Chapter 1 Specification

Introduction

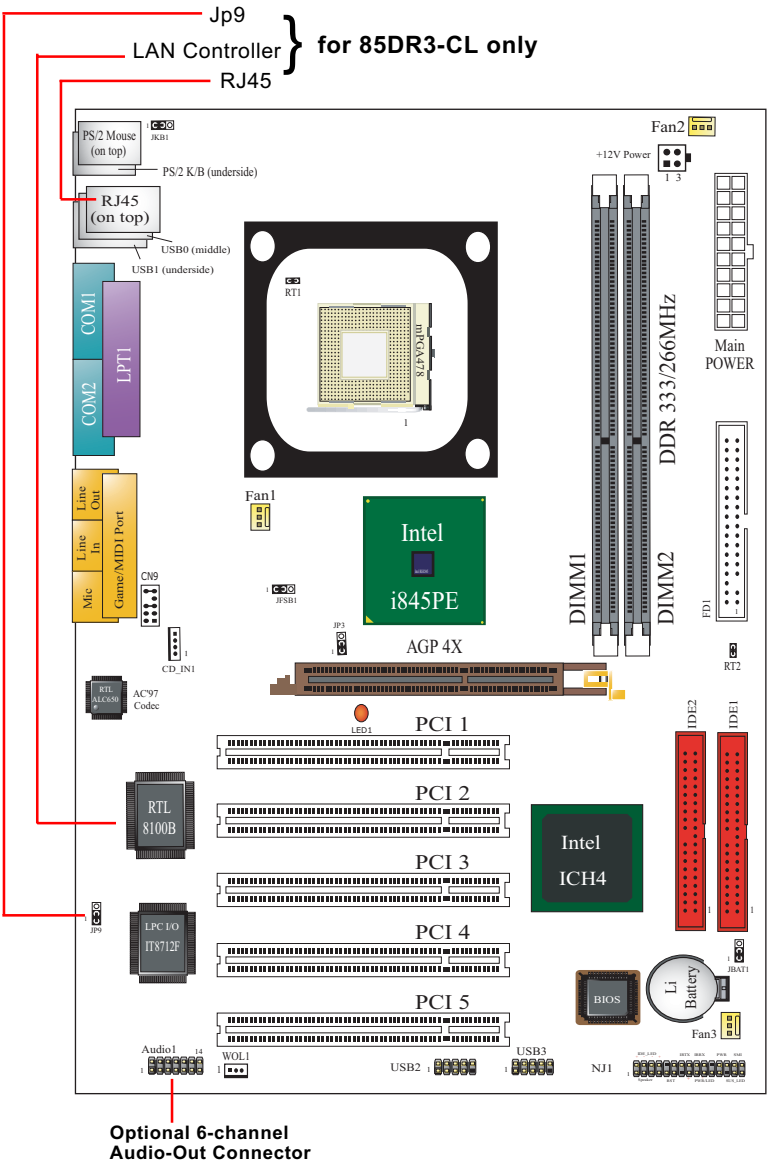
This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge Intel 845PE. The Intel P4 processor is a rapid execution engine providing 800/533/400MHz system bus, while North Bridge Intel 845PE is a high performance integrated chipset providing DDR333/266 DRAM memory interface, Hub interface, and AGP interface.

Integrated with i845PE, South Bridge Intel ICH4 supports the LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, USB 2.0 interface, AC'97 2.2 (6-channel) Audio interface and the interrupt control. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

**** If any difference is found between the mainboard description and the Mainboard you are using, please look up the Errata/Update Slip enclosed inside for the correction or updated information, or else contact the mainboard Dealer or visit our Web Site for the latest manual update.**

1-1 Mainboard Layout



1-2 Mainboard Specifications

1-2.1 CPU Socket

CPU Socket 478B on board, supporting Intel® Pentium 4 processors (including Intel Hyper-Threading CPUs) in 478-pin package for :

-- 800/533/400MHz System Bus;
-- Hyper-pipelined technology;
-- Advanced dynamic execution;
-- Advanced transfer cache;

1-2.2 System Chipsets

North Bridge Intel 845PE:

- A high performance integrated chipset providing processor interface, DDR 333/266 DRAM memory interface, Hub interface, AGP interface, as well as Hyper-Threading Technology.
- Showing Hyper-Threading Logo when booting with a Hyper-threading CPU installed.

South Bridge Intel ICH4:

- Supporting the LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, USB 2.0 interface, AC'97 2.2 (6-channel) Audio interface and the interrupt control.

1-2.3 Memory

2 DDR DIMM 184-pin slots on board for DDR 333/266 DRAMs :

- Supporting unregistered, non-ECC DDR 333/266 DRAM up to 2GBs
- Supporting installation of mixed volumes yet same type of DDR DRAM modules

1-2.4 AMI BIOS

Flash Memory for easy upgrade, supporting 800MHz FSB setup, Year 2000 compliant, and various hardware configuration in BIOS Setup (See Chapter 4 BIOS Setup):

- Standard CMOS Features(Times, Date, Hard Disk Type etc.)
- Advanced BIOS Features (Virus Protection, Boot Sequence etc.)
- Advanced Chipset Features (AT Clock, DRAM Timing etc.)
- Power Management Features (Sleep Timer, Suspend Timer etc.)
- PNP/PCI Configurations (IRQ Settings, Latency Timers etc.)
- Integrated Peripherals (Onboard IO, IRQ, DMA Assign. etc.)
- Hardware Monitor Status (CPU/System Temp., Fan speed etc.)
- Frequency/Voltage (CPU clock, Voltage of CPU, DIMM, AGP etc.)

1-2.5 Accelerated Graphics Port (AGP) Interface

AGP Controller embedded on board, supporting:

- 1.5V(4X) power mode only
- 4x AD and SBA signaling, AGP pipelined split-transaction longburst transfers up to 1GB/sec.
- AGP 4X only, AGP V2.0 compliant

1-2.6 Advanced System Power Management

- ACPI 1.0B compliant (Advanced Configuration and Power Interface), including ACPI suspend mode support (See Power Management of BIOS Setup)
- APM V1.2 compliant (Legacy Power Management)
- PS/2 Keyboard / Mouse Power On
- Supporting Wake-on-LAN
- Real Time Clock (RTC) with date alarm, month alarm, and century field

1-2.7 Multi-I/O Functions :

- PCI EIDE Controller, supporting:
  -- 2x UATA100/66/33 IDE connectors supporting up to 4 IDE devices
- Dedicated IR Functions:
  -- 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 Data Transfer:
  -- Standard mode, high speed mode ECP and enhanced mode EPP
- Floppy Disk Connector:
  -- One FDD connector supporting 2 floppy drives with drive swap support
- Universal Serial Bus Transfer Mode:
  -- USB V2.0 compliant; 480Mb/s USB Bus, supporting Win 2000 or later operating system
  -- USB drivers provided in Support CD for installation
  -- 2 built-in USB connectors and 2 USB Headers (USB2, USB3) which require 2 optional USB cables to provide 4 more optional USB ports
- PS/2 Keyboard and PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
  -- Two complete serial ports (COM1 & COM2) on board

1-2.8 Expansion Slots

- 5 PCI Bus Master slots
- 1 AGP 4X slot
- 2 DDR DIMM slots

1-2.9 LAN on board (for 85DR3-CL only)

PCI local bus single-chip Fast Ethernet Controller RTL8100B on board:

- Supporting 10/100Mb data transfer
- Supporting Wake On LAN function through the on-board RJ45 LAN Connector
- LAN Driver enclosed in Support CD for user's installation.

1-2.10 Hardware Monitor on board

- Hardware Monitor supported by IT8712F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software Soltek Hardware Monitor for displaying system status is enclosed in Support CD for user's installation.

1-2.11 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board

- Supporting 6 channels of PCM audio output
- 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Subwoofer for complete surround sound effect
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-2.12 6-channel Audio-out Support (optional)

- This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, a 6-channel Audio-out card will be enclosed in the Mainboard package to provide 3 additional audio-out ports for the 6-channel sound.

