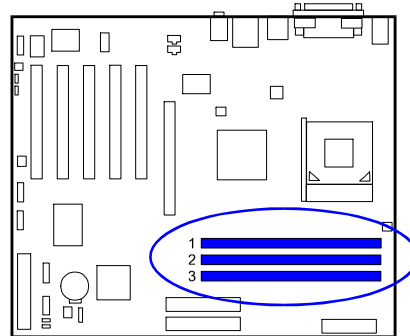
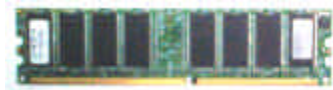
The jumper helps users to prevent the 64K boot block table area in the BIOS ROM from being overwritten by mistake.



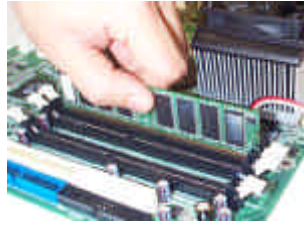
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2). Install Memory Modules

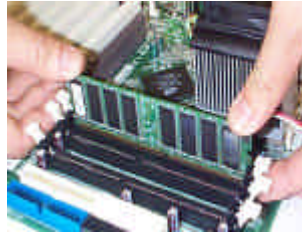
1. Locate DDR DIMM sockets on the mainboard.



2. Install DDR DIMM straight down into the socket 1 using both hands, then socket 2, and so forth.



3. The clip on both ends of the socket will close up to hold the DDR DIMM in place when the DDR DIMM reaches the socket bottom.



3). Install the CPU

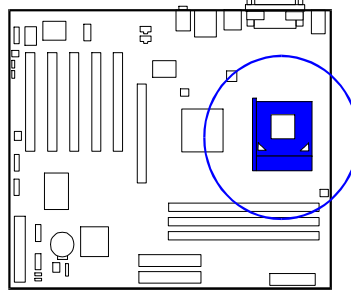
The mainboard has built-in Switching Voltage Regulator to support CPU Vcore autodetection. That is, It has the ability to detect and recognize the CPU voltage, clock, ratio and enables users to set up the CPU frequency from the BIOS Setup Screen. Users can adjust the frequency through *Frequency / Voltage Control* of the BIOS Setup Screen.



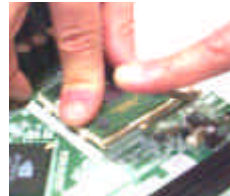
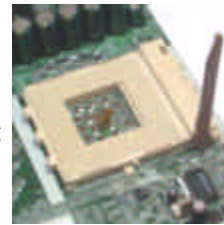
CAUTION:

1. The heat sink and fan you installed must be approved by AMD.
2. The mainboard must be placed on a solid place to avoid shaking while install the heat sink and fan on the board.
3. The heat sink must be contact with the CPU top tightly.
4. Never run the processor without the heat sink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

The procedures below shows you how to install your CPU and its fan and heatsink. First of all, locate the CPU socket on this mainboard.



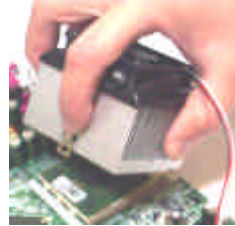
1. Swing the lever upward to 90 degree.
2. Install the CPU and make sure the the pin 1 orientation by aligning the socket corner marking with the socket corner closest to the lever tip. Do not insert the CPU by force. Make sure the processor is fully inserted into the socket on all sides.



Apply some thermal materials, such as paste or tape, on the CPU top; and install a fan with heatsink that approved by CPU manufacturer to avoid CPU damage. For detail information, please refer to the CPU manufacturer website.

Affix the CPU by pressing the lever downward and locking it beside the socket.

3. Place the fan with heatsink on the CPU top and press down two plastic clips to hook up with the holes on the retention module on two sides.



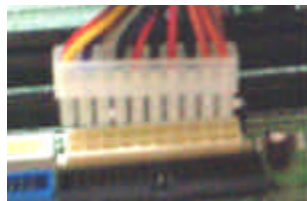
4. Press down the white bar on each clip to fasten the fan set on the retention module.

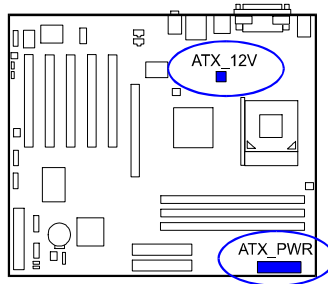


Connect ATX Power

The 20-hole power plug (top right) is connected to the ATX power 20-pin pinheaders. The 4-hole 12V power plug (bottom right) is inserted in the ATX_12V power connector.

The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.





NOTE:

1. Insert the CPU (with fansink and retention module) on socket.
 2. Connect the 4-pin plug of the power supply
 3. Connect the 20-pin plug of the power supply.
- To remove the processor, please do it in reverse order.

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system expansion slots.

Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system.

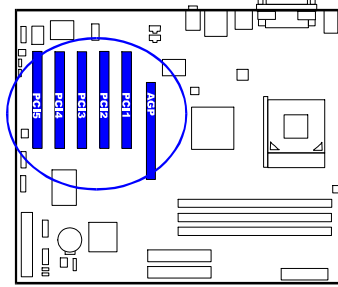
For example, expansion cards can provide video and sound capabilities. The mainboard features one AGP and five PCI bus expansion slots.



CAUTION:

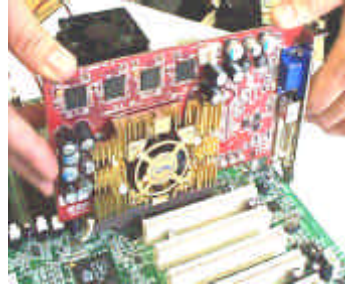
1. Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.
2. Always observe static electricity precautions.
3. Please read Handling Precautions at the start of this manual.

