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ITEM LIST CHECKUP

- ☒ Mainboard
- ☒ Support CD
- ☒ Bundled Bonus Pack CD
- ☒ Bundled Bonus Pack Manual
- ☒ Thermal Cable (optional)
- ☒ ATA66/100 IDE Cable
- ☐ RS232 Cable
- ☒ FDD Cable
- ☒ User's Manual

Chapter 1 Specification

Introduction

• This chapter introduces the characteristics of this series of mainboards. It includes the information on the chipset, CPU types, built-in functions and layout. Users will have more ideas about this powerful series after reading this chapter.

The topics contained in this chapter are:

1-1 Mainboard Specifications

1-2 Mainboard Layout

1-3 Chipset Diagram

1-1 Mainboard Specifications

1-1.1 CPU Socket

- CPU Socket 478B on board, supporting Intel® Pentium 4 and Northwood processors in the 478-pin package for 400MHz System Bus.

1-1.2 Sysem Chipset Architecture

- INTEL 845 Chipset Memory Control Hub (MCH):
  To work with Intel Pentium 4 Processor for managing and arbitrating between 4 interfaces:
  -- the System Bus (Host Interface);
  -- the memory Interface;
  -- the AGP Port and the Hub Interface;
- MCH Clockings:
  -- Asynchronous;
  -- System Bus target speed at 400MHz;
  -- AGP and Hub Interface constantly at 66MHz base;
- Intel ICH2 Chipset (Second generation I/O Controller Hub):
  Communicating with Intel 845 by the Hub interface at 66MHz/266MB/s;
  -- Transmitting Interrupt related messages;
  -- Transmitting Power management events;
  -- Transmitting SMI, SCI, SERR indication messages;

1-1.3 Memory

3pcs of DIMM on board for single / double sided DIMMs, supported by 3.3V default voltage:

- Intel 845 MCH directly supporting one channel of SDRAM up to 3GB capacity.

1-1.4 AMI BIOS

- Supporting Plug & Play V1.0.
- FLASH MEMORY for easy upgrade.
- Supporting BIOS writing protection.
- Year 2000 compliant.

1-1.5 Hardware Monitor

- Monitoring program in Winbond W83627HF to provide desktop manage ment of hardware temperatures, voltages and Fan Speeds. Software enclosed in Support CD for user's installation.

1-1.6 Sound Controller

- SoundBlaster Pro Hardware and Direct Sound Ready AC97 Digital Audio Controller with Codec onboard.

1-1.7 Multi-I/O Function

- Integrated IDE Controller, supporting:
  -- 2x Ultra ATA100 / 66 / 33 Connectors
  -- Two UARTs for Complete Serial Ports (2x COM).
- Dedicated IR Connector:
  -- Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR.
- Multi-mode parallel connector:
  -- Standard mode, ECP and EPP support.
- Floppy Disk connector:
  -- One FDD connector with drive swap support.
- Universal Serial Bus connector:
  -- USB V1.1 compliant.
  -- 2 built-in USB connectors and one USB Header (USB1) which requires an optional USB cable to provide 2 more optional USB ports.
- PS/2 Keyboard connector.
- PS/2 Mouse connector.

1-1.8 Expansion Slots

- 6 PCI bus Master slots.
- 1 AGP 4x mode slot.
- 1 CNR slot.
- 3 DIMM slots.

1-1.9 Accelerated Graphics port (AGP) Interface

- One AGP slot on board is supported by the Intel 845 Chipset MCH AGP Interface in 1.5V mode:
  -- AGP4X v2.0 compliant.

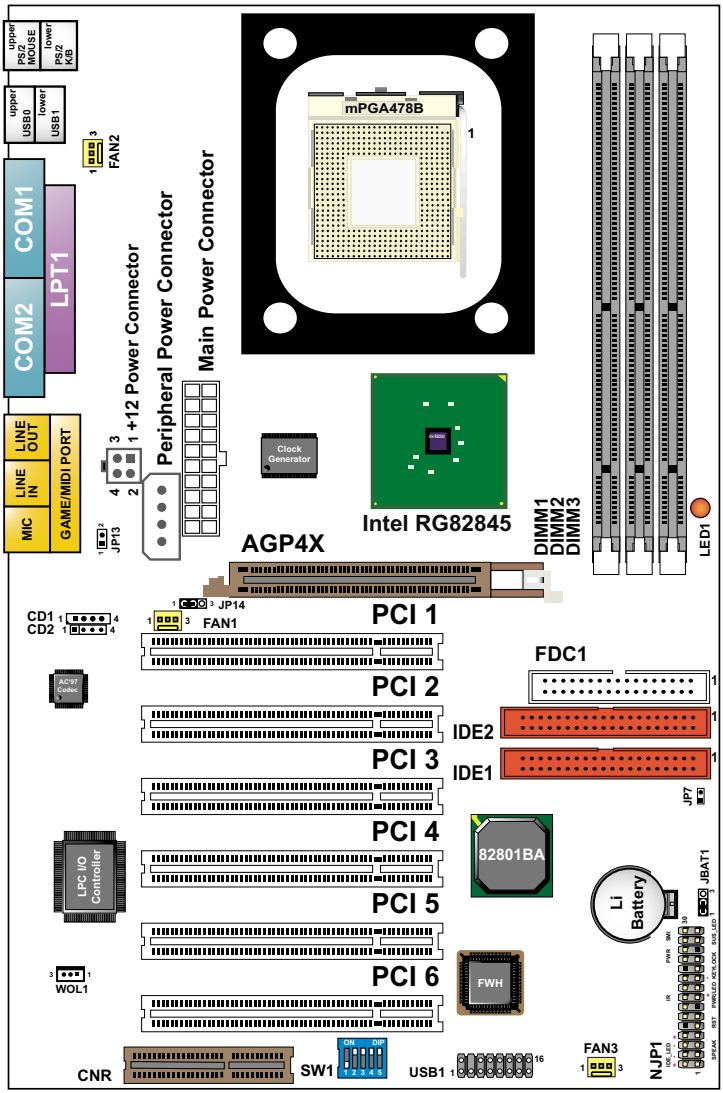
1-1.10 FORM FACTOR

- ATX form factor.
- This mainboard is compatible with both ATX Power Supply Version 2.03 (with +12V Power Connector) and the older ATX Power Supply (with Peripheral Power Connector).
- Mainboard size: 30.5cm x 20.0cm.

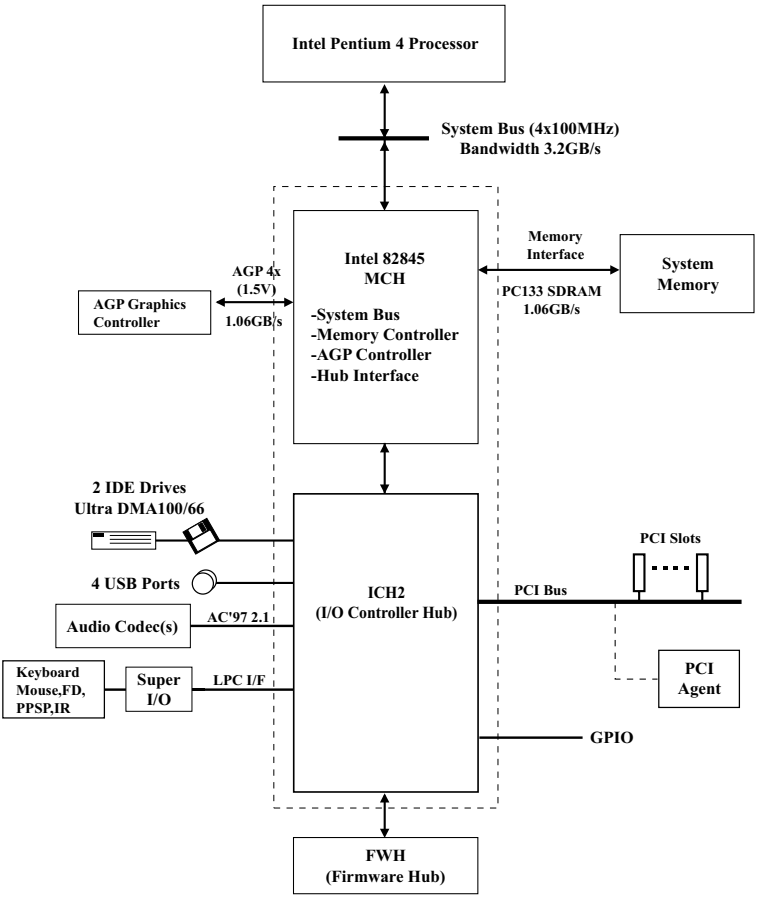
1-1.11 Power Management

- ACPI 1.0B compliant (Advanced Configuration and Power Interface).
- APM V1.2 compliant (Legacy power management).
- Supporting ACPI suspend POS mode (Power On Suspend).
- System event monitoring with two event classes.
- Supporting Wake On LAN (WOL) & Wake On Modem.
- Supporting real time clock (RTC) with date alarm, month alarm, and century field.

1-2 MainBoard Layout



1-3 Chipset System Block Diagram



Intel 82845MCH + ICH2 Chipset Diagram

Chapter 2 Hardware Setup

To Get things ready for Hardware setup !!!

1. We recommend to install your CPU before any other componentes. For detailed installalation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Inproper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable onboard, please follow the instructions described in the User manual for proper setup. Incorrect setting will cause damage to your CPU.