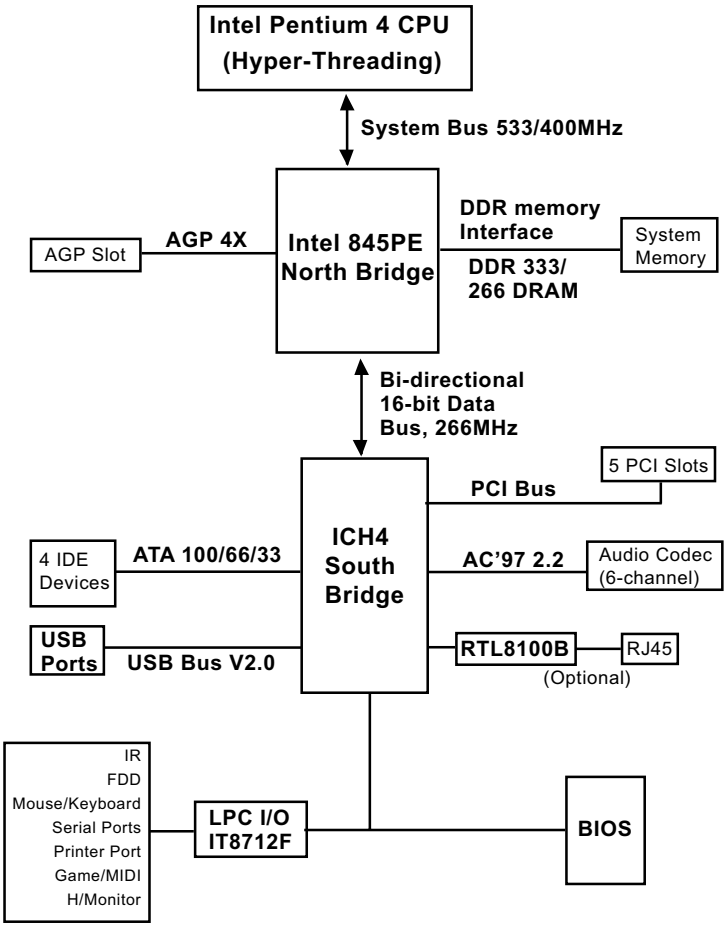
1-2.13 Form Factor

- ATX Form Factor, ATX Power Supplier, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector.
- Mainboard size: 305mm x 190mm

1-3 Mainboard Specification Table

85DR3-C/85DR3-CL Specifications and Features		
CPU	Socket 478B for P4 CPU (HT CPU included)	
North Bridge	Intel 845PE, supporting 533/400MHz FSB	
South Bridge	Intel ICH4	
BIOS	AMI BIOS, supporting 800MHz FSB setup	
Memory	Supporting DDR 333/266 DRAM, up to 2GB in two DDR DIMM slots	
I/O Chip	IT8712F, with Hardware Monitor	
AGP interface	AGP 4X mode only	
Audio	AC'97 Audio 2.2 compliant, 6 channel audio	
IDE Interface	2 UATA 66/100 IDE ports	
PCI Slots	5 PCI Master slots on board	
I/O Connectors	6 USB V2.0, 1 FDD port, 2 COM ports, 1 LPT, 1 IrDA, 1 PS/2 K/B, 1 PS/2 Mouse	
Networking	LAN Controller RTL8100B and Connector RJ45 (for 85DR3-CL only)	
Other common features	BIOS Writing Protection Keyboard/Mouse Power On ATX 2.03 Power Supply ATX Form Factor	
Models / Optional Features	85DR3-C	85DR3-CL
LAN Controller on board	No	Yes

1-4 Chipset System Block Diagram



Pentium 4 + Intel 845PE + Intel ICH4 Diagram

Chapter 2 Hardware Setup

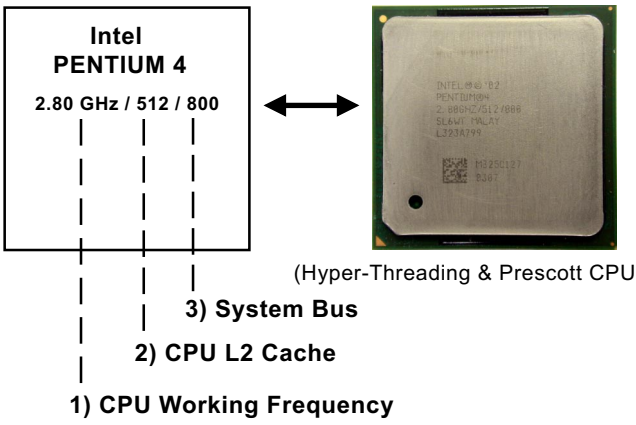
To Get Things Ready for Hardware Setup !

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

The following topics are included in this chapter:

2-1 CPU Installation with Socket 478B

2-1.1 To Identify a Pentium 4 CPU



On the heatsink side of a Pentium 4 CPU, there printed a line of figures to identify its specifications. The line consists of 4 parts:

1. CPU Working Frequency: this part depicts the working frequency of the CPU. The Intel P4 processor with three differeent System Bus mode provides a variety of speeds ranging from 2A Ghz to 3.2Ghz.
   400MHz System Bus: 2.60, 2.50, 2.40, 2.20, 2A GHz
   533MHz System Bus: 3.06, 2.80, 2.66, 2.53, 2.40, 2.26 GHz
   800MHz System Bus: 3.20, 3, 2.80C, 2.60C, 2.40C GHz

2. CPU L2 Cache: this part depicts the L2 Cache size. For example, 512 stands for 512 KB L2 Cache; 256 stands for 256 KB L2 Cache

3. System Bus: this part depicts the System Bus (Front Side Bus) is provided by CPU clock x 4. For example,
   800MHz = 200MHz(CPU clock) x 4; 533MHz = 133MHz x 4
   400MHz = 100MHz x 4

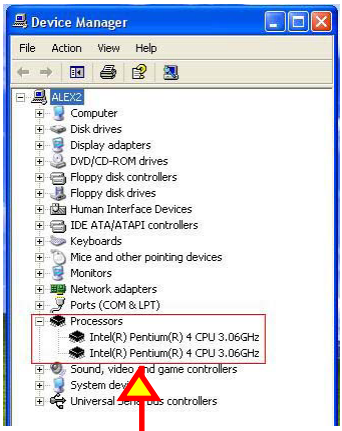
Note: System Bus vs CPU Clock
P4 CPU is a quad-pumped CPU. The system bus is provided by the CPU clock x 4. Therefore, users can figure out the P4 CPU clock by the System Bus divided by 4.

Pentium 4 with Hyper Threading Technology :
(1) P4 processors at 2.40C, 2.60C, 2.80C, 3, 3.20GHz with an advanced 800MHz system bus
(2) P4 processor at 3.06Ghz with 533MHz system bus

2-1.2 CPU Installation with Socket 478B

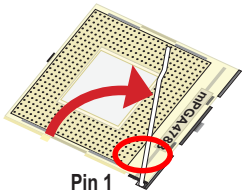
This mainboard is built with CPU Socket 478B (478-pin) supporting the Intel Pentium 4 CPU:

- 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 tandem with this CPU. This CPU Fan installation is described in next section.
- This mainboard supports Hyper-threading dual-in-one CPU, the function of which can be enabled by Windows XP. (See illustration on the right.)

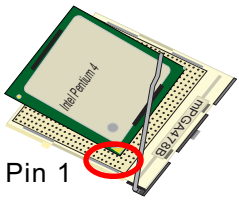


(If Hyper-threading CPU is installed successfully with O/S Win XP, the O/S will enable the dual-in-one CPU function.)

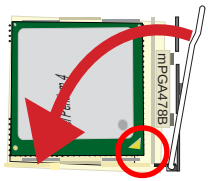
1. First pull sideways the lever of Socket 478, and then turn it up 90^0 so as to raise the upper layer of the socket from the lower platform.



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 get into the socket with ease.

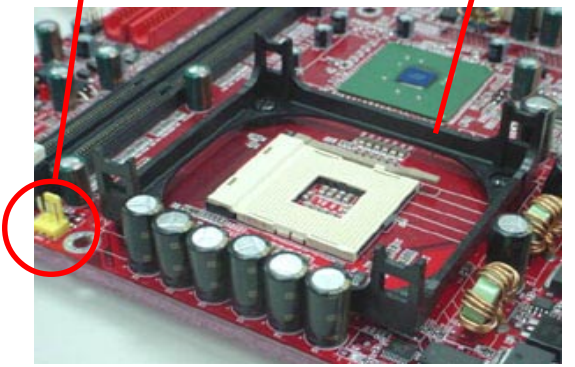


3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.