1. Select an available expansion slot.



2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

3. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this rocking motion until the card is firmly seated inside the expansion slot. Secure the card with the screw removed in Step 2.

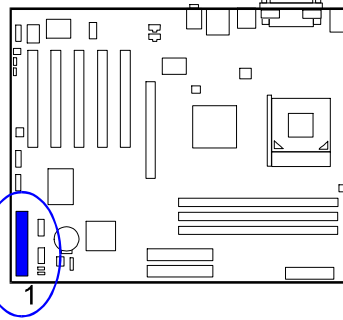


5). Connect Devices

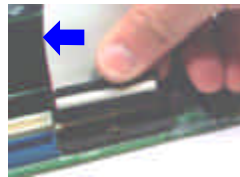
Floppy Diskette Drive Connector

This connector provides the connection with your floppy disk drive.

Insert the floppy ribbon cable (below) onto the floppy connector.



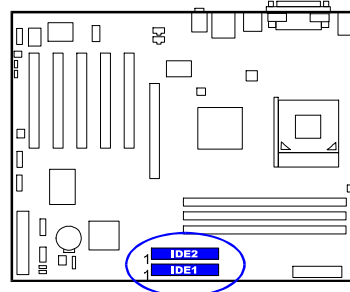
The colored stripe (indicated by the arrow head, right) of the ribbon cable must be the same side with the Pin 1.



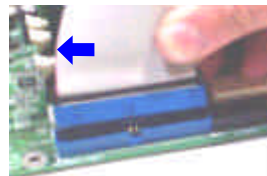
IDE Device Connectors

The two connectors, PRIMARY and SECONDARY, are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives.

Insert the floppy ribbon cable (below) onto the floppy connector.



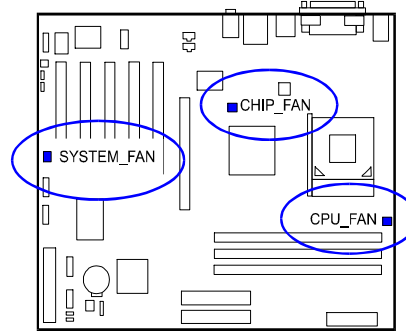
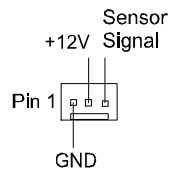
The colored stripe (indicated by the arrow head, right) of the ribbon cable must be the same side with the Pin 1.



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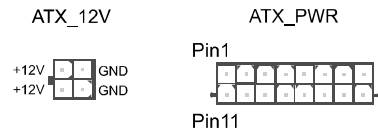
Fan Connectors

The two connectors, CPU_FAN, SYSTEM_FAN are linked to the CPU fan, case fan, respectively. CHIP_FAN can be used with North Bridge chip fan.

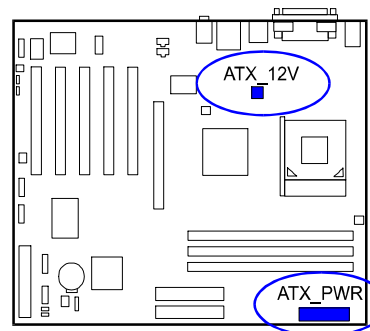


Power Connectors

The 20-pin male block connector is connected to the ATX power supply. The 4-pin male block connector is for the ATX_12V power use. All two connectors are linked with your ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

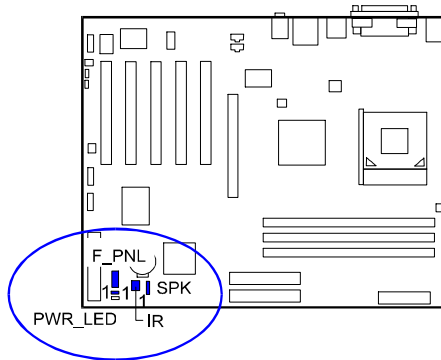


PIN	DEFINITION	PIN	DEFINITION
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWR_GOOD	18	-5V
9	5V_SB	19	+5V
10	+12V	20	+5V

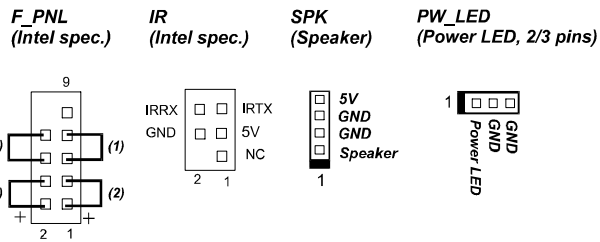


Front Panel Block Connector

This block connector includes the connectors for linking with Power LED (3-pin), HDD LED, power button, power/sleep/message waiting button, reset button on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires polarities of these buttons will not affect the function.



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NOTE: Users that want to use IR port must adjust BIOS feature **UART Mode Select** to set COM2 at some IR mode upon your IR device.

- (1) **Reset Switch** is connected to the reset button. Push this switch to reboot the system instead of turning the power button off and on.
- (2) **HDD LED** is connected to the IDE device indicator. This LED will blink when the hard disk drives are activated.
- (3) **Power (Single and Dual) /Sleep LED**
Please refer to the tables below for the representations of LED states. There is another 3-Pin Power LED connector on board for some cases that with a 3-pin plug.

Single-Color (2, 3 Pins)

LED	Meaning	State
Off	Off	S4/S5
On	Full On	S0
Flash	Sleep	S1/S3

Dual-Color

LED	Meaning	State
Off	Off	S4/S5
Green	Full On	S0
Other Colors	Sleep	S1/S3

(4) Power Button is connected with power button. Push this switch allows the system to be turned on and off rather than using the power supply button.