The following topics are included in this chapter:

2-1 Pentium 4 CPU Installation

2-2 Pentium 4 CPU Fan Installation

2-3 Memory Installation

2-4 AGP 4X (Accelerated Graphics Port) Installation

2-5 HDD/FDD Installation

2-6 Jumper and Switch Settings

2-7 Other Connectors Configuration

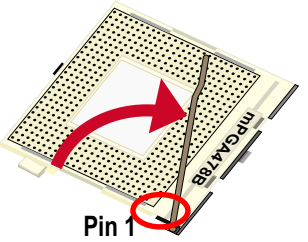
2-8 IRQ Description

2-1 Pentium 4 CPU Installation with Socket 478

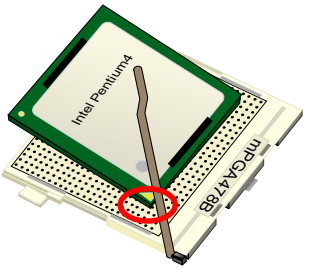
This series of mainboards are built with CPU Socket 478 (with 478 pins) supporting the Intel Pentium 4 CPU:

- *Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478.*
- *After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandom with this CPU. This CPU Fan installation is described in next section.*

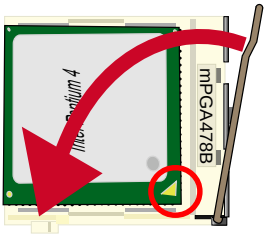
1 First pull sideways the lever of Socket 478, and then turn it up 90-degree so as to raise the upper layer of the socket from the lower platform.



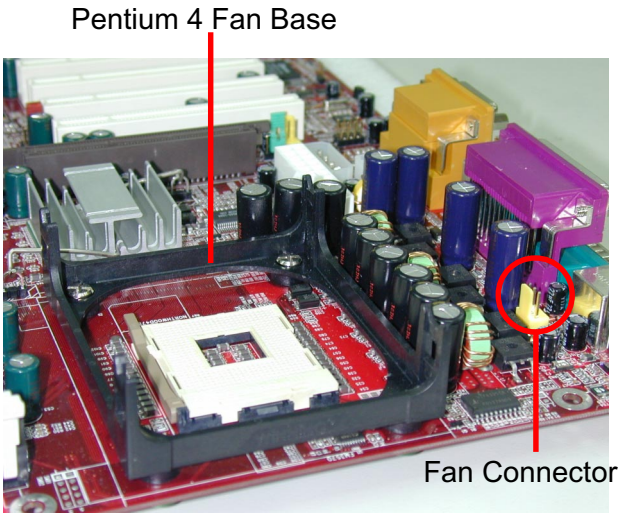
2 Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins can get into the socket.

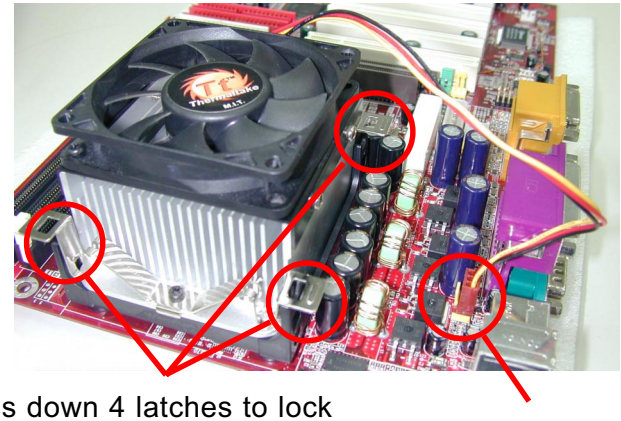


3 Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.



2-2 Pentium 4 CPU Fan Installation:





2-3 Memory Installation

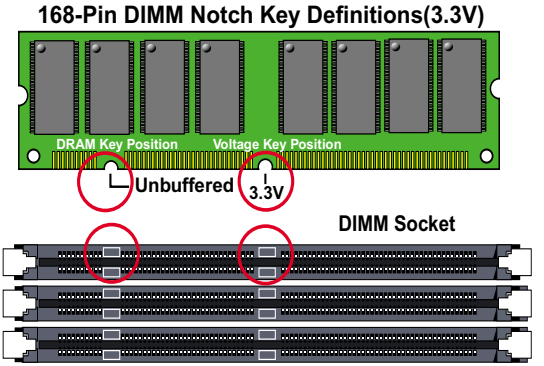
How to tackle the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module. Failure to do so may cause severe damage to both your mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM in a socket improperly will damage the memory module and socket.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DIMM Module

- This mainboard only supports SDRAM up to 3GB capacity with 3 DIMM sockets on board. Do not insert other type of modules into these sockets. EDO & FTP DRAM are not supported by this mainboard either.
- DIMM has 168-pins and two notches. Insert a DIMM vertically into the DIMM socket with each notch matching the one in the socket. Press the DIMM down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the socket.

Key Point: Press the module down gradually until it has totally reached the socket bottom and clicked up both two socket latches completely. If any one of the latches has not turned up completely, you should unplug the module and press it down the socket a bit more firmly.

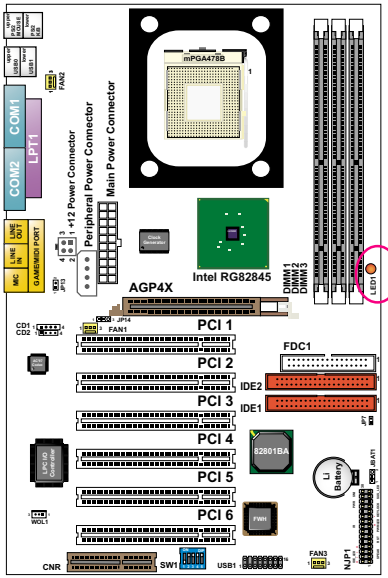


2-3.2 To Remove a DIMM:

- Press down the holding latches on both sides of socket and the module will be released from the DIMM socket.

2-3.3 LED1: DIMM Socket Powered On

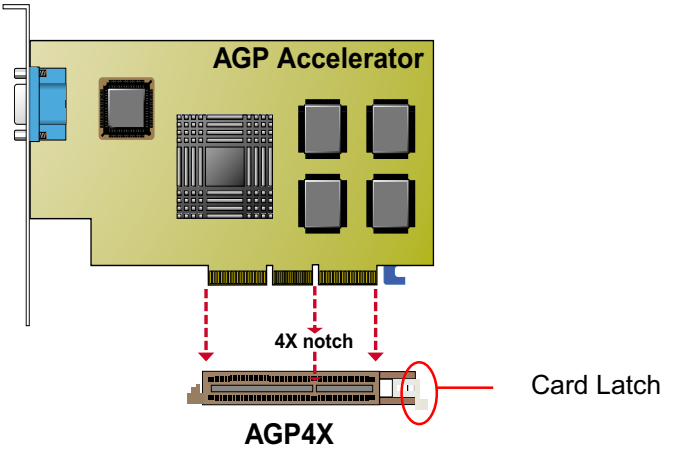
Warning: An indicator LED1 is on board . Whenever system is started, all the DIMM sockets on board will also be powered on with the set voltage, resulting in LED1 lighting up. This LED1 is to warn users that, whenever DIMM socket is powered on , no memory module should be removed from or added into it.



LED1:
DIMM Socket Powered On

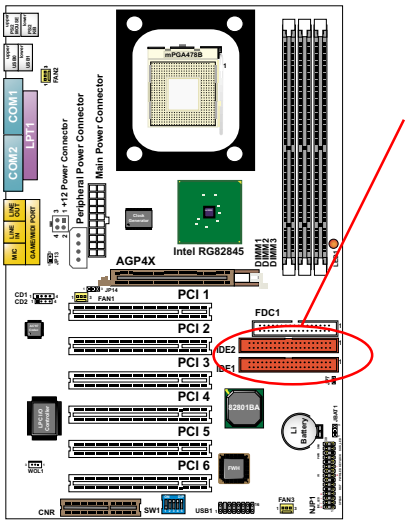
2-4 AGP 4X (Accelerated Graphics Port) Installation

Warning:
- *The AGP 4X slot on board supports solely 4X AGP card configuration. User should not insert 1X / 2X AGP card to this mainboard.*
- *If an AGP 2X Graphics Card is inserted into this AGP 4X slot, the system will not be started.*

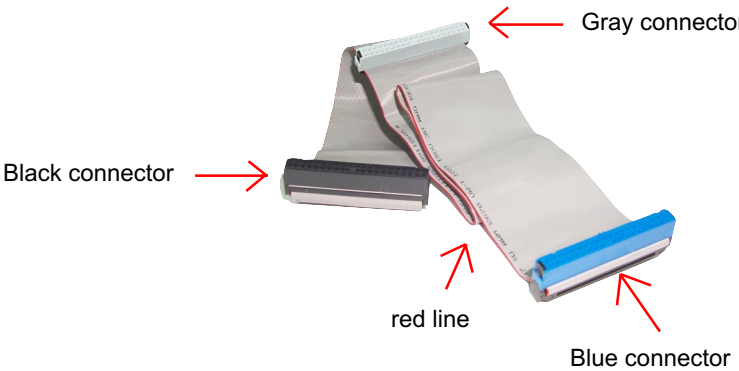


2-5 HDD/FDD Installation

- To install HDD (Hard Disk Drive), you may connect the connector of IDE cable to the primary (IDE1) or secondary (IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.