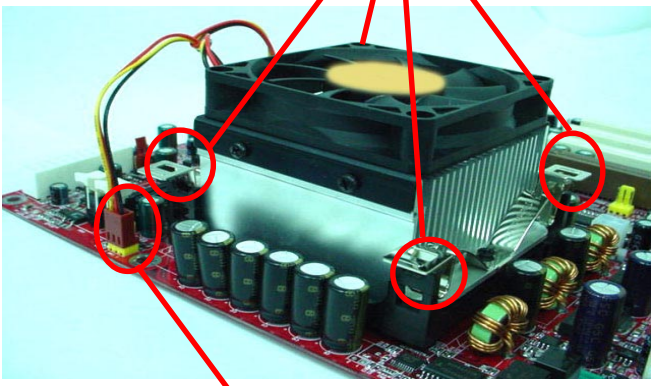


2-2 Pentium 4 CPU Fan Installation:

CPU Fan Connector Pentium 4 Fanbase



Press down 4 Spring Locks to lock fan to fanbase



Connect Fan Connector to CPU FAN connector

The above pictures are taken from sample mainboards as installation illustration. The layout in the pictures may be different from your mainboard.

2-3 Memory Installation

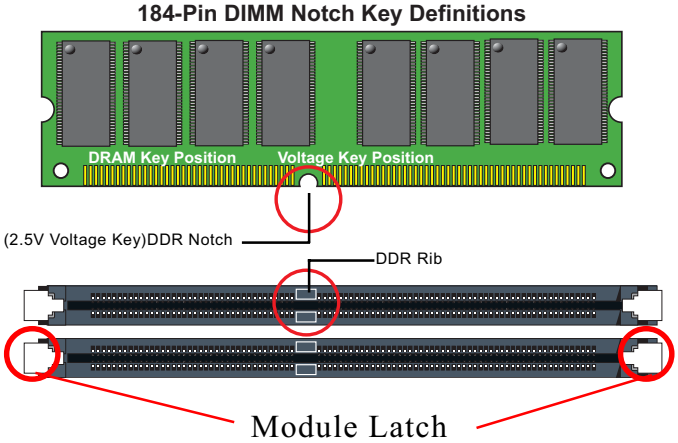
How to tackle the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM into a slot improperly will damage the memory module and slot itself.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DDR DRAM Module for this Series :

- This series only supports up to 2GB unbuffered DDR 333/266 DRAM, with 2 DDR DIMM slots on board. Do not insert other type of modules into these slots.

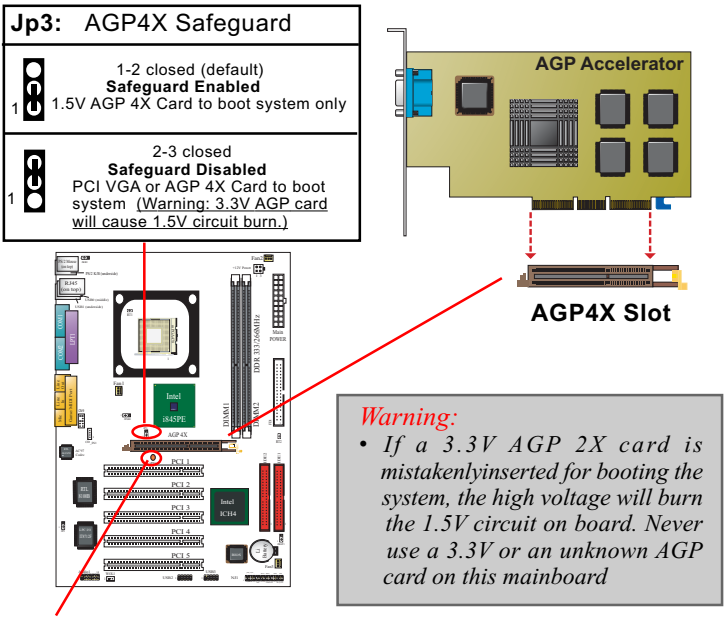
- DDR DIMM slot has 184-pins and one notch. Insert a DDR DRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches has not turned up completely, you should unplug the module and press it down a bit more firmly.



- To remove the DIMM, just press down the holding latches on both sides of a DIMM slot and the module will be released from it.

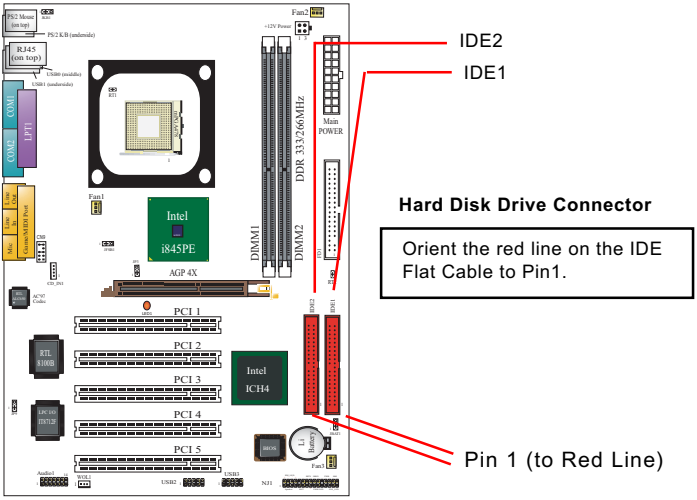
2-4 To Install AGP4X with LED & Jumper Safeguard

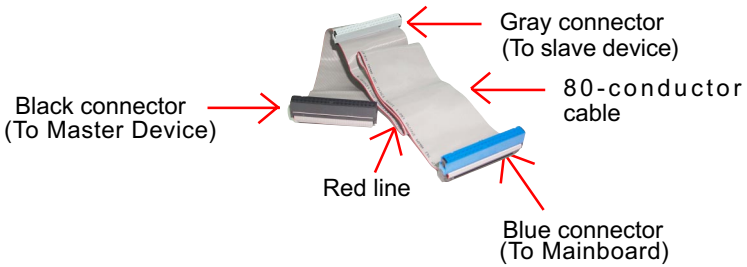
1. The AGP slot on board supports 1.5V AGP 4X card only. Any 3.3V AGP 2X card will burn the 1.5V circuitry. Jp3 is designed on board to safeguard the AGP slot against the 3.3V AGP 2X card.
2. Default setting of Jp3 1-2 closed is to enable the safeguard, allowing only 1.5V AGP 4X card to boot system. In this case, if user cannot boot with an AGP card inserted in AGP slot, it indicates that the AGP card is not a 1.5V type.
3. Setting Jp3 2-3 closed will disable the safeguard, allowing a PCI VGA card to boot system.
4. LED1 is a Warning LED. Whenever an AGP card is not inserted to the AGP slot, or if the card is not a correct one, LED1 will keep lighting up until a proper installation is done.



2-5 IDE Connector Installation

To install IDE Connector, you may connect the blue 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.