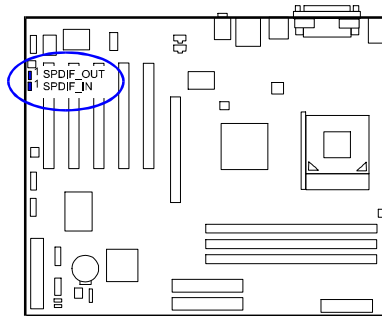


IR is a pinheader that is used for linking with your ID device to allow transmission of data to another system that also supports the IR feature.

Speaker is connected with the case speaker.

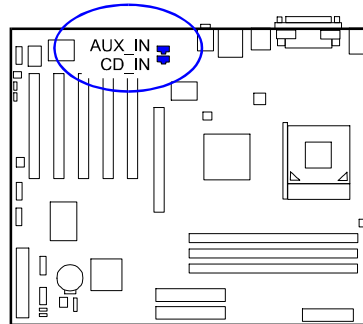
SPDIF_IN/SPDIF_OUT Connector

It is used for audio input and output that with SPDIF spec.
Pin definitions: Pin1 is 5V, Pin2 is SPDIF signal, P3 is GND.



CD Audio-In Connectors

The two 1x4 connectors, CD_IN and AUX_IN, are for CD-ROM drive audio analog input use. The pin assignment are: Pin 1 is Left, Pin2 and 3 are GND, Pin 4 is Right.



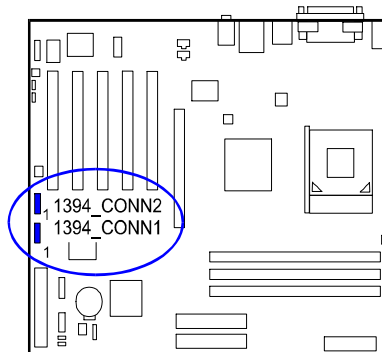
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1394 Connectors (optional)

The 2 optional 1394 pinheaders on the board provides you with two connections with the peripherals which own 1394 connectors by an optional bracket with cable (see the figure below). The pin definitions of the 1394 pinheaders are listed below also.

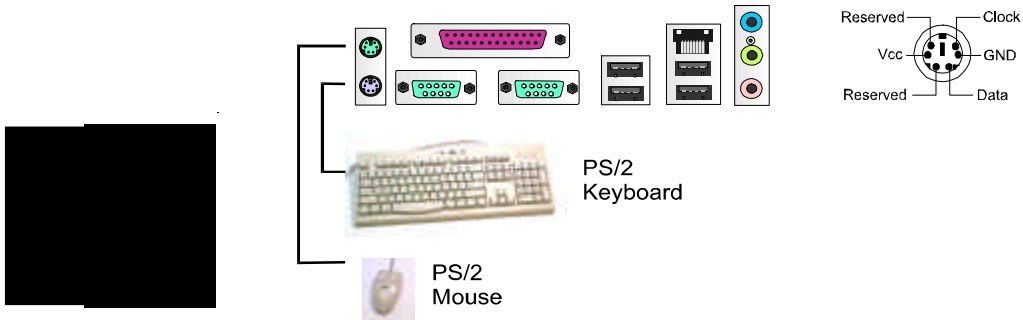


PIN	DEFINITION
1	TA1+
2	TA1-
3	GND
4	GND
5	TB1+
6	TB1-
7	VCC
8	VCC
9	GND
10	NC



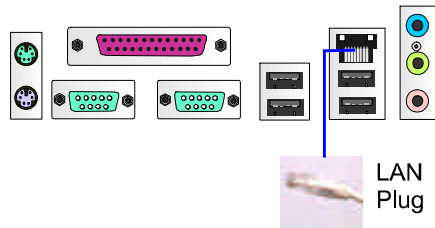
PS/2 Keyboard and Mouse Connector

These two 6-pin female (PS/2 keyboard is purple color and PS/2 mouse is green color) connectors are used for your PS/2 keyboard and PS/2 mouse.



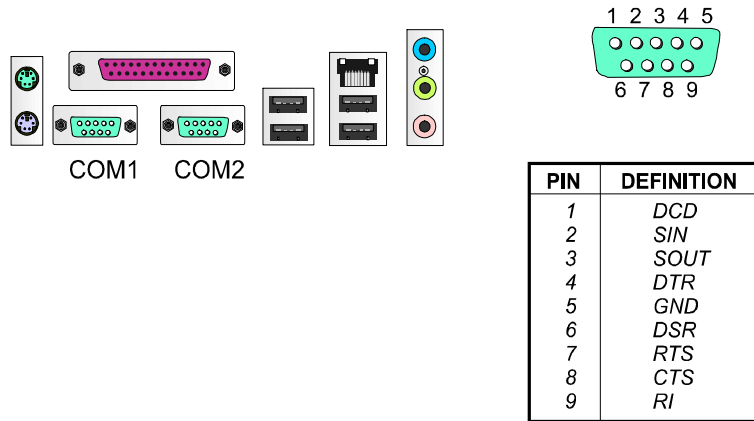
RJ45 LAN Connector

The LAN (RJ45 port) jack is used for the LAN cable plug.