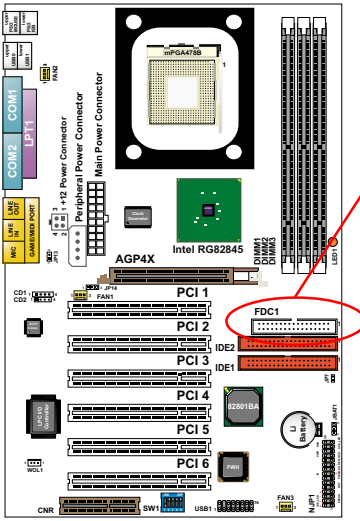


Hard Disk Drive Connector: Orient the red line on the IDE ribbon cable to Pin1.

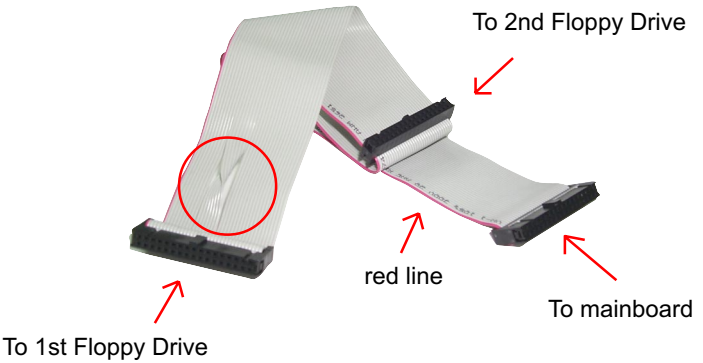


IDE Cable

• To install FDD (Floppy Disk Drive), you should connect the end of cable with single connector to the board , and connect the other end with two plugs to the floppy drives.



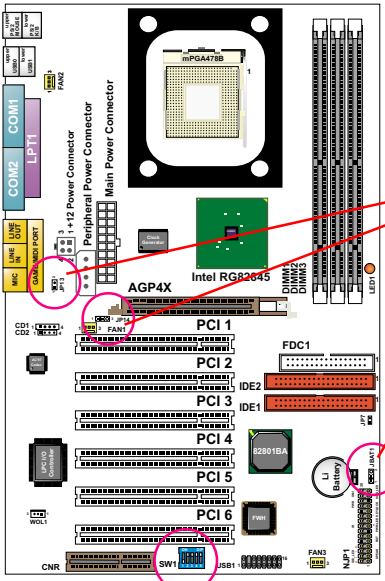
Floppy Disk Drive Connector: Orient the red line on the floppy ribbon cable to Pin1.



FDD Cable

2-6 Jumper and Switch Settings

• The following diagrams show the locations and settings of jumper blocks on the mainboard.



JP13/JP14: Factory Test	
Only for factory test.	JP13
	JP14

JBAT1: Clear CMOS Data	
Clear CMOS Data	JBAT1
Retain Data (Default)	JBAT1

SW1 On / Off — **CPU Clock Select**

1 2 3 4 5

* Off On On On On (Default)

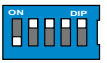
CPU clock (MHz)	S1	S2	S3	S4	S5
100 (Default)	off	on	on	on	on
103	on	off	on	on	on
105	off	off	on	on	on
111	on	off	off	on	on
130	off	off	on	off	on
133	on	on	on	on	off

How to tackle with Jumpers:

- *Do not remove the jumper when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, mainboard could be damaged.*
- *In the Jumper setting diagram, all jumper pins covered with black marks stand for closed pins by jumper caps.*

2-6.1 Switch 1 CPU Clock Select

- This Series of mainboards are shipped to users with a 5-DIP Switch 1, by which user can select a CPU clock to match with the Pentium 4 processor selected on board. So users are not recommeded to take Switch 1 as a tool for overclocking. It is saver and more advisible for users to select the CPU clock as close as possible to the one marked on the selected CPU.

SW1 On / Off 

1 2 3 4 5 **CPU Clock Select**

* Off On On On On (Default)

CPU clock (MHz)	S1	S2	S3	S4	S5
100 (Default)	off	on	on	on	on
103	on	off	on	on	on
105	off	off	on	on	on
111	on	off	off	on	on
130	off	off	on	off	on
133	on	on	on	on	off

- **Advice from our Engineering Team:**

If you insert a Pentium 4 processor of 100MHz to the CPU socket and select 103MHz or any higher Switch setting, you are taking the risk of breaking the stability of your CPU as well as the mainboard. Overclocking should always take all other components on board into account.

2-6.2 Factory Test (By JP13/JP14)

JP13/JP14: Factory Test	
Only for factory test.	 JP13
	 JP14

2-6.3 JBAT1 Clear CMOS

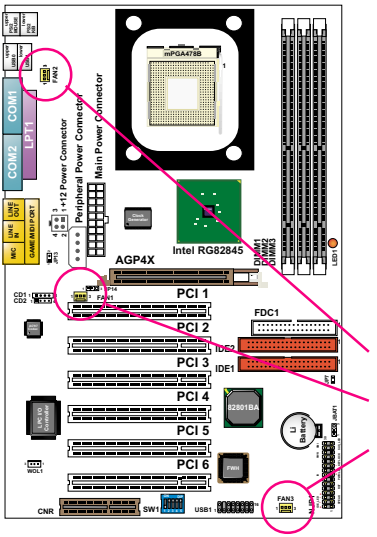
- When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:
  (1) Power off system;
  (2) Set JBAT1 to Pin 2-3 closed.
  (3) After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
  (4) CMOS data are restored to default. Remember never clear CMOS when system power is on.

JBAT1: Clear CMOS Data	
Clear CMOS Data	 JBAT1
Retain Data (Default)	 JBAT1

2-7 Other Connectors Configuration

• This section lists out all connectors configurations for users' reference.

2-7.1 On Board FAN Connectors (FAN1,FAN2, FAN3)



GND
+12V
SENSOR

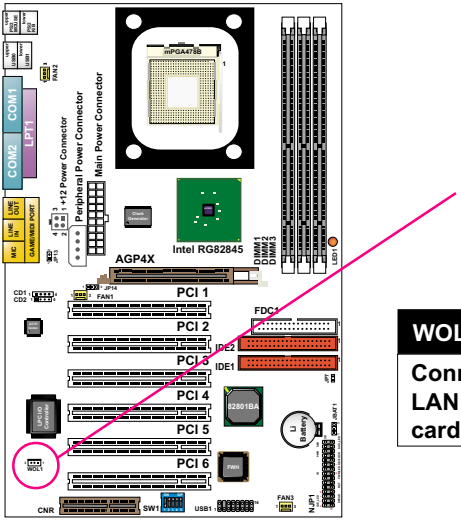
FAN1, FAN2, FAN3: On-Board FAN Connectors		
CPU FAN		FAN2
SYSTEM FAN		FAN1
CHASSIS FAN		FAN3

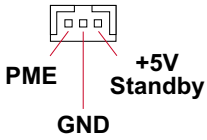
These fan connectors support CPU/System/chassis cooling fan with +12V. When connecting wire to FAN connectors, users should pay attention that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. If your mainboard has Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.

For fans with speed sensors, each rotation of the fan blades will send out 2 electric pulses, by which System Hardware Monitor will work out the fan rotation speed by counting the pulses.

NOTE : We use 3 "Yellow" fan connectors to mark that they support fan speed sensor function.

2-7.2 WOL1 Wake On LAN



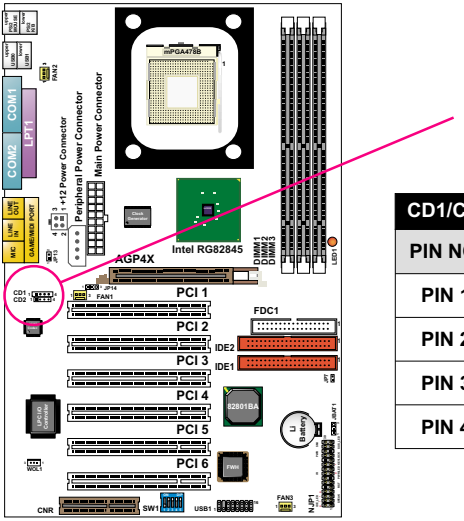


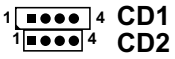
WOL1: Wake On LAN	
Connect the Wake On LAN signal from LAN card to WOL1	WOL1

This connector connects to a LAN card with a Wake On LAN output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.

This feature requires that Wake On LAN feature is enabled in the BIOS setting called ***"Power Management Setup"*** and that your system must be on ATX power supply with at least 720mA / +5V standby power.