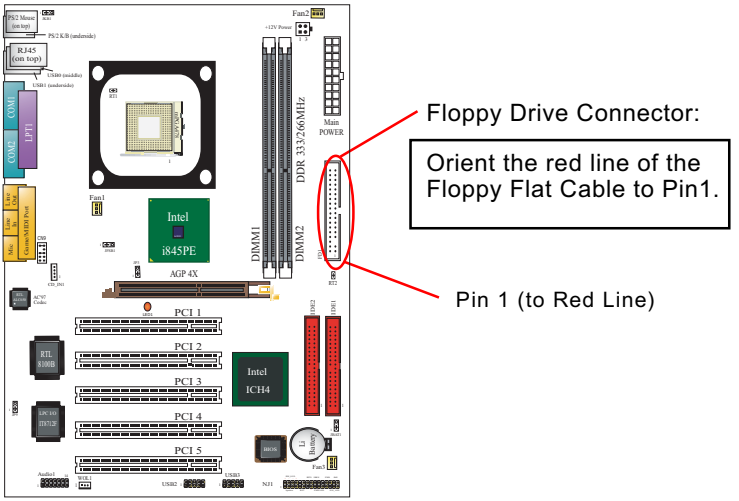


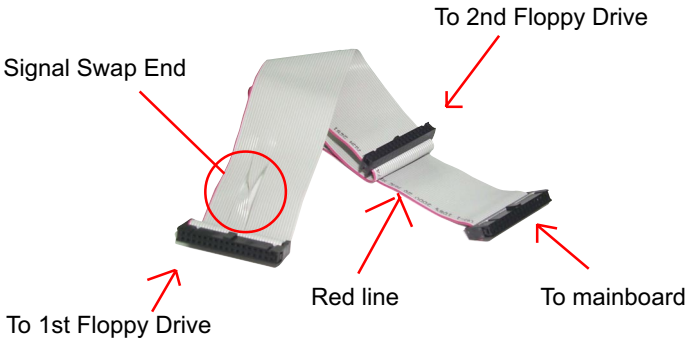


IDE Flat Cable

2-6 Floppy Drive Connector Installation

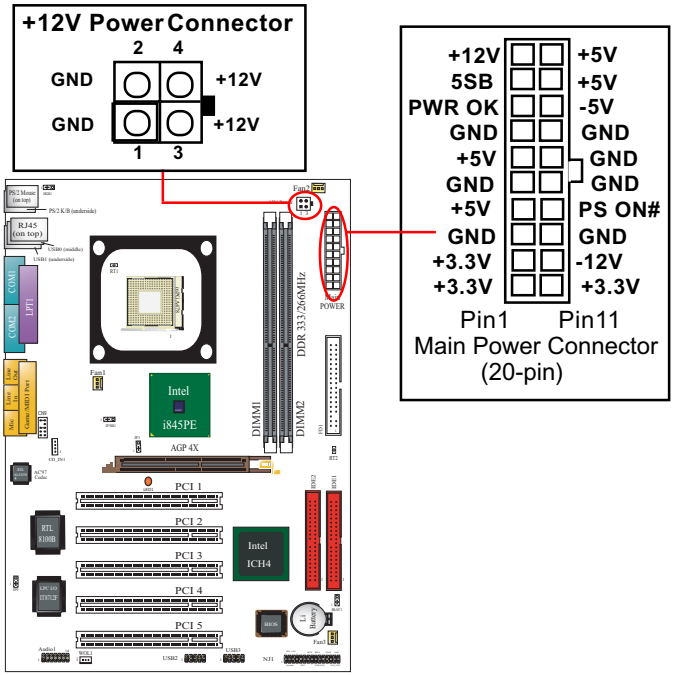
To install FDC, you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.





FDD Cable

2-7 ATX V2.03 Power Supplier Installation



ATX V2.03 Power Supplier is strongly recommended for mainboard running with 2GHz or higher CPU.

To set up Power Supply on this mainboard:

1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supplier which can be of the latest version 2.03 model, and then connect the square-shaped +12V Power Connector on board to the square-shaped +12V Power Connector of the Power Supplier.
   Warning: Both the Main Power Connector and the +12V Power Connector should be connected to Power Supplier; otherwise, the system may either not start or be damaged.
2. This ATX Power Supplier should be able to provide at least 720mA/ +5V standby power for Wake On Lan function.

2-8 Jumper Settings

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

JKB1:
PS/2 KB / Mouse Power On

1

1-2 closed (default)
PS/2 KB/Mouse Power On
Disabled

1

2-3 closed
PS/2 KB/Mouse Power On
Enabled

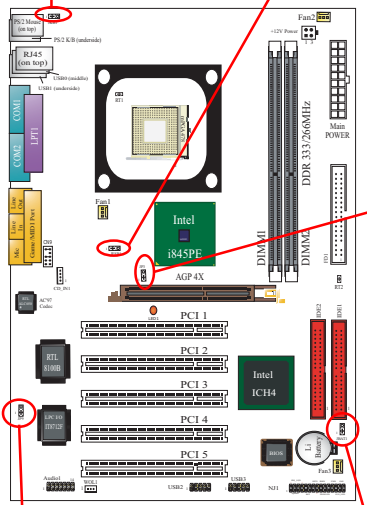
JFSB1:
CPU Clock Select

1

(default)
1-2 closed
CPU Auto Detect

1

2-3 closed
for 133MHz CPU
Clock (533MHz
FSB)



Jp3:
AGP 4X Safeguard

1

1-2 closed (default)
Safeguard Enabled
For 1.5V AGP 4X only; (Warning: 3.3V AGP 2X card will not boot system.)

1

2-3 closed
Safeguard Disabled
For PCI VGA to boot PC; (Warning: 3.3V AGP card will burn 1.5V circuitry.)

Jp9
LAN Controller Select
(85DR3-CL only)

1

1-2 closed (default)
LAN controller enabled

1

2-3 closed
LAN controller disabled

JBAT1
Clear CMOS

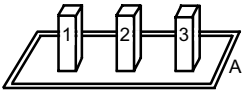
1

1-2 closed (default)
To hold data

1

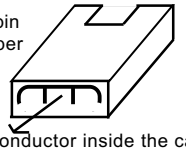
2-3 closed
To clear CMOS

How to tackle the Jumpers:



A 3-pin Jumper

If a pin-header (of 2 or more pins) is designed in such a way that its pins can be closed or linked together to set up a specific function, this header is called a jumper in this manual.



A 2-pin Jumper Cap

The conductor inside the cap links two header-pins together.

- A Jumper is usually but not necessarily given a "JpX" legend.
- In the Jumper setting diagram, the jumper pins covered with black marks stand for closed pins with jumper cap.

Jumper with Pin 2-3 closed | **Jumper with all pins open** | **Jumper with Pin 1-2 closed**

- Do not remove any jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, the mainboard will be damaged.

2-8.1 CPU Clock Select

JFSB1 is designed to select 100/133MHz CPU clock for the system. Setting JFSB1 to 1-2 closed will allow CPU on board to Auto Detect its own frequency and apply it to the System Bus.

Setting JFSB1 to 2-3 closed will manually configure a 100MHz CPU to 133MHz.

However, overclocking should always take the whole mainboard into account. There is no 100% guaranty of success. In case overclocking fails, system boot will fail. You should then take the Auto Detect setting to boot system. Even more, you should clear CMOS before rebooting system. (See JBAT 1 Clear CMOS).

JFSB1 **CPU Clock Select**
 (default) 1-2 closed CPU Auto Detect
 2-3 closed for 133MHz CPU Clock (533MHz FSB)

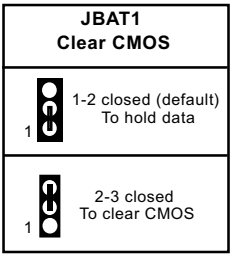
Further Notes on CPU Overclocking:

1. If you have successfully booted system, with or without CPU overclock, you still can try another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose “Frequency/Voltage Control” menu, and take the “Use Linear” option of the “Use CPU Linear Frequency”. Then configure the “CPU Clock” item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 and then restart your system. And remember to reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the PC case and simultaneously press down the “Insert” key on the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup instantly and choose “Load Optimized Defaults” to restore default BIOS .

2-8.2 Clear CMOS

When you have problems 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, restore the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default now. Remember never clear CMOS when system power is on.



2-8.3 AGP 4X Safeguard

1. The AGP slot on board supports 1.5V AGP 4X card only. Any 3.3V AGP 2X card will burn the 1.5V circuitry. Jp3 is designed on board to safeguard the AGP slot against the 3.3V AGP 2X card.
2. Default setting of Jp3 1-2 closed is to enable the safeguard, allowing 1.5V AGP 4X card to boot system only. In this case, if system cannot boot with an AGP card inserted in AGP slot, it indicates that the AGP card is not one of 1.5V types.

Jp3: AGP4X Safeguard	
 (default) **Safeguard Enabled** 1-2 closed for 1.5V AGP 4X only; (Warning: 3.3V AGP 2X card will not boot system.)	
 **Safeguard Disabled** 2-3 closed for PCI VGA to boot PC; (Warning: 3.3V AGP card will burn 1.5V circuitry.)	

3. Setting Jp3 2-3 closed will disable the safeguard, allowing a PCI VGA card to boot system.

   Warning: If a 3.3V AGP 2X card is now mistakenly inserted for booting the system, the high voltage will burn the 1.5V circuitry on board. Never use a 3.3V or an unknow AGP card on this mainboard.

