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ITEM CHECKUP

- ☑ Mainboard
- ☑ Support CD
- ☑ Bundled Bonus Pack CD
- ☑ Bundled Bonus Pack Manual
- ☐ Thermal Sensor Cable (optional)
- ☑ ATA 33/66/100 IDE Cable
- ☑ FDD Cable
- ☑ User's Manual
- ☐ RS232 Cable (optional)
- ☐ USB Cable (optional)

Chapter 1 Specification

Introduction

This mainboard features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge Intel 845G. The Intel P4 processor is a rapid execution engine providing 533/400MHz system bus, while North Bridge Intel 845G is a high performance integrated chipset providing processor interface, DDR266/200 SDRAM memory interface, Hub interface, AGP interface as well as an integrated Graphics device with CRT display port.

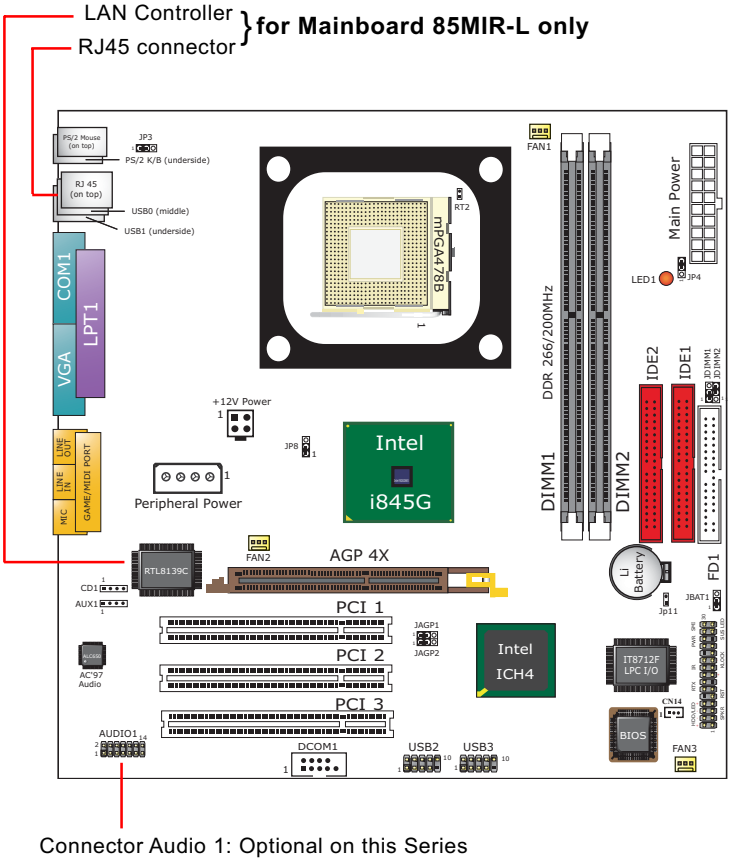
Integrated with i845G, South Bridge Intel ICH4 supports the LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, LAN interface, USB interface, AC'97 Audio interface and the interrupt control. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

1-1 Mainboard Components Locations
1-2 Mainboard Specifications**
1-3 Mainboard Specifications Table
1-4 Chipset Diagram

**** 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 SL-85MIR / 85MIR-L Components Locations



Connector Audio 1: Optional on this Series

1-2 Mainboard Specifications

1-2.1 CPU Socket

CPU Socket 478 on board, supporting Intel® Pentium 4 processors in 478-pin package for :

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

1-2.2 System Chipsets

North Bridge Intel 845G plus South Bridge Intel ICH4 working with Intel Pentium 4 Processor for managing and arbitrating operations between system interfaces:

1-2.3 Memory

2 DDR DIMM 184-pin slots on board for DDR 266/200 SDRAMs :

- Supporting unregistered, non-ECC DDR266/200 SDRAM up to 2 GBs
- Supporting installation of mixed volumes yet same type of DDR SDRAM modules
- No support for double-sided x16 DDR DIMMs