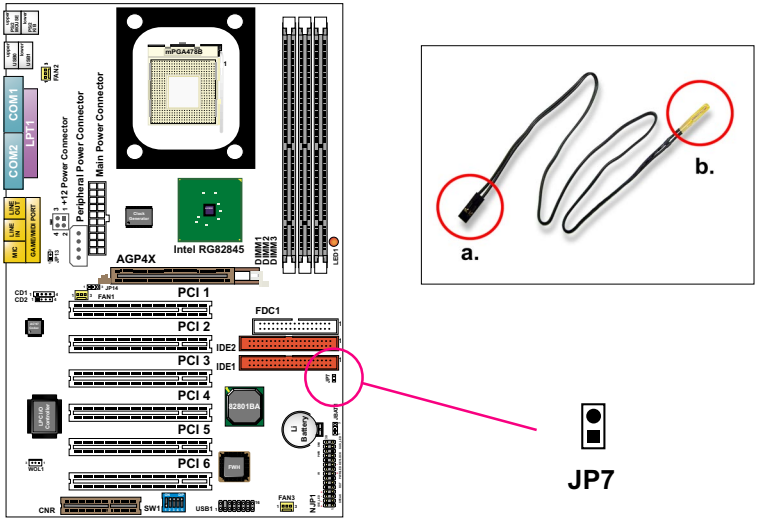
2-7.3 CD-ROM Audio Connector (CD1/CD2)





CD1/CD2: CD ROM Audio Connector		
PIN NO.	CD1	CD2
PIN 1	Left Channel	GND
PIN 2	GND	Left Channel
PIN 3	GND	GND
PIN 4	Right Channel	Right Channel

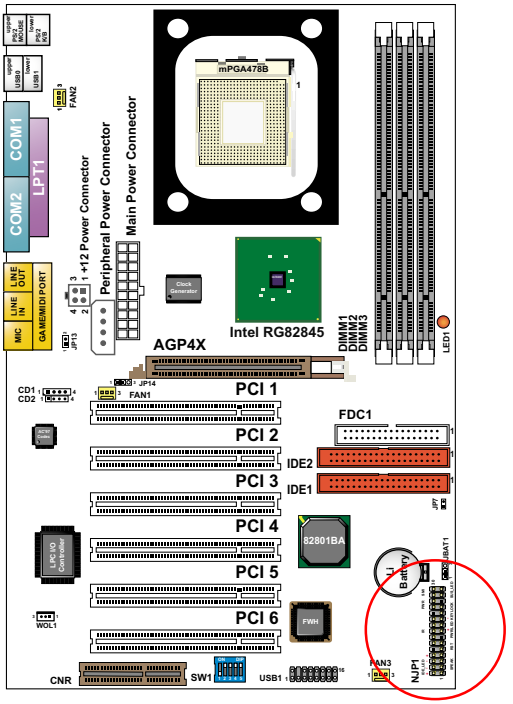
2-7.4 Thermal Sensor Connector (JP7) (Optional)

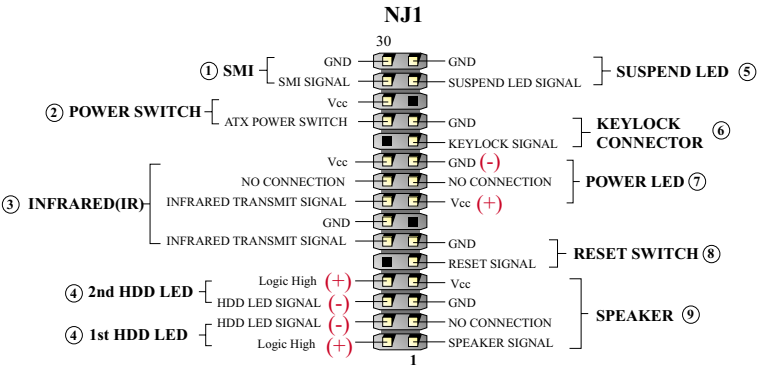


We provide a thermal cable in the mainboard package. This thermal cable is to monitor device which will generates a lot of heat, such as HDD, Graphics card etc. Please connect one end (A) of the thermal cable to mainboard JP7 header, and tape another end (B) of thermal cable on to the device which you want to monitor. After you have finish the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware monitor utility.**

2-7.5 Complex Header NJ1

• This complex Header consists of 10 connectors providing various supports:





1. SMI Connector (System Management Interrupt):
CONNECTION: This 2-pin connector is connected to the case-mounted Suspend Switch.
FUNCTION : Manually placing the system into a Suspend mode or "Green" mode.

2. Power Switch Connector:
CONNECTION: Connected to a momentary button or switch.
FUNCTION : Manually switching the system between "On" and "Soft Off". Pressing the momentary button for more than 4 seconds will also turn the system off.

3. IR Connector (Infrared Connector):
CONNECTION: Connected to Connector IR on board.
FUNCTION : Supporting wireless transmitting and receiving module on board.

4. 1st HDD LED Connector / 2nd HDD LED Connector:
CONNECTION: Connected to HDD LED.
FUNCTION : To supply power to HDD LED.

5. Suspend LED Connector:
CONNECTION: Connected to Suspend indicator.
FUNCTION : To supply power to "Suspend indicator".

6. Keylock Connector:
CONNECTION: Connected to keylock switch.
FUNCTION : To lock keyboard for security purpose.

7. Power LED Connector:
CONNECTION: Connected to System Power LED.
FUNCTION : To supply power to "System Power LED".

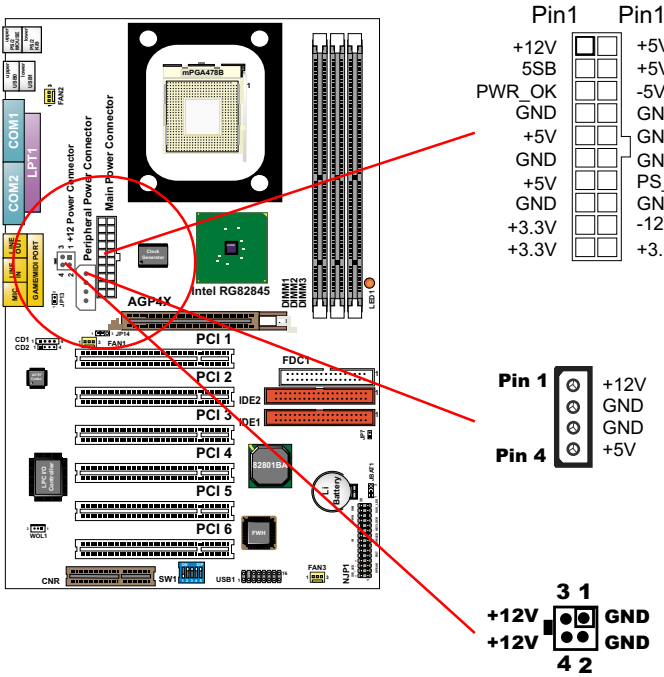
8. Reset Switch Connector:
CONNECTION: Connected to the case-mounted "Reset Switch".
FUNCTION : To supply power to "Reset Switch" and support system reboot function.

9. Speaker Connector:
CONNECTION: Connected to the case-mounted Speaker.
FUNCTION : To supply power to the case-mounted Speaker.

2-7.6 ATX Power Supply Connectors version 2.03 for Pentium 4

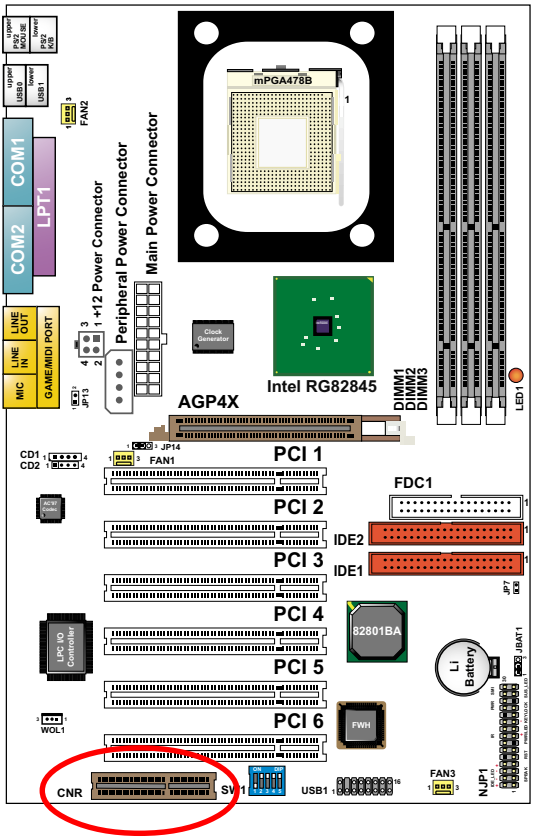
- This mainboard is compatible with both ATX Power Supply Version 2.03 (with +12V Power Connector) and the older ATX Power Supply (with Peripheral Power Connector):

> *Important:*
> *1. If users use an older ATX Power Supply with Peripheral Power Connector, please connect both the Main Power Connector and the Peripheral Power Connector to mainboard.*
> *2. If users use the ATX Power Supply Version 2.03 (with a +12V Power Connector), please connect either the +12V Power Connector or Peripheral Power Connector in addition to the Main Power Connector.*



2-7.7 Communication And Networking Riser Slot (CNR)

• This slot allows you to use network, modem or audio riser cards.