Serial Port Connectors

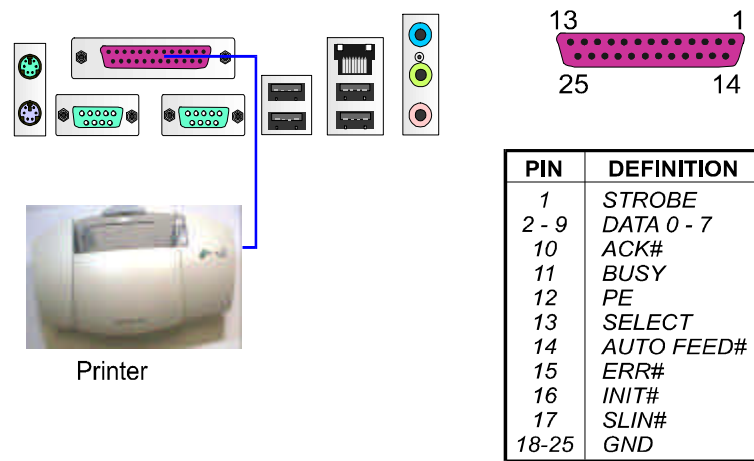
COM1/2 (9-pin D-sub male connector with teal color) allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.



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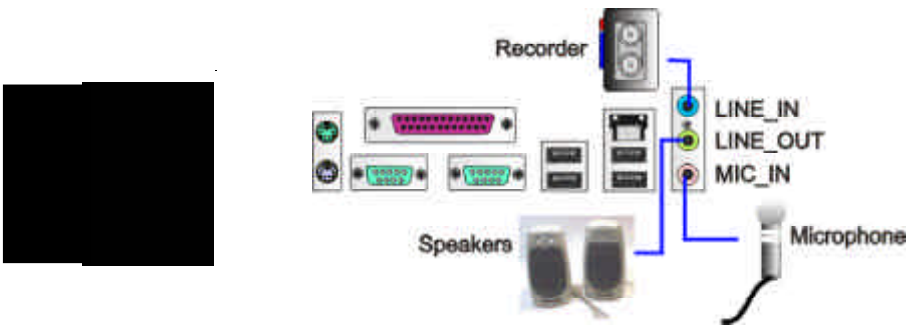
Printer Connector

This 25-pin D-Sub female burgundy-colored connector is attached to your printer.



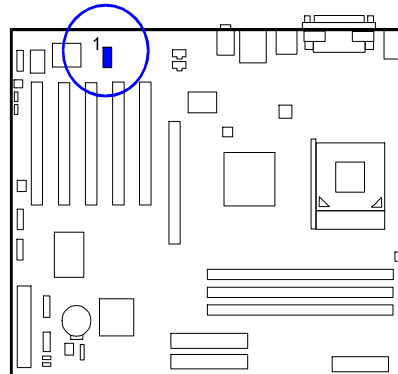
Audio I/O Jacks

LINE_OUT (lime) can be connected to headphones or preferably powered speakers. LINE_IN (light blue) allows tape players or other audio sources to be recorded by your computer or played through the LINE_OUT. MIC_IN (pink) allows microphones to be connected for audio input.



Front Audio Connector

The mainboard has a front panel audio F_AUDIO connector (Intel spec.). It allows users to attach the audio device via front panel (instead of rear panel) by a ribbon cable that in some cases. Its pin definitions are resented below.



	Pin 1	Pin 2	
MIC FNT	<input type="checkbox"/>	<input type="checkbox"/>	AGND
MIC VREF	<input type="checkbox"/>	<input type="checkbox"/>	AVDD5
LINEOF R	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LORET R
Reserved	<input type="checkbox"/>	<input type="checkbox"/>	
LINEOF L	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LORET L

Default:
Short



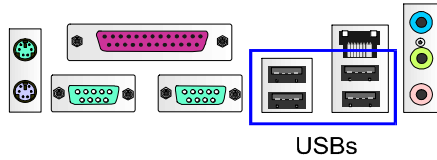
NOTE: If you do not use F_AUDIO, please keep the pinpair 5-6, 9-10 short as default; also, when the front headphone is plugged in, the rear audio output will be disabled.



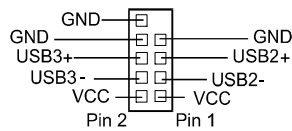
NOTE: The LINE_IN, LINE_OUT, MICROPHONE jacks can be used the 5.1-channel audio output with its software tool. For details, please read the FAQ on the web site www.fic.com.tw.

Universal Serial Bus Connectors

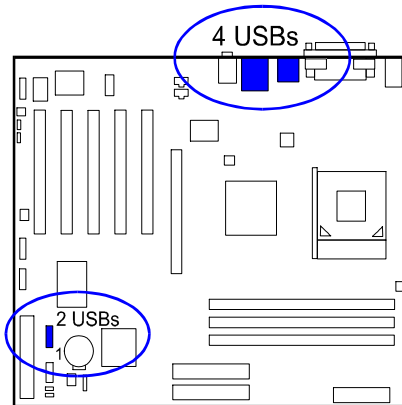
The mainboard have six USB ports; four USB black jacks that integrated on the edge of the board, the other two USB ports on the board. They allows uses to attach with USB devices either from rear or front panels. The USB cable that comes with your mainboard is used to connecting between the USB pinheaders and rear panel. (See the photo below).



The figure below is the pin assignments of the USB4_5.



USB
(Intel Spec.)