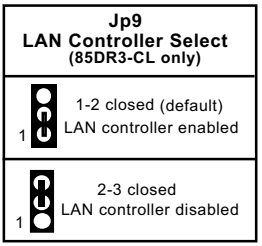
2-8.4 JKB1: PS/2 KB/Mouse Power On

JKB1 is designed to enable / disable PS/2 Keyboard/Mouse Power on function. Setting JKB1 to 1-2 closed will disable this function. Setting JKB1 to 2-3 closed will enable this function. Yet users still have to choose the K/B Power-on mode on BIOS. (See Integrated Peripherals" in BIOS Setup.)

JKB1: PS/2 KB / Mouse Power On
 1-2 closed (default) PS/2 KB/Mouse Power On Disabled
 2-3 closed PS/2 KB/Mouse Power On Enabled

2-8.5 LAN Controller Select (85DR3-CL only)

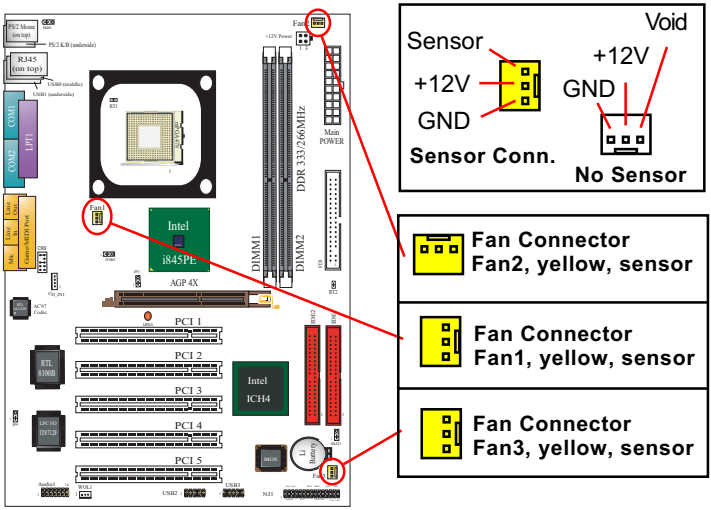
JP9 is a 3-pin jumper for enabling or disabling the on-board LAN Controller. Users can set JP9 1-2 closed to enable the on-board LAN Controller so as to set up the LAN driver, or to set JP9 2-3 closed to disable the on-board LAN Controller. In such case, users are free to use an add-on PCI LAN card for networking.



2-9 Other Connectors Configuration

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

2-9.1 On Board Fan Connectors



Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. When connecting the wire to any Fan Connector, users should make sure 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.

A Hardware Monitor chipset is on board, with which users can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, users can read the fan speed from the "Hardware Monitor Status" in CMOS BIOS.

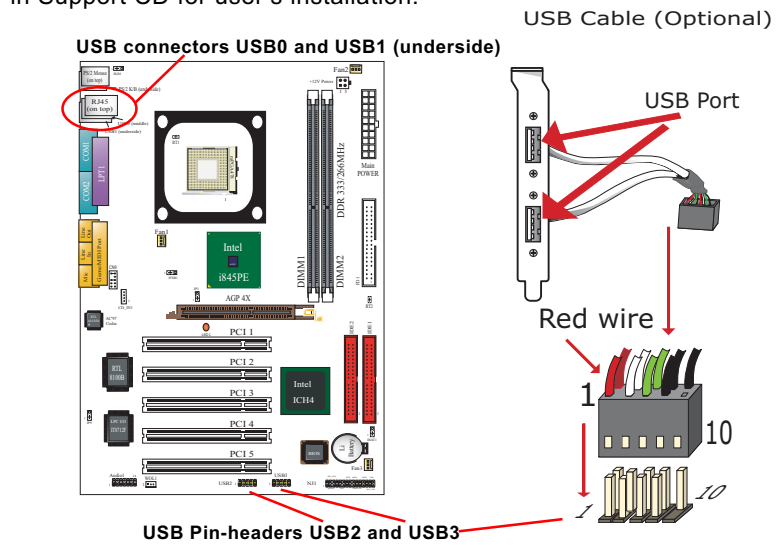
A running Fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it on screen.

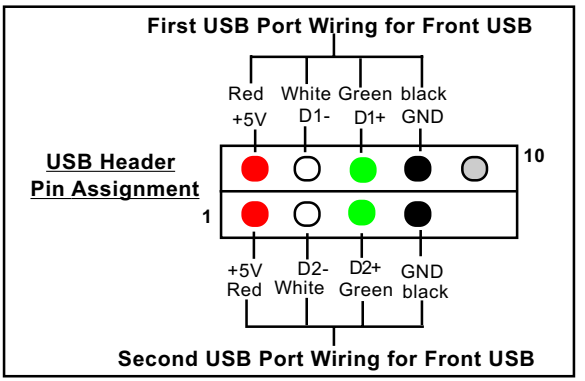
2-9.2 USB Ports and USB Pin-headers

This series provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, two USB pin-headers are added on board to provide expansion of four more optional USB ports by using two additional USB cables. Users can order the optional USB cables from your mainboard dealer or vendor.

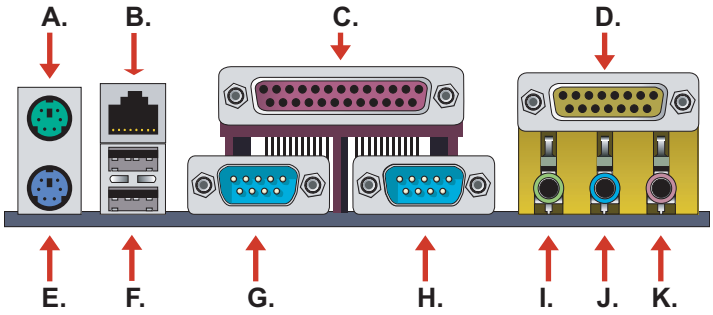
When plugging the USB cable to USB Header, user must make sure the red wire is connected to Pin 1.

All 6 USB ports are compliant with 1.1 / 2.0 USB Bus. USB 2.0 supports Win 2000 and up (not Win9X / Me). USB 1.1 / 2.0 drivers are provided in Support CD for user's installation.





2-9.3 Chassis Panel Connectors

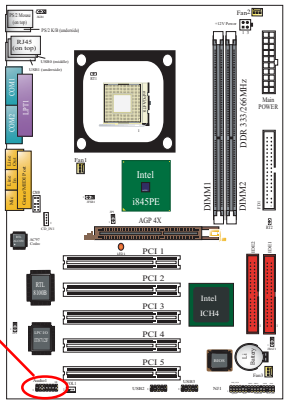


A : PS/2 Mouse
B : RJ45 (top) (85DR3-CL)
C : LPT1 Port
D : GAME/MIDI
E : PS/2 Keyboard
F : USB 1 (underside)
USB 0 (middle)

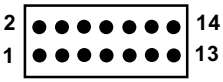
G : COM1 Connector
H : COM2 Connector
I : Line Out /
Front Speaker Out
J : Line in/
Rear Speaker Out
K : Microphone Input /
Center Subwoofer Out

2-9.4 6-channel Sound Output Connector (Optional)

This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.



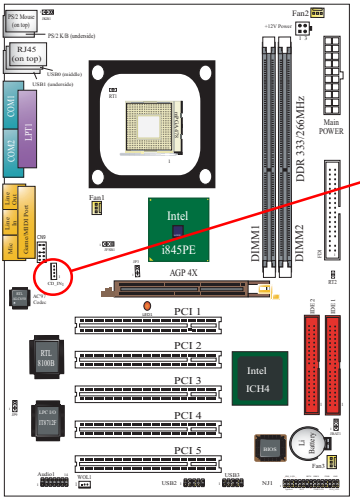
6-channel Audio-out Pin Assignment



Pin 1 LFE-out	**Pin 2 Gnd**
Pin 3 Center-out	**Pin 4 Gnd**
Pin 5 Surround-out-R	**Pin 6 Gnd**
Pin 7 Surround-out-L	**Pin 8 Gnd**
Pin 9 Jack-detect	**Pin10 (Void)**
Pin11 SPDIFI	**Pin12 Gnd**
Pin13 SPDIFO	**Pin14 Gnd**

2-9.5 CD-ROM Audio Connectors

CD_IN1 is an audio connector connecting CD-ROM audio to mainboard.