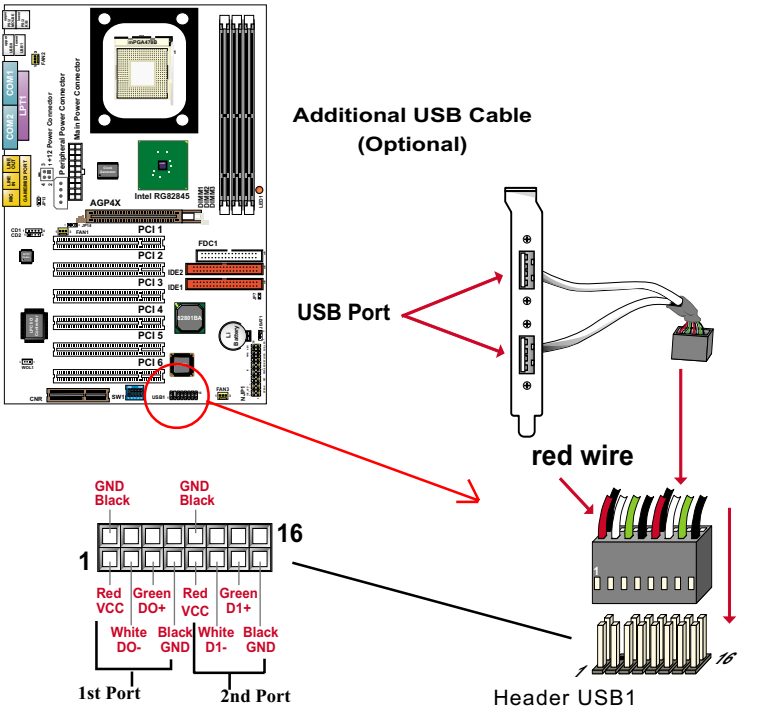
CNR slot

Note:

1. If modem CNR is installed, the modem CNR must be set as primary.
2. Only one LAN CNR can be supported.
3. The audio CNR must be set as secondary, if on-chip AC 97 is enabled.
4. CNR devices are not provided with this mainboard.

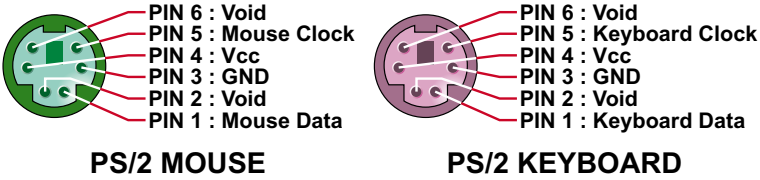
2-7.8 USB Header (Header USB1)

• This header is for providing you two additional USB ports by using an additional USB Cable. User can order the additional USB cable from your mainboard dealers and venders.

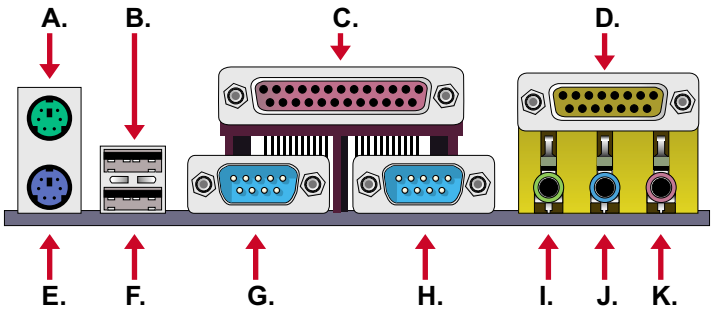


• When plugging the USB cable into Header USB1, users must make sure the red wire is connected to the first pin.

2-7.9 PS/2 Mouse And PS/2 Keyboard



2-7.10 Chassis Panel Connector



A : PS/2 MOUSE PORT
B : USB 0 PORT
C : LPT1 PORT
D : GAME/MIDI PORT
E : PS/2 KEYBOARD PORT
F : USB 1 PORT
G : COM1 PORT
H : COM2 PORT
I : LINE/SPEAKER OUT
J : LINE IN
K : MICROPHONE INPUT

2-8 IRQ Description

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5	Free	13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9	Free	4
IRQ 10	Free	5
IRQ 11	Free	6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA card, requires you to configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the ***Control Panel*** in ***My Computer***, contains a ***System*** icon, which gives you a ***Device Manager*** tab. Double-Clicking on a specific hardware device gives you a ***Resources*** tab which shows the Interrupt number and address. Double-Clicking ***Computers*** to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device shares IRQ with any other device, your computer will easily get into trouble.

Chapter 3 Software Setup

Drivers, Utilities and Software Installation

• Support CD:
This series of mainboards will always be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

• Contents of Support CD:
For 85SD-C, user should be able to find in the Supported CD the following drivers and utilities supported by Intel 845 Chipset:
1. INF Utility (Intel Chipset Software Installation Utility);
2. Intel Application Accelerator (IAA);
3. AC'97 Drivers;
4. Hardware Monitor Utility.

This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME, Windows 2000 and Windows XP. The installation procedures for all these operating sistems are all programed into an auto-run mode. What users have to do is to read and follow the pop-up instructions to carry out the installation. We therefore take the installation on Windows 98 as the general illustration hereby.
The priority of drivers to be installed should also be noted. Users are recommended to take the following installation orders :

3-1 Open up the Suport CD and choose Drivers and Utilities
3-2 Intel Chipset Software Installation Utility (INF Utility)
3-3 Intel Application Accelerator (IAA)
3-4 AC'97 Audio Drivers Installation
3-5 Hardware Monitor Utility

3-1 Open up the Support CD and choose Drivers and Utilities

1 Please put the Support CD enclosed in your mainboard package into the CD-ROM drive. In a few seconds, the Main Menu will automatically appear, displaying the contents to be installed for this series:

Intel Chipset Software Installation Utility (INF Utility)
Intel Application Accelerator (IAA)
AC'97 Drivers Installation
Hardware Monitor Utility
Install Acrobat Reader
Browse CD-ROM
Exit

2 In case your system does not open the Support CD automatically, please click to the following path to enter the Main Installation Menu:

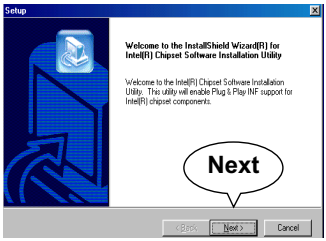
D:\ Autorun.exe (assuming that your CD-ROM Drive is Drive D)

3 Users are recommended to install all the drivers and utilities at a time, though they can be installed separately.
Also, we should take "Intel Chipset Software installation Utility" as first installation priority to optimize the Intel system.
From next section, we provide detailed descriptions of all these installations with graphical illustrations.

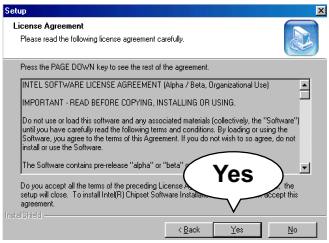
3-2 Install "Intel Chipset Software Installation Utility"

1 Following the procedures of opening the Support CD, click to " Install Intel Chipset software installation Utility" to proceed.

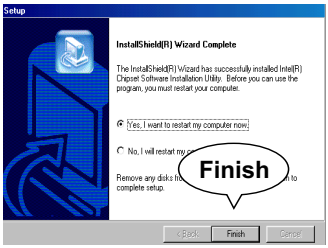
2 The Intel Service Pack InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press **"Next"** button to continue.



3 **"Intel Software License Agreement"** screen will appear, please click the **"Yes"** button to agree with the Licence Agreement and continue.



4 After all the setup process is finished, please restart your computer by clicking on "Finish" so as to take the Utility into effect.

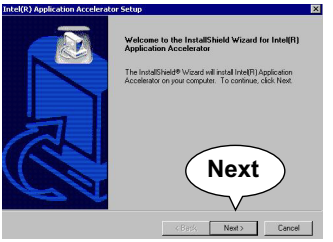


3-3 Install "Intel Application Accelerator"

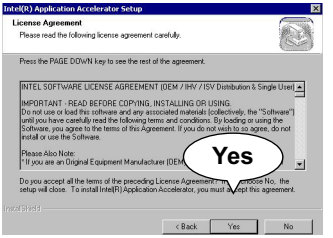
IAA supports all Windows 98/98se/Mellennium/NT4/2000/XP with Pentium III / 4 processor. Installations of this software for these operating systems are similarly programed to an auto-run mode, and it is typically designed to improve performance of the storage sub-system and overall system performance.
Below is a model installation on Windows 98. Users of Windows Me/ NT4/2000/XP can also follow this example for IAA installation.

1 Following the procedures of opening the Support CD, click to " Intel Application Accelerator" to proceed.

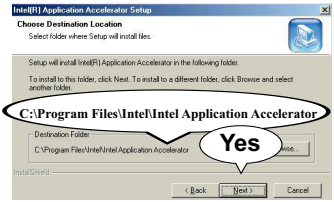
2 On the "InstallShield Wizard" screen, Click on "Next" to continue.



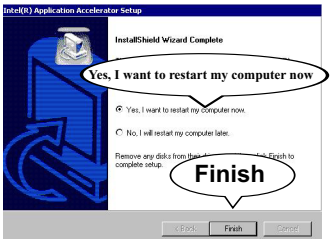
3 On the "Licence Agreement" screen, click on "Yes" to continue.



4 On "Choose Destination Location" screen, press **"Yes"** to continue.



5 On "InstallShield Wizard Com-plete" screen, choose "Yes, I want to restart my computer now" and press "finish" to restart. Remember you must restart computer to put setup into effect.

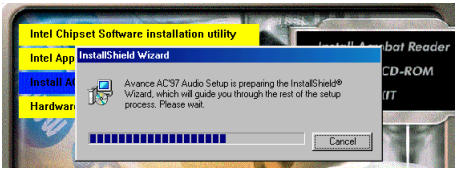


3-4 AC'97 Audio Driver Installation

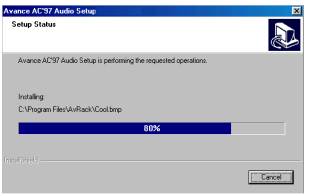
AC'97 Codec is integrated in Chip ALC201A. You can install " AC'97 Audio Driver" on this mainboard.