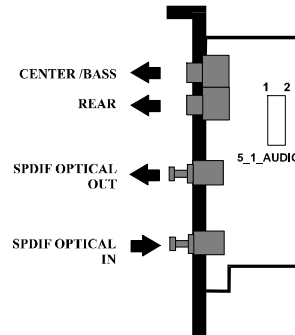
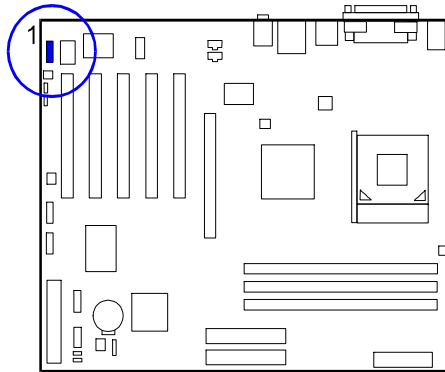


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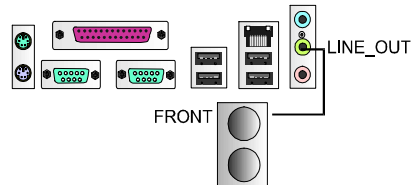
5.1 Audio Channel Feature

The 5_1_AUDIO sound feature are offered via the pinheaders with an optional A73 bracket with ribbon cable. The pinheaders pin assignments are shown below left.

PIN	DEFINITION
1	Front Out R
2	Rear Out R
3	Front Out L
4	Rear Out L
5	Center Out
6	Bass Out
7	AGND
8	
9	VCC
10	SPDIF Optical In
11	SPDIF Out
12	+12V
13	GND
14	SPDIF Coaxial In

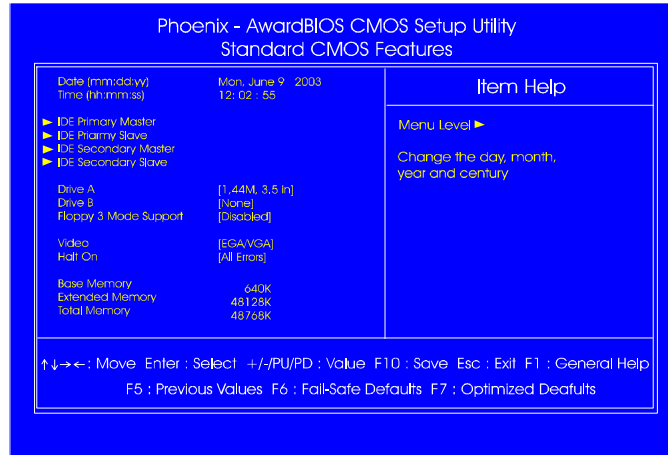


When use the daughter board, plug in the LINE_OUT jack for the front speaker audio output (right and left).



NOTE: If you do not have A73 bracket, the LINE_IN, LINE_OUT, MICROPHONE jacks can be used the 5.1-channel audio output with its software tool.

Standard CMOS Setup



**Chapter 3
BIOS Setup**

The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use **PgUp** or **PgDn** keys to select the value you want in each item.

Date

To set the date, highlight the *Date* field and then press **Page Up/Page Down** or **+/-** keys to set the current date. Follow the month, day and year format.

Time

To set the time, highlight the *Time* field and then press **Page Up/Page Down** or **+/-** keys to set the current time. Follow the hour, minute, and second format.

Hard Disks

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks, the first of which is the *Master* and the second is the *Slave*.

Hard Disk Configurations

- Capacity:** The hard disk size. The unit is Bytes.
Cylinder: The cylinder number of the hard disk.
Head: The read/write head number of hard disk.
Precomp: The cylinder number at which the disk drive changes the write current.
Landing Zone: The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.
Sector: The sector number of each track defined on the hard disk.

Drive A/Drive B

This field records the types of floppy drives installed in the system. To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the **left-** or **right-arrow** key.

Floppy 3 Mode Support

This is a Japanese standard floppy type drive. The standard stores 1.2MB in a 3.5 inch diskette.

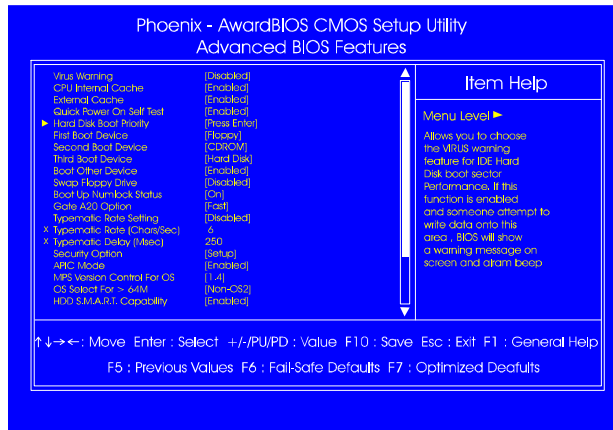
Video

Set this field to the type of video display card installed in the system.

Halt On

This field determines which types of errors will cause the system to halt.

Advanced BIOS Features



Chapter 3
BIOS Setup

Virus Warning

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.

The options are: Enabled, Disabled.

CPU Internal Cache

This controls the status of the processor's internal cache area. The default is Enabled. The options are: Enabled, Disabled.

External Cache

This controls the status of the external (L2) cache area. The default is Enabled. The options are: Enabled, Disabled.

Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test.

The options are: Enabled, Disabled.

First/Second/Third Boot Device

This feature allows user to select the boot device priority. The options are: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, Disabled.

Boot Other Device

Enable the system to boot from other devices if the system fails to boot from the devices that selected from above three features.

The options are: Enabled, Disabled.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up.

The options are: Enabled, Disabled.

Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On, Off.

Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released.

The options are: Disabled, Enabled.

Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. Sets the rate of a character repeat when the key is held down. The options are: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated.

The options are: 250, 500, 750, 1000 millisecond.

Security Option

Allows to set the security level of the system. The options: Setup, System.

APIC Mode

Allows you to decide if the system enters the APIC (Advanced Programmable Interrupt Controller) mode or not for more IRQs can be released.

The options are: Enabled, Disabled.

MPS Version Control For OS

When two CPUs onboard (not this board) this feature allows you to select MPS (Multi-Processor Spec.) version control for OS when logo test executes. The options are: 1.1, 1.4.