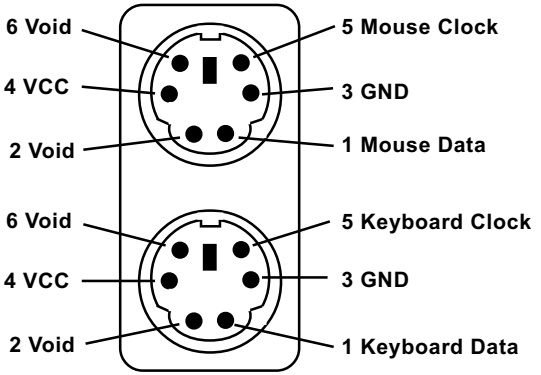


CD-ROM Audio Pin Assignment

CD_IN1	Pin 1	Pin 2	Pin 3	Pin 4
1	Left Channel	GND	GND	Right Channel

2-9.6 PS/2 Mouse And PS/2 Keyboard

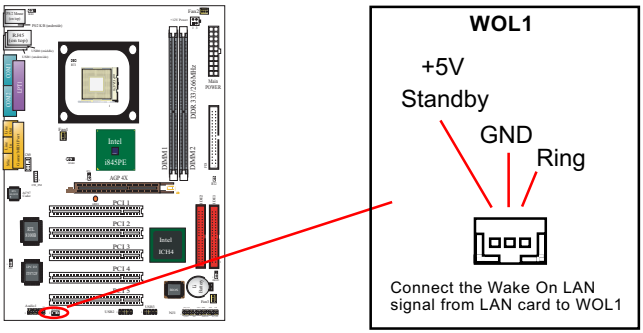
(PS/2 Mouse: On top of keyboard connector, green)



(PS/2 Keyboard Connector: Underside, purple)

2-9.7 Wake On LAN Connector:

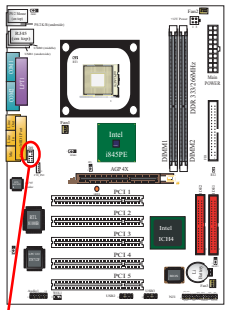
1. This connector connects to a PCI LAN card with a Ring signal output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
2. This feature requires that Resume On Ring feature is enabled in the BIOS setting “Power Management Setup” and that your system must be on ATX power supply with at least 720mA / +5V standby power.

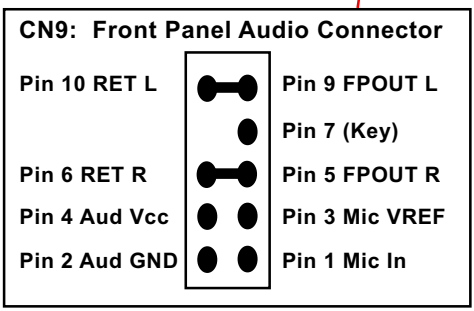


2-9.8 Front Panel Audio Connector

This Mainboard is designed with a Front Panel Audio connector “CN9” which provides connection to your chassis.

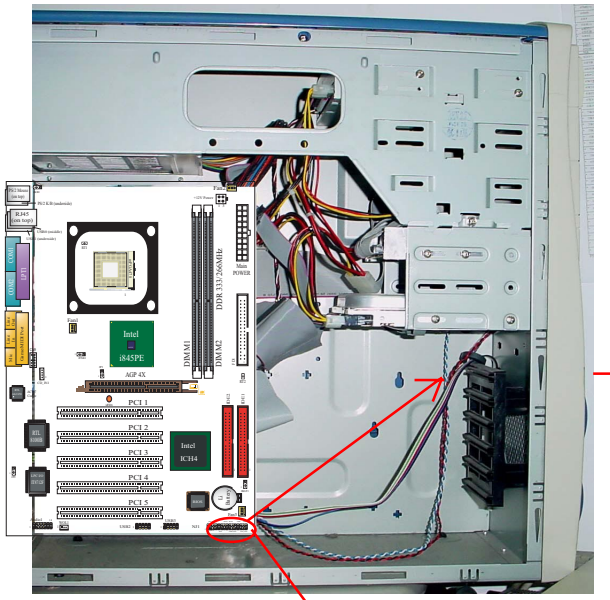
1. When CN9 is set to 5-6 closed and 9-10 closed, this default setting disables this connector and leaves the Back Panel Audio enabled.
2. To use this Front Panel Audio Connector, please open all pins of CN9 and connect it to your chassis.

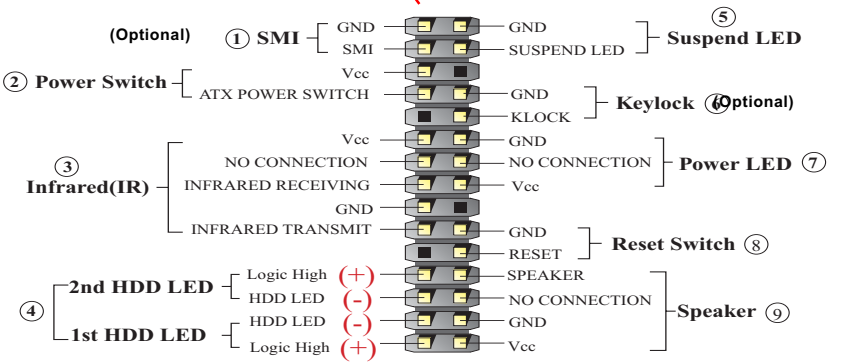




2-9.9 Complex Pin-header

This complex Pin-header consists of the following connectors for various supports. When you have fixed the mainboard to the case, join the connectors of this Complex Pin-header to the case Front Panel.





(1) SMI Connector (Optional):

Connection: Connected to the case-mounted Suspend Switch.
Function: Manually selecting system into the Suspend Mode or "Green Mode" by System management interrupt.

(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 (Optional):

Connection: Connected to keyboard.
Function: To lock keyboard and disable keyboard function.

(7) Power LED Connector:

Connection: Connected to System Power LED.
Function: To supply power to "System Power LED".

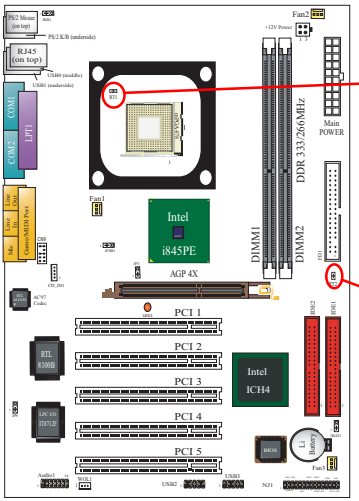
(8) Reset Switch Connector:

Connection: Connected to 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.

2-9.10 Thermal Resistors



Thermal Resistor RT1

RT1

RT1 is mounted with Thermal Resistor by default for detecting external CPU temperature.

Thermal Resistor RT2

RT2

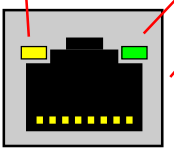
RT2 is mounted with Thermal Resistor by default for detecting system temperature.

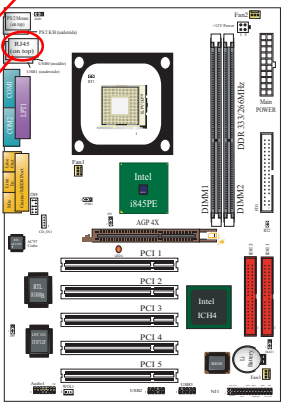
2-9.11 LAN Connector (85DR3-CL Only)

One RJ45 connector is on board for network connection.

Yellow LED “On” to indicate Network hub is in connection with the system.

Green LED blinks to indicate that data transmission is undergoing in 10/100 Base T mode.





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

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 check and configure the BIOS Setup for the new start.

4-4 The POST (Power On Self Test)

POST is an acronym for Power On Self Test. This program will test all things 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 the zip files of the latest BIOS and AMI flash utility "AMIFLASH.EXE" for your mainboard. After unzipping, 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). For example, you may type "amiflash(space)DR3C005.rom".