1 Following the procedures of opening the Support CD, click to " AC'97 Audio Driver" to proceed.

2 Instantly, the "InstallShield Wizard" screen appears to guide you through the "Avance AC'97 Audio Setup".



3 Instantly, the Setup Program proceeds to install the AC'97 Driver into system. If you want to stop setup, click the "Cancel" button.



4 After the setup process is finished, please check the radial button "Yes. I want to restart my computer now" and click "OK" to restart your system.

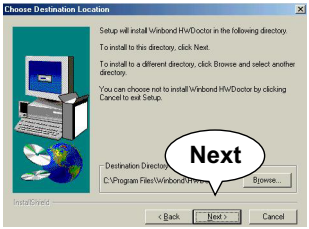
3-5 Install Hardware Monitor Utility

3-5.1 Installation

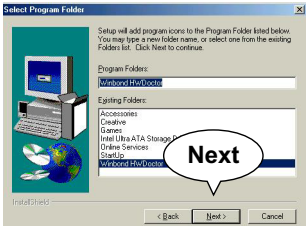
Hardware Monitor is built on this mainboard. Its installation is programed to a fully automated mode on Windows 9X/Me/NT4/2000/XP. User can follow the model installation below for its installation on various Windows System.

1 Following the procedures of opening the Support CD, click to " Hardware Monitor Utility" to proceed.

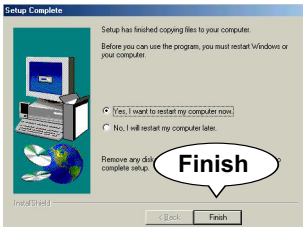
2 With the help of InstallShield Wizard, installation program automatically opens the "Choose Destination Location" screen. Click "Next to continue.



3 Select the Program folder and click "Next" to continue.

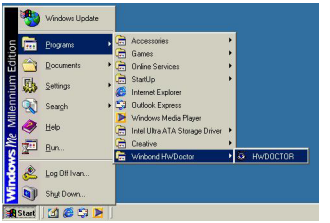


4 On the "Setup complete" screen, click "Finish" to restart your computer so that the Utility can be put into effect.

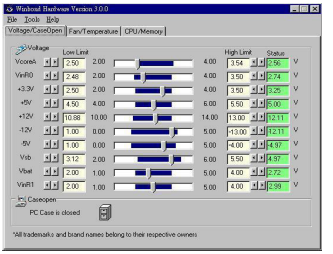


3-5.2 Verification

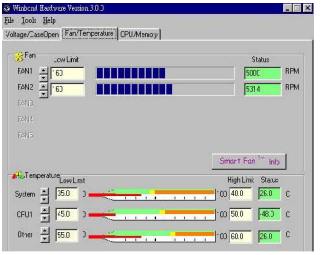
1 After restarting your computer, click "Start" and choose the path Programs \Winbond\Hwdoctor to open the main window of the Hardware Doctor.



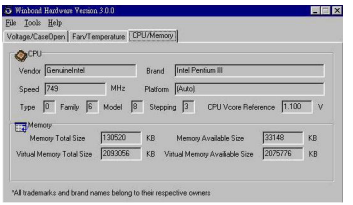
2 The "Voltage/CaseOpen" window is for CPU voltage and temperature information.



3 The "Fan/Temperature" window is for Fan speed and temperature information.



4 The "CPU/Memory" window is for Processor and memory information.



MEMO

Chapter 4 AMI BIOS Setup

THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory (ROM) chip Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

This Chapter includes the following topics :

4-1 About BIOS Setup
4-2 To run BIOS Setup
4-3 About CMOS
4-4 The POST (Power On Self Test)
4-5 To update BIOS
4-6 BIOS Setup

4-1 About BIOS Setup

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

4-2 To run BIOS Setup

First access BIOS setup menu by pressing < DEL > key after "POST" is complete (before OS is loaded). BIOS will then display the following message:

```
DEL:SETUP
```

4-3 About CMOS

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and do some proper settings in BIOS Setup.

4-4 The POST (Power On Self Test)

POST is an acronym for Power On Self Test. This program will test all events the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

4-5 To Update BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Update Utility can also be run from a hard disk drive or a network drive.

- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (AMIXXX.EXE)to a bootable floppy disk so that you can reinstall the BIOS when in need.

- Normally, to update BIOS is unnecessary if the system is working fine. Users should only update BIOS when incompatible problems are encountered or new features have to be added to system.

- "AMIFLASH.EXE" is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in ***DOS environment, the utility can not be executed in win95/98, ME, NT WINDOWS 2000 or Windows XP environment.***

• Please follow the steps below for updating the system BIOS:

Step 1. Please visit the board maker's website, download latest BIOS file and AMI update utility. The file name of AMI update utility will be "AMIXXX.EXE" of which " XXX " stands for the version number of the file. The BIOS file format will be *.ROM, of which " * " stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and AMI flash utility "AMIXXX.EXE" into the diskette.

Step 3. Insert the diskette into drive A, boot your system from the diskette.

Step 4. Under " A " prompt, type **" AMIXXX.EXE *.ROM "** and then press <Enter> to run BIOS update program. Please note that there should be a space between AMIXXX.EXE and *.ROM. (*.ROM depends on your mainboard model and version code. Instead of typing "*", you should type the specific file name for your specific mainboard).

Step 5. When the message "Flash ROM Update Completed - Pass." appears, please restart your system.

Step 6. You will see a message "CMOS Memory Size Wrong" during booting the system. Press <Del> or <F1> to run CMOS setup utility, then reload "LOAD SETUP DEFAULTS" or **"Load Optimal Defaults"** and save this change.

4-6 BIOS SETUP --- CMOS Setup Utility

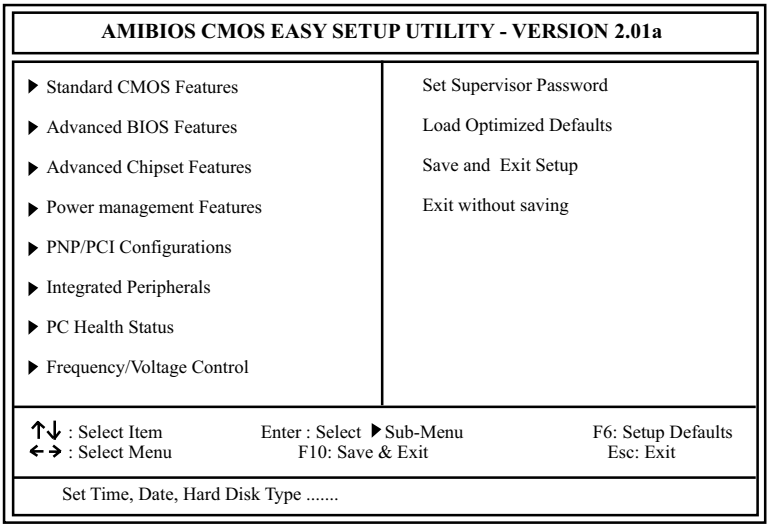
4-6.1 CMOS Setup Utility

This mainboard comes with the AMI BIOS from American Megatrends Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

PRESS <Del> TO RUN SETUP

2. Press the <Del> key and the main program screen will appear as follows.



3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, “Save & Exit Setup” saves your changes and reboots the system, and “Exit Without Saving” ignores your changes and exits the program.

4-6.2 Standard CMOS Setup

Standard CMOS Setup records some basic system hardware configuration and sets the system clock and error handling. You only need to modify the configuration values of this option if you want to change your system hardware configuration or when the data stored in the CMOS memory gets lost or damaged.

Run the Standard CMOS Setup as follows:

1. Choose “Standard CMOS Setup” from the Main Menu and a screen with a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Standard CMOS Features		Setup Help
System Time	00 19 29	
System Date	Dec 05 2001 Wed	
Floppy Drive A	1.44M, 3.5 in.	
Floppy Drive B	Not Installed	
▶ Primary IDE Master	Maxtor 20560 A4	
▶ Primary Slave	Not Installed	
▶ Secondary Master	Not installed	
▶ Secondary Slave	Not Installed	

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

System Time The BIOS shows the time of the day in the format: hh:mm:ss. Choose the field with the Arrow keys and change the time with the Page Up/Page Down keys.

System Date The BIOS shows the date of the day in the format: mm:dd:yy :day of the Week. Choose the field with the Arrow keys and change the value with the Page Up/Page Down keys.

Floppy Drive A / Floppy Drive B Select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are:
360KB, 5.25 in.
1.2MB, 5.25 in.
720KB, 3.5 in.
1.44MB, 3.5 in.
2.88MB, 3.5 in.
Not Installed

Primary/Secondary IDE Master/Slave Press Enter on any one of these four items will reveal the following submenu for your configuration of the hard Disk you have installed:

Primary IDE Master :Maxtor 82560 A4		Setup Help
Type	Auto	
Cylinders	4962	
Heads	16	
Write Precompensation		
Sectors	63	
Maxium Capacity	2561 Mb	
LBA Mode	On	
Black Mode	On	
Fast Programmed I/O Modes	4	
32 Bit Transfer Mode	On	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

Type This option shows the types of configuration for the IDE devices:

1-50: Predefined types
USER: set Parameters by User
Auto: Set parameters automatically
CD-ROM: Use for ATAPI CD-ROM drives

Double click [Auto] to set all HDD parameters automatically, including “Cylinders, Heads, Write Precompensation, Sectors, Maximum Capacity and 32 Bit Transfer Mode.