1-2.4 AMI BIOS

- Supporting Plug & Play V1.0
- Flash Memory for easy upgrade
- Supporting BIOS Writing Protection and Year 2000 compliant
- Supporting BIOS Setup (See Chapter 4 BIOS Setup)

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 VGA on board

- Built-in VGA Graphics Controller in i845G, supporting one 15-pin connector on board for CRT 2D, 3D VGA display
- VGA display to be safeguarded by jumper setting (see Jumper Setting section for VGA select)
- VGA Driver enclosed in Support CD for user's installation

1-2.7 Advanced System Power Management:

- ACPI 1.0B compliant (Advanced Configuration and Power Interface)
- APM V1.2 compliant (See Power Management in BIOS Setup)
- ACPI compliant (See Power Management in BIOS Setup)
- PS/2 Keyboard & Mouse Power On
- Supporting Wake-on-LAN (ring signal) through CN14 connector
- Real Time Clock (RTC) with date alarm, month alarm, and century field

1-2.8 Multi-I/O Functions :

- PCI EIDE Controller, supporting:
  - -- 2x Ultra ATA100 / 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 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 & DCOM1) on board

1-2.9 Expansion Slots

- 3 PCI bus Master slots
- 1 AGP 4X slot
- 2 DDR DIMM slots

1-2.10 LAN (Local Area Network) on board (85MIR-L only)

PCI local bus single-chip Fast Ethernet Controller RTL8139C on board:

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

1-2.11 Hardware Monitor on board

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

1-2.12 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board

- Supporting up to 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.

1-2.13 6-channel Audio-out Support (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.

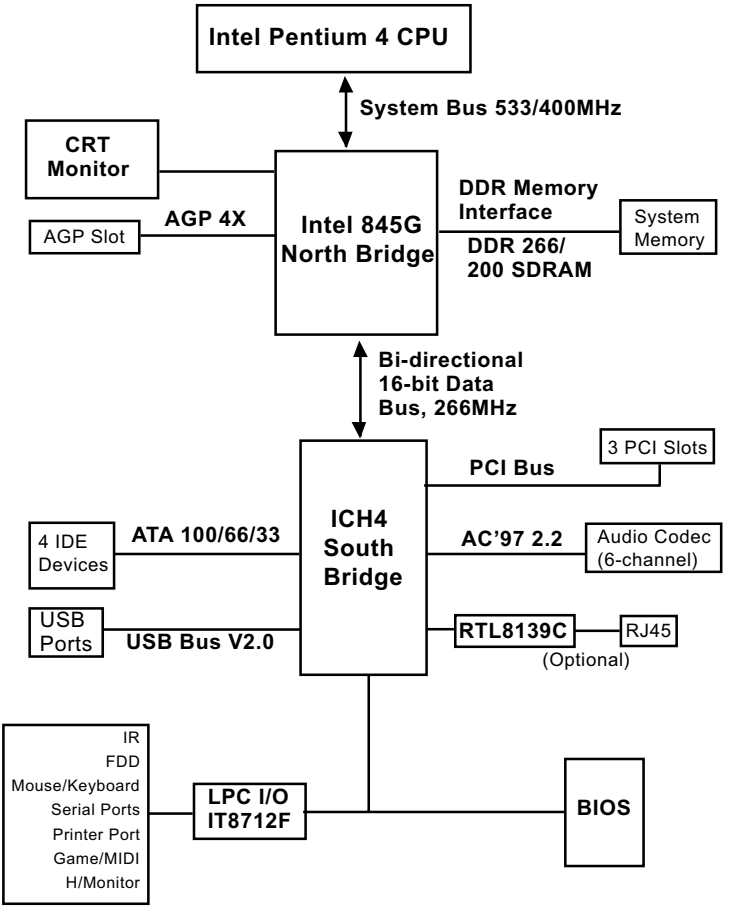
1-2.14 Form Factor

- Micro-ATX Form Factor, ATX power supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Peripheral Power Connector
- Mainboard size: 245mm x 245mm