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

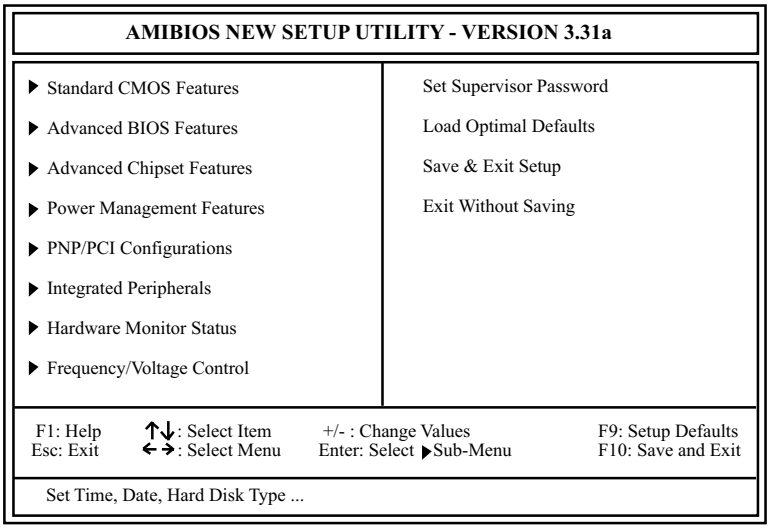
4-6.1 CMOS Setup Utility

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.



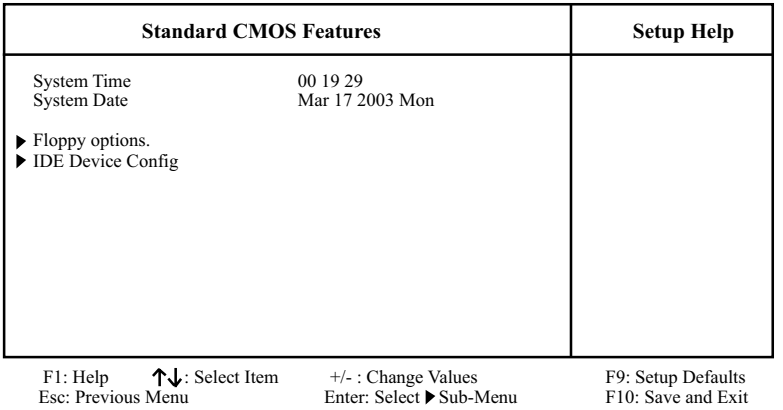
3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, “Save & Exit Setup” saves your changes and reboots the system, 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. Modify the configuration values of this option if you want to change your system hardware configuration or after you clear CMOS data.

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:



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:

<F1>: “Help” gives options available for each item.
<F9>: 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.

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 options Press Enter on "Floppy options" will let you select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are:
1.2MB, 5.25 in.
720KB, 3.5 in.
1.44MB, 3.5 in.
2.88MB, 3.5 in.
Not Installed

IDE Device Config Press Enter on IDE Device Config will let you configure the IDE devices on board and the following menu 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	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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 NEW SETUP UTILITY - VERSION 3.31a

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	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	
CPU Microcode Updation	Enabled	
L1 Cache	Enabled	
L2 Cache	Enabled	
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	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: "Help" gives options available for each item.
<F9>: 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 (default)/ disable quick boot of your system.

Delay for Hard Drive (Sec.) Allows you to adjust the time of detecting hard disk on board at booting system.
Choices: Disabled; 1~10 sec. in 1 sec. stepping.

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 (default); No

Initial Display Mode If option is "Silent", it allows user to add logo to initial screen. 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" (default) 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 (default)

Bootup Num-lock Allows you to toggle between On (default) or Off to control the state of the NumLock keys 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 Disabled (default), Floopy Drive A will not be chnged to B, nor B to A. Enabled, Floppy Drive a and B will change position.

Floppy Drive Seek Disabled (default), Floppy Drives will not be checked and diagnosed at system bootup; Enabled, Floppy Drives will be checked and diagnosed at system bootup.

PS/2 Mouse Support Enabled (default), PS/2 mouse is supported. Disabled, PS/2 Mouse is not supported

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 (default); Always

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

CPU Microcode Updation Allows you to enable/disable the CPU Microcode Update function.
Choices: Disabled; Enabled (default)

L1 /L2 Cache Use this item to enable/disable the L1/L2 cache.
Choices: Enabled (default); Disabled

System BIOS Cacheable Allows you to enable (default)/ 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 NEW SETUP UTILITY - VERSION 3.31a

Advanced Chipset Features		Setup Help
DRAM Timing		
SDRAM Frequency	Auto	
Configure SDRAM timing by SPD	Enabled	
SDRAM CAS# Latency	(2.5 Clocks)	
SDRAM RAS# Precharge	(3 Clocks)	
SDRAM RAS# to CAS# Delay	(3 Clocks)	
SDRAM Precharge Delay	(7 Clocks)	
SDRAM Burst Length	(4)	
Memory Hole	Disabled	
(Hyper-threading Function)	(Enabled)	
AGP Aperture Size	64MB	
USB Controller	6 USB Ports	
USB 1.1 Device Legacy Support	Disabled	
USB 1.1 Port 64/60 Emulation	Disabled	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: “Help” gives options available for each item.
<F9>: 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 for 100MHz CPU: Auto; 200MHz; 266MHz
Choices for 133MHz CPU: Auto; 266MHz; 333MHz
Default: Auto

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.
Default: Enabled

SDRAM CAS# Latency With SDRAM Timing by SPD disabled, you can select the SDRAM CAS# (Column Address Strode)latency manually.
Choices: 1.5 Clocks; 2 Clocks; 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: 2 Clocks; 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: 2 Clocks; 3 Clocks

SDRAM Precharge Delay Allows you to set the SDRAM Precharge Delay cycle.
Choices: 5 clocks; 6 clocks; 7 clocks

SDRAM Burst Length With SDRAM Timing by SPD disabled, you can select the SDRAM Burst length manually.
Choices: 8; 4

Memory Hole Allows you to enabled / disabled (default) the support of Memory Hole which is reserved for ISA card.
Choices: Disabled; 15MB-16MB

(Hyper-threading Function) If hyper-threading CPU is running on board, this item appears to show the enabled status.
Choices: Enabled; Disabled

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: 6 USB Ports (default) ; 4 USB Ports; 2 USB Ports; Disabled

USB 1.1 Device Legacy Support Allows you to select the USB Device Legacy support.
Choices: No Mice; All Device; Disabled (default)

USB 1.1 Port 64/60 Emulation Allows you to enable / disable (default) the Port 64/60 Emulation.

4-6.5 Power Management Features

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

Run the Power Management Features as follows:

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

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Power Management Features		Setup Help
ACPI Standby State	S1/POS	
USB Device Wakeup From S3/S4	Disabled (Optional)	
Call VGABIOS at S3 Resume	Enabled (Optional)	
Power Management/APM	Enabled	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Stand By	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Power Button Function	On/Off	
Restore on AC/Power Loss	Power Off	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: "Help" gives options available for each item.
<F9>: 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(STR) for suspending to DRAM if your system supports this mode. Or you can select S1 (POS) for Power on Suspend under ACPI mode.
Choices: S1(POS); S3(STR)(Optional)

(Optional) USB Device Wakeup From S3/S4 If ACPI is set to S3(STR), this item allows you to enable / disable the USB device Wakeup function from S3/S4 mode.

(Optional) Call VGABIOS at S3 Resume If the ACPI Standy State is set to "S3(STR)", this item allows you to enable / disable the Call VGABIOS at S3 function.

Power Management/ APM Allows you to enable (optional)/ 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 (optional)

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

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

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

Power Button Function Allows you to set power Button function.
Choices: On/Off (default); Suspend

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

Resume on Ring Allows you to enable / disable (default)the Resume on Ring Signal function.
An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume on LAN Allows you to enable / disable (default)the Resume on LAN function.

Resume on PME# Allows you to enable / disable (default)the Resume on PME function.