4-6.3 Advanced BIOS Features

Advanced BIOS Features improves your system performance or sets up system features according to your preference.

Run the Advanced BIOS Features as follows:

1. Choose “Advanced BIOS Features” from the Main Menu and a screen with a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Advanced BIOS Features		Setup Help
Quick Boot	Enabled	
Delay for Hard Drive (Sec.)	2	
1st Boot Device	Floppy: 1.44 MB 3.5	
2nd Boot Device	CD-ROM	
3rd Boot Device	IDE-0 :Maxtor 20560 A4 -	
Try Other Boot Devices	Yes	
Initial Display Mode	Silent	
Display Mode at add-On ROM Init	Force BIOS	
S.M.A.R.T for Hard Disks	Disabled	
Bootup Num-lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	
L1 Cache	WriteBack	
L2 Cache	WriteBack	
System BIOS Cacheable	Enabled	
C000,32K Shadow	Cached	
C800,16K Shadow	Disabled	
CC00,16K Shadow	Disabled	
D000,16K Shadow	Disabled	
D400,16K Shadow	Disabled	
D800,16K Shadow	Disabled	
DC00,16K Shadow	Disabled	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide.

Quick Boot Allows you to Enable / disable quick boot of your system.

Delay for Hard Drive (Sec.) Allows you to set the delay time for hard drive access.
Choices: Disabled; 1~10 sec. (Default: 2)

1st/2nd/3rd Boot Device Allows you to set floppy or IDE devices already installed to be the 1st/2nd/3rd boot device.
Choises: Disabled; Device(s) installed

Try Other Boot Devices Allows you to enable/disable system to try to boot with other boot devices.
Choises: Yes; No

Initial Display Mode If option is “Silent”, the initial display mode will be set to one with Soltek logo. If option is “BIOS”, the normal BIOS display mode will be shown.
Choices: silent (default); BIOS

Display Mode at Add-On ROM Init If the item “Initial Display Mode” is set to “Silent”, two sub-modes are provided for the initial display mode. If “Force BIOS” is chosen, the vendor’s logo screen will be followed by the “Add-on ROM” initial screen (the screen showing the add-on card BIOS message). If “Keep Current” is chosen, no “Add-On ROM” screen is followed.

S.M.A.R.T. for Hard Disks Allows you to Enable / disable the Self Monitoring Analysis and Reporting Technology for the hard Disk.
Choices: Enabled; Disabled

BootUp Num-Lock Allows you to Toggle between On or Off to control the state of the NumLock key when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.

Floppy Drive Swap When enabled, floppy drives A and B will be exchanging without any physical connection and modification on the cables.

Floppy Drive Seek When enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks.

Primary Display Allows you to choose the primary display for the system. Choices: VGA/EGA (default); CGA40x25; CGA80x25; Mono; Absent

Password Check Allows you to set BIOS to check up password with a password prompt at BIOS Setup or whenever restarting system.
Choices: Setup; Always

Boot to OS/2 Allows you to set your system to OS/2 operating system.
Choices: Yes; No (default)

Internal /External Cache Allows you to set the Internal/External Cache Mode. Choices: WriteBack (default); WriteThru; Disabled

System BIOS Cacheable Allows you to Enable / disable the System BIOS Cacheable function.

C000, 32K Shadow Allows you to set these addresses cached, Enabled or Disabled. Default: Cached

C800,CC00,D000,D400, D800,DC00 16K Shadow Allows you to set these addresses cached, Enabled or Disabled. Default: Disabled

4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:

1. Choose “Advanced Chipset Features” from the Main Menu and a list of option will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Advanced Chipset Features		Setup Help
DRAM Timing		
SDRAM Frequency	Auto	
Configure SDRAM timing by SPD	Disabled	
SDRAM CAS# Latency	2.5 Clocks	
SDRAM RAS# Precharge	3 Clocks	
SDRAM RAS# to CAS# Delay	3 Clocks	
SDRAM Precharge Delay	7 Clocks	
SDRAM Read Thermal Management	Disabled	
DRAM Integrity Mode	Disabled	
Memory Hole	Disabled	
APIC interrupt Mode	Disabled	
AGP Aperture Size	64MB	
USB Controller	6 USB Ports	
USB 1.1 Device Legacy Support	Disabled	
Port 64/60 Emulation	Disabled	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

SDRAM Frequency Allows you to set the SDRAM frequency.
Choices: Auto; 200MHz; 266MHz

Configure SDRAM Timing by SPD SPD (Serial presence detect) is a device in memory module for storing the module information such as DRAM timing and chip parameters. If this option is enabled, BIOS will access SPD automatically to configure module timing. If disabled, DRAM timing can be configured manually.

SDRAM CAS# Latency With SDRAM Timing by SPD disabled, you can select the SDRAM CAS# (Column Address Strode)latency manually.
Choices: 2Clocks; 2.5 Clocks

SDRAM RAS# Precharge With SDRAM Timing by SPD disabled, you can select the SDRAM RAS# (Row Address Strode) Precharge cycle manually.
Choices: 2Clocks; 3 Clocks

SDRAM RAS# to CAS# Delay With SDRAM Timing by SPD disabled, you can select the SDRAM RAS# to CAS# delay cycle manually.
Choices: 2Clocks; 3 Clocks

SDRAM Precharge Delay With SDRAM Timing by SPD disabled, you can select the SDRAM Precharge Delay cycle manually.
Choices: 7Clocks; 6Clocks; 5 Clocks

SDRAM Read Thermal Management Allows you to enable / disable the SDRAM Read Thermal function.

DRAM Integrity Mode Allows you to enable / disable the DRAM ECC function. For DRAM not supporting ECC, this function should be disabled.

Memory Hole Allows you to enabled / disabled (default) the support of Memory Hole which is reserved for ISA card.

APIC Interrupt Mode Allows you to enable / disable (default) the APIC function for selecting the APIC interrupt Mode.

AGP Aperture Size Allows you to set the AGP Aperture Size.
Choices: 4MB; 8MB; 16MB; 32MB; 64MB; 128MB; 256MB;

USB Controller Allows you to set the USB Controller on the USB port(s).
Choices: All USB; USB Port 0&1;
USB Port 2&3; disabled

USB 1.1 Device Legacy Support Allows you to select the USB Device Legacy support.
Choices: No Mice; all Devices; Disabled

Port 64/60 Emulation Allows you to enable / disable (default) the USB Port trap 64/60 Emulation.

4-6.5 Power Management Setup

Power Management Setup allows you to set the system's power saving functions.

Run the Power Management Setup as follows:

1. Choose "Power Management Setup" from the Main Menu and a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Power Management Features		Setup Help
ACPI Standby State	S1/POS	
Power Management/APM	Enabled	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Power Button Function	On/Off	
Restore on AC/Power Loss	Last State	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

ACPI Standby State This item allows you to select the ACPI Suspend type. You can select S3(Suspend to RAM STR) for suspending to DRAM if your system supports this mode. Or you can select S1 (POS) for Power on Suspend under Windows 98 ACPI mode..

Power Management/ APM Allows you to enable / disable the Power management / Advanced Power Management function.

Video Power Down Mode Allows you to select the Video Power Down Mode. Choices: Disabled; Standby; Suspend

Hard Disk Power Down Mode Allows you to select the Hard Disk Power Down Mode.
Choices; Disabled; Standby; Suspend

Standby Time Out (Minute) To set the duration of Standby Time Out.
Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

Suspend Time Out (Minute) To set the duration of Suspend Time Out.
Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

Power Button Function allows you to set power Button function.
Choices: On/Off; Suspend

Restore on AC/Power Loss Allows you to set the restore state from AC/Power Loss.
Choices: Last State; Power Off; Power On

Resume on Ring Allows you to enable / disable the Resume on Ring Signal function. An input signal on the serial Ring Indicator (RI) Line awakens the system from a soft off state.

Resume On RTC Alarm Allows you to enable / disable the Resume On RTC Alarm function.

RTC Alarm Date / Hour / Minute / Second If Resume On RTC Alarm is enabled, this field allows you to set Alarm Date, Hour, Minute, Second.
Date Choices: Every Day; 01 ~ 31;
Hour Choices: 00 ~ 23; Minute Choices: 00 ~ 59
Second Choices: 00 ~ 59

4-6.6 PNP / PCI Configuration

PNP/PCI Configuration allows you to modify the system's power saving functions.

Run the PNP/PCI Configuration as follows:

1. Choose "PNP/PCI Configuration" from the Main Menu and a screen with a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

PNP/PCI Configurations		Setup Help
Plug and Play Aware O/S	No	
PCI Latency Timer (PCI Clocks)	32	
Primary Graphics Adapter	AGP	
PCI IDE BusMaster	Enabled	
PCI Slot1IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ priority	Auto	
PCI Slot5 IRQ Priority	Auto	
PCI Slot6 IRQ Priority	Auto	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

Plug & Play Aware O/S Select Yes for Windows systems supporting Plug and Play function. Select No for systems not supporting PNP.

PCI Latency Timer (PCI Clocks) Allows you to set the PCI Latency Time.
Choices: 32; 64; 96; 192; 128; 160; 192; 224; 248;

Primary Graphics Adaptor Allows you to set the Primary Graphics Adaptor.
Choices: AGP (default); PCI

PCI IDE BusMaster Allows you to Enable / Disable the PCI IDE Bus Master.