OS Select For DRAM > 64MB

If your operating system (OS) is OS/2, select the option OS2. Otherwise, stay with the default setting Non-OS2. The options are: Non-OS2, OS2.

HDD S.M.A.R.T. Capability

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed. The options: Disabled, Enabled.

Report No FDD For WIN 95

When the field under the Standard CMOS Setup Menu for Drive A and/or Drive B is set at None, users must set this field is set at Yes for it to function properly. Otherwise, set at No, even if field for Drive A and/or Drive B is set at None, system will still detect and recognize of a floppy drive(s). The options are: Yes, No.

Video BIOS Shadow

Enabling this feature will copy the video BIOS to shadow RAM, it will improve the system performance. The options are: Enabled, Disabled.

BIOS Guardian

It allows the system to prevent computer viruses. Users will need to disable it to update BIOS. The options are: Enabled, Disabled.



NOTE: Please disable this BIOS feature about BIOS Guardian before you start to reflash BIOS.

BIOS Guardian and Reflash BIOS

BIOS Guardian by default is enabled, thus effectively acts as a firewall against viruses that can attack the BIOS while the system is running. It must be disabled before reflash BIOS.

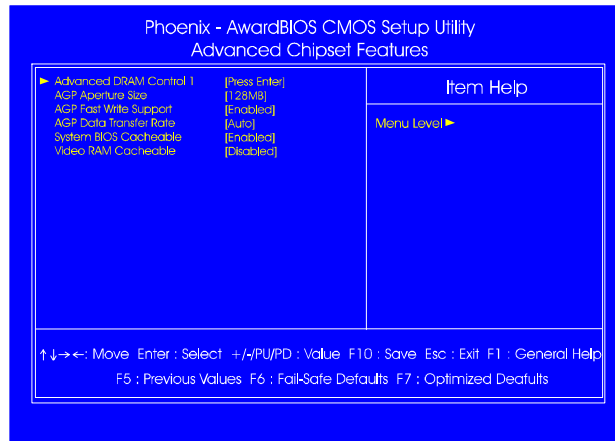
The steps below show you how to off and on BIOS Guardian when reflash BIOS:

1. Press **Del** key while booting. Go to *CMOS Setup Utility* menu.
2. Go to *Advanced BIOS Features* submenu.
3. Set the feature *BIOS Guardian* at Disabled.
4. Save the setting and exit. The system restarts.
5. POST screen holds. A message about BIOS Guardian shows.
6. Press Space bar.
7. Reflash BIOS. Restart the system after complete it.
8. POST screen holds. A message about BIOS Guardian shows.
9. Press **G** key. The feature BIOS Guardian will be enabled again.

Full Screen LOGO Show

It decides whether or not the full screen logo is shown during system booting up. The options are: Enabled, Disabled.

Advanced Chipset Features



Advanced DRAM Control 1

Auto Configuration

The feature allows users to decide the performance of the memory CAS/LAS cycle. The options are: Normal, Performance.

DDR SDRAM CAS Latency

This feature allows users to set the DDR SDRAM CAS latency timing cycle, when the above feature set at *Performance*.
The options are: Auto, 2.0T, 2.5T, 3.0T.

CPU/DRAM Bypass Ctrl

The item *Auto* allows the memory access latency of those requests which are from Host may be reduced in certain condition detected automatically. When set at *Disabled*, this function will not work.
The options are: Auto, Disabled.

AGP Aperture Size

This item defines the size of the aperture if you use an AGP graphics adapter. It refers to a section of the PCI memory address range used for graphics memory. The options are: 4 MB, 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB.

AGP Fast Write Support

This feature allows you to disabled AGP fast write mode.
The options are: Disabled, Enabled.

AGP Data Transfer Rate

This item allows users to decide the AGP data transfer rate.
The options are: Auto, 1X, 2X, 4X.

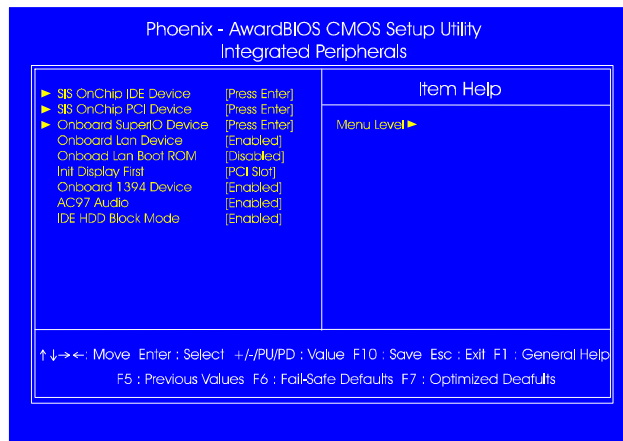
System BIOS Cacheable

Setting at Enabled will allow the caching of the BIOS ROM F0000H-FFFFFH, resulting in better system performance. It may cause system error when some program try to access the memory area.
The options are: Disabled, Enabled.

Video RAM Cacheable

When enabled, allows the video RAM area to be cacheable.
The options are: Enabled, Disabled.

Integrated Peripherals



SIS OnChip IDE Device

Internal PCI/IDE

This item allows users to disable either or both PCI and IDE channels.
The options are: Disabled, Primary, Secondary, Both.

IDE Primary Master/Slave PIO

It allows an automatic or a manual configuration of the PCI primary IDE hard drive (master/slave) mode.

The options are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Secondary Master/Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (master/slave) mode.

The options are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary Master/Slave UDMA

Allows you to select the first PCI IDE channel of the first master/slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto, Disabled.

Secondary Master/Slave UDMA

Allows you to select the second PCI IDE channel of the secondary master/slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto, Disabled.