Resume On RTC Alarm Allows you to enable / disable (default)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 the Alarm date Hour, Minute and second.
Date Choices: Every Day; 01 ~ 31
Hour Choices: 00 ~ 23
Minute Choices: 00 ~ 59
Second Choices: 00 ~ 59

4-6.6 PNP / PCI Configurations

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

Run the PNP/PCI Configurations as follows:

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

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

PNP/PCI Configurations		Setup Help
Clear NVRAM	No	
PCI Latency Timer (PCI Clocks)	32	
Init. Graphics Adapter Priority	AGP/PCI	
PCI IDE Busmaster	Disabled	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	
PCI Slot4 IRQ Priority	Auto	
PCI Slot5 IRQ Priority	Auto	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: "Help" gives options available for each item.
<F9>: 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.

Clear NVRAM Allows BIOS to clear the NVRAM data.
Choices: No (default); Yes

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

Init. Graphics Adapter priority Allows you to select the initial Graphics Adapter.
Choices: AGP/Int-VGA ; AGP/PCI(default); PCI/AGP; PCI/Int-VGA; Internal VGA;

PCI IDE BusMaster Allows you to enable / disable (default)the PCI IDE Bus Master function.

PCI Slot 1/2/3/4/5 IRQ Priority Allows you to specify the IRQ for the PCI slots.
Choices: Auto (default); 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 NEW SETUP UTILITY - VERSION 3.31a

Integrated Peripherals		Setup Help
Onboard IDE	Both	
Onboard AC’97 Audio	Auto	
Onboard FDC	Auto	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
Serial Port 2 Mode	Normal	
Onboard Parallel Port	Auto	
Parallel Port Mode	ECP	
Parallel Port IRQ	Auto	
Parallel Port DMA Channel	Auto	
Onboard MIDI Port	Disabled	
MIDI Port IRQ	5	
Onboard Game Port	200	
K/B PowerOn Function	Disabled	
Stroke Keys Selected	N/A	
PS/2 Mouse Power-on Function	Disabled	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: “Help” gives options available for each item.
<F9>: 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 (default)

Onboard AC'97 Audio Allows you to disable AC' 97 Audio. Choices: Auto (default); Disabled

OnBoard FDC Allows you to enable / disable the Onboard FDC. Choices: Auto (default); Enabled; Disabled

Onboard Serial Port 1 Allows you to set the Onboard Serial Port 1. Choices: Auto (default); Disabled; 3F8/COM1; 2F8/ COM2; 3E8/COM3; 2E8/COM4;

Onboard Serial Port 2 Allows you to set the Onboard Serial Port 2. Choices: Auto (default); Disabled; 3F8/COM1; 2F8/ COM2; 3E8/COM3; 2E8/COM4;

Serial Port 2 Mode Allows you to set the Serial Port 2 Mode. Choices: Normal (default); IrDA; ASKIR;

OnBoard Parallel Port Allows you to configure onboard Parallel port . Choices: Auto (default); Disabled; 378; 278; 3BC;

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

Parallel Port IRQ Its variation depends on the selection of "Parallel Port Mode".

Parallel Port DMA Channel Its variation depends on the selection of "Parallel Port Mode".

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

MIDI Port IRQ If the onboard MIDI port is set at 300h or 330h, this item shows up to allow you to configure the MIDI Port IRQ3 to IRQ11.

OnBoard Game Port Allows you to configure Onboard Game port address.
Choices: Disabled; 200h (default); 208h

Keyboard Power On Function Allows you to configure the Keyboard Power On Function.
Choices: Disabled (default); By Stroke Key

Stroke Keys Selected If Keyboard Power On function is set at "by Stroke Key", this item shows up to allow you to select the stroke key.
Choices: Wake; Power; Ctrl + F1~F6

PS/2 Mouse Power-on Function Allows you to disable or use the PS/2 mouse to power on system.
Choices: Disabled (default); 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 3.31a

Hardware Monitor Status		Setup Help
Temperature 1	44 °C/111 °F	
Temperature 2	36 °C/96 °F	
Temperature 3	37°C/98°F	
Fan 1	4891 RPM	
Fan 2	4905 RPM	
Fan 3	0 RPM	
CPU Vcore	+1.680 V	
+1.5V	+1.504 V	
+3.3V	+3.408 V	
+5.0V	+5.126 V	
+12.0V	+11.187V	
-12.0V	-11.972V	
-5.0V	-4.939V	
5V SB	+5.164V	
Battery	+3.296V	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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 engineer or your dealer is recommended.

Temperature 1 Shows current CPU internal temperature.

Temperature 2 Shows current CPU external temperature.

Temperature 3 Shows current system temperature.

Fan 1 / 2 /3 Displays the current speed of CPU Fan, and other two onboard devices which user has connected to the onboard Fan Connectors.

CPU Vcore Shows CPU core actual voltage value.

+1.5V Shows current voltage against the +1.5V power supply.

+3.3V Shows current voltage against the +3.3V power supply.

+5.0V Shows current voltage against the +5.0V power supply.

+12V Shows current voltage against the +12V power supply.

-12V Shows current voltage against the -12V power supply.

-5.0V Shows current voltage against the -5.0V power supply.

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

Battery Shows current voltage against battery 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 3.31a

Frequency/Voltage Control		Setup Help
RedStorm Overclocking Tech (Optional)	(Press Enter)	
CPU Ratio Selection	Locked	
CPU Linear Freq	Disabled	
CPU Clock	(100 MHz)	
PCI Clock Auto Detection	Disabled	
Spread Spectrum Selection	Disabled	
CPU Voltage Control (Optional)	Auto	
AGP Voltage Control	1.5V	
DIMM Voltage Control	2.5V	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and 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:

<F1>: “Help” gives options available for each item.
<F9>: 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 unacceptably high value, BIOS will restart your system, then running at an acceptable CPU external clock.

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

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

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

PCI Clock Auto Detection Allows you to enable / disable (default)this auto detection function on PCI clock.

Spread Spectrum Selection If CPU Linear Frequency is disabled, use this item to enable/disable (default)Spread Spectrum Selection. This function will reduce the EMI (Electromagnetic Interference) in your system. If you do not have an EMI problem, leave this item disabled.

(Optional) CPU Voltage Control If this function is chosen on board, it allows you to configure the CPU Voltage. Usually, to raise CPU voltage will raise the chance of CPU overclocking and yet risk damage of CPU.
Choices: Auto; 1.100V~1.850V in 0.025 stepping.

AGP Voltage Control Allows you to configure the AGP Voltage.
Choices: 1.5V; 1.6V; 1.7V; 1.8V

DIMM Voltage Control Allows you to configure the DIMM Voltage.
Choices: 2.5V; 2.6V; 2.7V; 2.8V

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>.

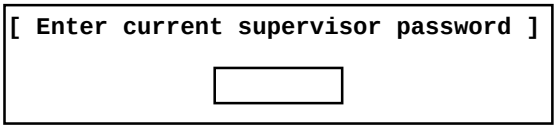
5. The following message appears to confirm the new password setup.

[New supervisor password installed]
Any Key to Continue

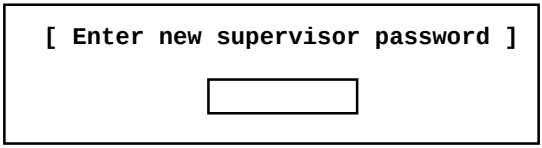
6. Then press any key to continue your CMOS Setup. To save the password setup, you should press “Save & Exit Setup” and choose “yes” to exit and save setup.

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.

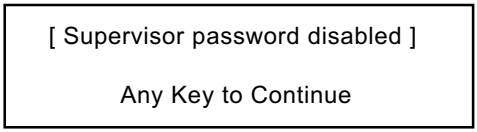
8. To change or remove a current supervisor password, choose “Set Supervisor Password” and press <Enter>. An instruction box appears on the screen, prompting you to enter the current password first:



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



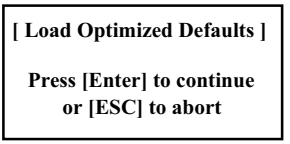
10. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor 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

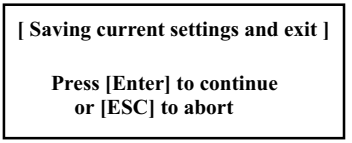
When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:



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

4-6.12 Save & Exit Setup

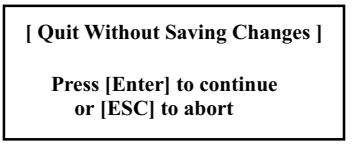
Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:



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 press <Enter> and the following message appears:



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

Memo