PCI Slot1/2/3/4/5/6 IRQ Priority Allows you to set 6 specific IRQ priority for the PCI slots.
Choices: Auto; 3; 4; 5; 7; 9; 10; 11

4-6.7 Integrated Peripherals

Integrated Peripherals option allows you to get some information inside your system when it is working.

Run the Integrated Peripherals as follows:

1. Choose “Integrated peripherals” from the Main Menu and a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Integrated Peripherals		Setup Help
Onboard IDE	Both	
Onboard AC’97 Audio	Enabled	
Onboard MC’97 Modem	Disabled	
Onboard FDC	Auto	
Onboard Serial Port A	Auto	
Onboard Serial Port B	Auto	
Serial Port B Mode	Normal	
IR Duplex Mode	Half Duplex	
IR Pin Select	IRRX/IRTX	
Onboard Parallel Port	Auto	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	Auto	
Onboard MIDI Port	Disabled	
MIDI IRQ Select	5	
Onboard Game Port	200	
PS/2 K/B PowerOn Function	Disabled	
Specific Key for PowerOn	N/A	
PS/2 Mouse PowerOn Function	Disabled	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

Onboard IDE Allows you to choose the Onboard IDE Mode.
Choices: Disabled; Primary; Secondary; Both

OnBoard AC'97 Audio Allows you to enable / disable onboard AC'97 Audio.
Choices: Auto; Disabled

Onboard MC'97 Modem Allows you to enable / disable the Onboard MC'97 Modem.
The choices: Auto; Disabled

OnBoard FDC Allows you to enable / disable the Onboard FDC.
Choices: Auto; Enabled; disabled

Onboard Serial Port 1 Allows you to set the Onboard Serial Port A.
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2; 3E8/COM3; 2E8/COM4;

Onboard Serial Port 2 Allows you to set the Onboard Serial Port B.
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2; 3E8/COM3; 2E8/COM4;

Serial Port 2 Mode Allows you to set the Serial Port B Mode.
Choices: Normal; 1.6 uS; 3/16 Baud; ASKIR;

OnBoard Parallel Port Allows you to configure onboard Parallel port .
Choices: auto; Disabled; 378; 278; 3BC;

Parallel Port Mode If Parallel Port is not disabled, this item allows you to configure parallel port mode.
Choices: ECP; EPP + ECP; Normal; EPP

Parallel Port IRQ If Parallel Port Mode is set at EPP, this item allows you to set the Parallel Port IRQ.
Choices: 5; 7

Parallel Port DMA Channel If Parallel Port Mode is set at ECP, this item allows you to set the DMA Channel.
Choices: 0; 1; 3

OnBoard MIDI Port Allows you to configure onboard MIDI port address. The choices: Disabled; 300h; 330h

MIDI IRQ Select If the onboard MIDI port is set at 300h or 330h, this item shows up to allow you to configure the MIDI Port IRQ to IRQ 5.

OnBoard Game Port Allows you to configure Onboard Game port address.
The choices: Disabled; 200h; 208h

PS/2 Keyboard Power On Function Allows you to configure the Keyboard PowerOn Function.
Choices: Disabled; By Stroke Key; By Password.

Specific Keys for PowerOn If Keyboard PowerOn function is set at "Specific Key", this item shows up to allow you to key in a password for system power on.

PS/2 Mouse PowerOn Function Allows you to disable or use the PS/2 mouse to power on system..
choices: Disabled; Enabled

4-6.8 Hardware Monitor Status

This menu helps you to read only and get more information on the working CPU temperature, FAN speed and voltage.

1. Choose “Hardware Monitor Status” from the Main Menu and a screen with a list of current status of your working system will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Hardware Monitor Status		Setup Help
CPU1 Temperature	( )	
CPU2 Temperature	( )	
System Temperature	( )	
CPU Fan Speed	( )	
Case Fan Speed	( )	
Power Fan Speed	( )	
Vcore	( )	
+3.3V	( )	
+5.000V	( )	
-5.000V	( )	
+12.000V	( )	
-12.000V	( )	
Battery	( )	
+5V SB	( )	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Press <ESC> to return to the Main Menu. in case any irregular reading appears about your system, it indicates that a problem exists therein. To solve the problem, a hardware professional or your dealer is recommended.

CPU1Temperature Shows current temperature of the CPU body.

CPU 2 Temperature Shows current temperature round the CPU.

System Temperature Shows current system temperature.

CPU Fan Speed Displays the current speed of CPU Fan.

Case Fan Speed Shows current Case Fan Speed.

Power Fan Speed Shows current Power Fan Speed.

Vcore Shows CPU core actual voltage value.

+3.3V/+5.00V/-5.00V/ +12.00V /-12.00V Shows current voltage against the respective power supply voltage.

Battery Shows current voltage against battery power.

+5V SB Shows current voltage against the +5V SB(Standby) power supply.

4-6.9 Frequency/Voltage Control

Run the “Frequency/Voltage Control” as following:

1. Choose “Frequency/Voltage Control” from the Main Menu and a screen with a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 2.01a

Frequency/Voltage Control		Setup Help
Redstorm Overclocking Tech (optional)	Press Enter	
CPU Linear Freq	Disabled	
CPU Clock	100 MHz	
CPU Ratio Selection	Locked	
PCI Clock Auto Detection	Disabled	
Spread Spectrum Selection	Disabled	

↑↓ : Select Item +/-: Change Value F6: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save & Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F6>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

(Optional) Redstorm Overclocking Tech Press <Enter> to start *RED STORM OVERCLOCKING TECH*. This option gives user an easy way to overclocking. It will increase CPU external clock automatically. When CPU external clock increases to an unacceptable value, BIOS will restart your system, then running at an acceptable CPU external clock.

CPU Linear Frequency This item allows you to enable / disable this setting function.

CPU Clock If CPU Linear Frequency is set at Enabled, this item allows you to set CPU Clock.
Choices: 100MHz ~200MHz in 1MHz stepping.

CPU Ratio Selection If CPU onboard is one with an adjustable CPU ration, this item allows you user to adjust the CPU Ratio.

PCI Clock Auto Detection Allows you to enable / disable this auto detection function.

Spread Spectrum Selection Allows you to enable / disable this Spread Speectrum Selection function.

4-6.10 Set Supervisor Password

This option allows you to set a Supervisor password for the system:

1. Choose “Set Supervisor Password” in the Main Menu and press <Enter>. Then the following message appears:

[Enter new supervisor password]

2. The first time you run this option, enter your password up to 8 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears prompting you to confirm the password:

[Retype new supervisor Password]

4. Enter the same password “exactly” the same as you have just typed to confirm the password and press <Enter>.

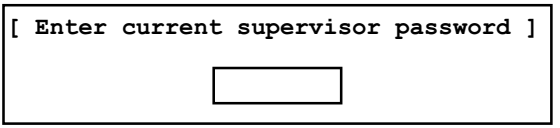
5. The following message appears to confirm the new password setup.

[New supervisor password installed]
Any Key to Continue

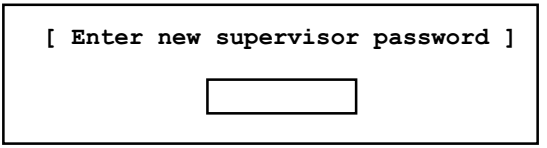
6. Then press any key to continue your CMOS Setup. To save the password setup, you should press “Save & Exit Setup” and choose “yes” to exit and save setup.

7. After the Supervisor password is set, you have to choose whether the password is for entering the system or only for entering BIOS Setup program. To make the choice, please enter BIOS Setup and choose “Advanced BIOS Features” in the main menu. (At entering BIOS Setup, you have to enter the password now.) In “Advanced BIOS Features”, choose “Password Check” and change the option. The “Setup” option is to set the password only for entering BIOS Setup. The “Always” option is to set the password for entering the system.

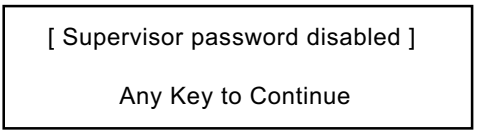
8. To change or remove a current supervisor password, choose “Set Supervisor Password” and press <Enter>. An instruction box appears on the screen, prompting you to enter the current password first:



9. Type the current password with keyboard and then press <Enter>. An instruction box appears, prompting you to enter new supervisor password:



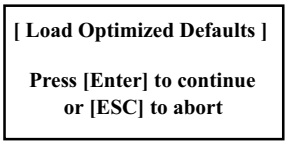
10. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor password. That means, no password is set for either entering BIOS Setup or system:



NOTE: If you forget or lose a supervisor password, the only way to access the system is to clear the CMOS. All setup informations will then be cleared including the password and you need to run the BIOS setup program again so as to reconfigure BIOS.

4-6.11 Load Optimized Defaults

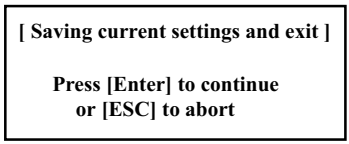
When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:



Press <Enter> now to load Optimal values for all the Setup options.

4-6.12 Save & Exit Setup

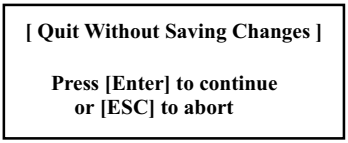
Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:



Press <Enter> key to save the configuration changes and exit CMOS Setup to restart your system.

4-6.13 Exit Without Saving

Exit Without Saving option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:



Follow the message and press <Enter> key to exit CMOS Setup and restart system.