IDE Burst Mode

Allows you to disable the IDE channel burst mode.

The options are: Enabled, Disabled.

SIS OnChip PCI Device

SIS USB Controller

Disable this option if you are not using the onboard USB feature.

The options are: Disabled, Enabled.

USB 2.0 Support

Disable this option if you are not using the onboard USB 2.0 feature (USB 1.1 not effected). The options are: Disabled, Enabled.

USB Keyboard Support

When a USB keyboard is installed, please set at Enabled.

The options are: Disabled, Enabled.

Onboard SuperIO Device

Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

The options are: Enabled, Disabled.

Onboard Serial Port 1/2

If the serial port 1/2 uses the onboard I/O controller, you can modify your serial port parameters. The options are: 3F8/IRQ4, 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

UART Mode Select

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Standard, if you use COM2 as the serial port as the serial port, instead as an IR port. The options are: Normal, IrDA, ASKIR, SCR.

UR2 Duplex Mode

Allows you to select the IR modes. The options are: Half, Full.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

The options are: Disabled, 378/IRQ7, 278/IRQ5, 3BC/IRQ7.

Parallel Port Mode

Allows you to connect with an advanced printer via the port mode it supports. The options are: SPP, EPP, ECP, ECP+EPP.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access (DMA) channel if the ECP mode selected. The options are: 1, 3.

Onboard Lan Device

This feature allows users to enable or disable the onboard Lan device. The options are: Enabled, Disabled.

Onboard Lan Boot ROM

This feature allows users to enable or disable the onboard Lan boot ROM to boot system. The options are: Enabled, Disabled.

Init Display First

When you install a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from PCI or onboard AGP. The options are: PCI Slot, AGP.

Onboard 1394 Device

It allows users to disable the onboard 1394 feature.
The options are: Enabled, Disabled.

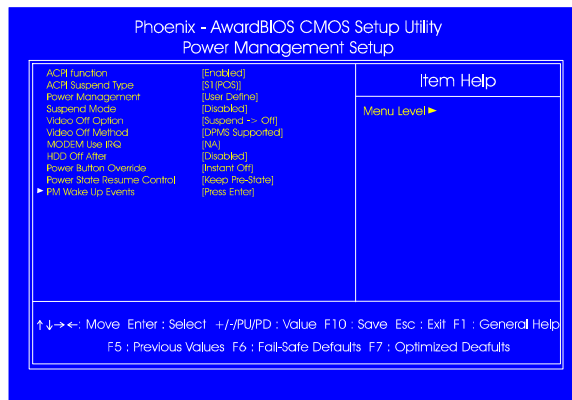
AC97 AUDIO

This feature auto detects if you use a card that with a CODEC to enable or disable the AC97 audio function. The options are: Enabled, Disabled.

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 read/writes per sector the drive can support.
The options are: Enabled, Disabled.

Power Management Setup



ACPI function

This item allows you to disable the ACPI function.
The options are: Enabled, Disabled.

ACPI Suspend Type

This item allows you to select ACPI suspend types.
The options are: S1(POS), S3 (STR), S1&S3.

Power Management

This item allows you to adjust the power management features.

Select *User Define* for configuring your own power management features. *Min Saving* initiates all predefined timers in their minimum values. *Max Saving*, on the other hand, initiates maximum values. The options are: User Define, Min Saving, Max Saving.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hour.

Video Off Option

This feature provides the selections of the video display power saving mode. The option *Suspend -> Off* allows the video display to go blank if the system enters Suspend mode. The option *All Modes -> Off* allows the video display to go blank if the system enters Doze mode or Suspend mode. The option *Always On* allows the video display to stay in Standby mode even when the system enters Doze or Suspend mode.

The options are: Suspend -> Off, All Modes -> Off, Always On.

Video Off Method

The option *V/H SYNC+Blank* allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. *DPMS Supported* allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). *Blank Screen* allows the BIOS to blank off screen display by turning off the red-green-blue signals.

The options are: V/H SYNC+Blank, DPMS Supported, Blank Screen.

MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem IRQ#.

The options are: NA, 3, 4, 5, 7, 9, 10, 11.

HDD Off After

The option lets the BIOS turn the HDD motor off when system is in Suspend mode. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode.

The options 1 Min..15 Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.
The options are: Disable, 1 Min..15 Min.

Power Button Override

The selection *Delay 4 Sec.* will allow the system shut down after 4 seconds after the power button is pressed. The selection *Instant-Off* will allow the system shut down immediately once the power button is pressed.
The settings are: Instant-Off, Delay 4 Sec.

Power State Resume Control

The item allows you to select the state that your personal computer returns to after a power failure.
The settings are: Keep Pre-State, Always Off, Always On.

PM Wake Up Events

IRQ[3-7,9-15], NMI

Enable this feature will keep the system not in the Suspend mode when IRQ3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, NMI.
The options are: Enabled, Disabled.

IRQ 8 Break Suspend

Enable this feature will make IRQ8 to resume the system from Suspend mode. The options are: Enabled, Disabled.

RING Power Up Control

An incoming call via modem awakes the system from its soft-off mode.
The options are Disabled, Enabled.

PCIPME Power Up Control

When set at Enabled, a Power Management Event (PME) come from PCIMAC will make the system from soft-off state.
The options are Disabled, Enabled.

Month Alarm/Day of Month Alarm/Time (hh:mm:ss) Alarm

This feature allows you to set the time of the alarm starts.

**** Reload Global Timer Events ****

Primary IDE

When the primary master/slave HDD is working, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled , Enabled.

Secondary IDE

When the secondary master/slave HDD is working, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled, Enabled.

FDD, COM, LPT Port

When FDD, COM, or LPT is working, the system timer will be reloaded and the system will not be into the suspend mode.

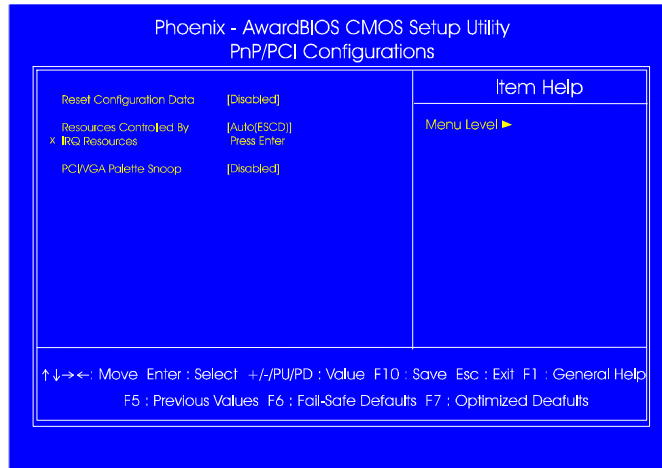
The options are: Disabled, Enabled.

PCI PIRQ[A-D]#

When the PCI PIRQ[A-D]# has been alerted, the system timer will be reloaded and the system will not be into the suspend mode.

The options are: Disabled, Enabled.

PnP/PCI Configurations



Chapter 3
BIOS Setup

Reset Configuration Data

Enabling it to reset the system Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The options are: Disabled, Enabled.

Resources Controlled By

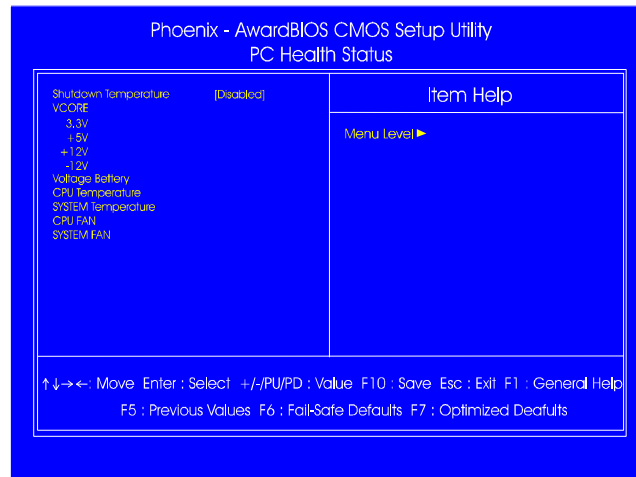
If set at *Auto(ESCD)*, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (ESCD), Manual.

If the *manual* option is selected, after the feature **IRQ Resources** being pressed, of **IRQ- Assigned To** are: PCI Device, Reserved. When resources were controlled manually, assign each system interrupt a type, depending on each device type to use the interrupt.

PCI/VGA Palette Snoop

Set this feature to be enabled if any ISA adapter card installed in the system requires the VGA palette snoop function. The options are: Disabled, Enabled.

PC Health Status



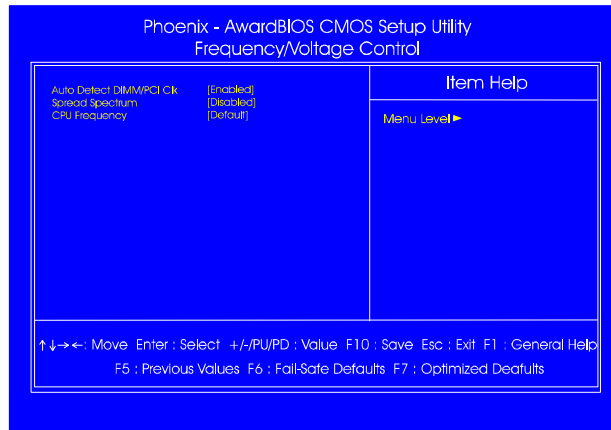
Shutdown Temperature

This feature helps to shutdown the system when the system temperature is as high as the selected temperature to prevent from the overheat problem. The option list presents all the temperatures that supported by the board and Disabled.

VCORE / 3.3V / +5V / +12V / -12V / Voltage Battery / CPU Temperature / SYSTEM Temperature / CPU FAN / SYSTEM FAN

These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. It is not user-configurable.

Frequency/Voltage Control



Chapter 3
BIOS Setup

Auto Detect DIMM/PCI Clk

When enabled, BIOS will detect the PCI slot and DIMM slot. If no any device in, BIOS will auto disable its clock.

The options are: Enabled, Disabled.

Spread Spectrum

This item reduces the EMI (Electromagnetic Interference) generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have EMI problems, set it at *Disabled* for optimal system stability and performance. Set at *Enabled* for EMI reduction. Please set at *Disabled* if you are overclocking because even a 0.25% jitter can introduce a temporary boost in clockspeed of 25MHz (with a 1GHz CPU) which may just cause your overclocked CPU to lock up.

The options are: Disabled, Enabled.

CPU Frequency

This feature allows you to select the CPU clock frequency. The default setting, Default, will detect your CPU clock frequency automatically. If you set a inappropriate option which leads to a booting problem, keep pressing the Insert key until the display appears will solve it. The options lists all provided by the system BIOS.

Load Fail-Safe Defaults

This submenu is selected to diagnose the problem after the computer boots, if the computer will not boot. These settings do not give optimal performance.

Load Optimized Defaults

This submenu is selected for default settings which provide the best system performance.

Set Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable password, press Enter twice when you are prompted to enter a password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time when you reboot the system or enter the CMOS Setup utility.

Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility: **SAVE to CMOS and EXIT (Y/N)?**

Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

Quit Without Saving (Y/N)?