1-3 Mainboard Specification Table

SL-85MIR / 85MIR-L Specifications and Features	
CPU	Socket 478B for Intel Pentium 4 CPUs
North Bridge	Intel 845G, supporting 533/400MHz System Bus
South Bridge	Intel ICH4
BIOS	AMI BIOS
Memory	Supporting DDR 266/200 SDRM, up to 2GB in two DDR DIMM slots
I/O Chip	IT8712F
AGP interface	AGP4X mode only
Audio	AC'97 Audio V2.2 compliant, 6-channel audio
IDE Interface	2 UATA 33/66/100 IDE ports
Networking	Fast Ethernet Controller, 1xRJ45 on board
PCI Slots	3 PCI Master slots on board
I/O Connectors	6xUSB ports (V2.0), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	1 x VGA connector on board for CRT VGA display
Other Features	BIOS Writing Protection; Hardware Monitoring in IT8712F Keyboard / Mouse Power On; ATX 2.03 Power Supply; Micro-ATX Form Factor

1-4 Chipset System Block Diagram



Pentium 4 + Intel 845G + Intel ICH4 Diagram

Chapter 2 Hardware Setup

To Get things ready for hardware setup !

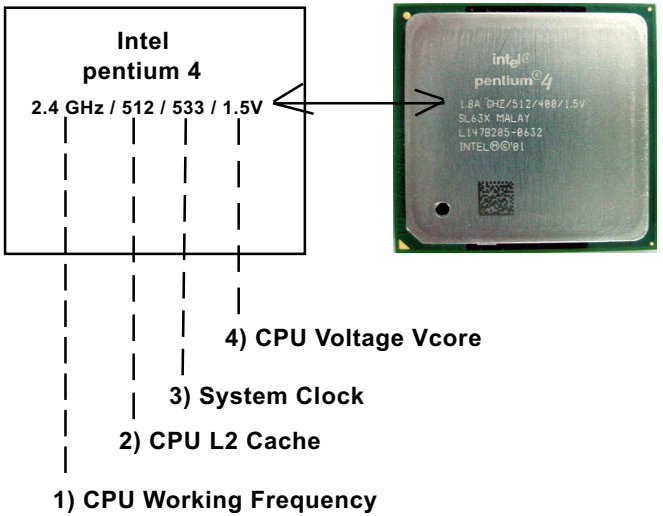
1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. 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 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 AGP4X Installation with Jumper and LED Safeguard
2-5 IDE Connector Installation
2-6 Floppy Drive Connector (FDC) Installation
2-7 ATX 2.03 Power Supply Installation
2-8 Jumper Settings
2-9 Other Connectors Configuration
2-10 IRQ Description

2-1 Pentium 4 CPU and Installation

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. For example,
   2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (18 x 133MHz CPU clock);
   2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (20 x 100MHz CPU clock)
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 Clock: this part depicts the System Clock (Front Side Bus) provided by the CPU. For example,
   533 stands for a 533MHz system clock provided by a 133MHz CPU times 4;
   400 stands for a 400 system clock provided by a 100 MHz CPU x 4.
4. CPU Voltage Vcore: this part depicts the CPU Voltage. For example, 1.5V stands for a CPU of 1.5V Vcore.

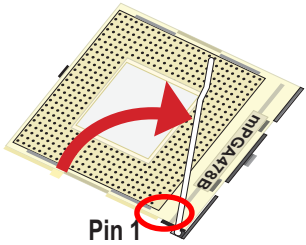
Note: System Clock vs CPU Clock
P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, users can figure out the P4 CPU clock by the System Clock divided by 4.

2-1.2 Pentium 4 CPU Installation with Socket 478

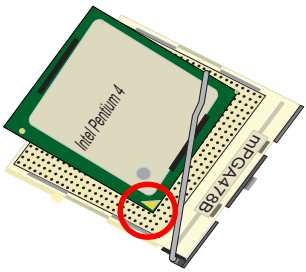
This mainboard is built with CPU Socket 478 (with 478 pins) supporting the Intel Pentium 4 CPU:

- 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 the next section.

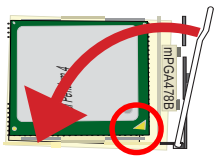
1. First pull sideways the lever of Socket 478, and then turn it up 90-degree so as to raise the upper layer of the socket from the lower platform.



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



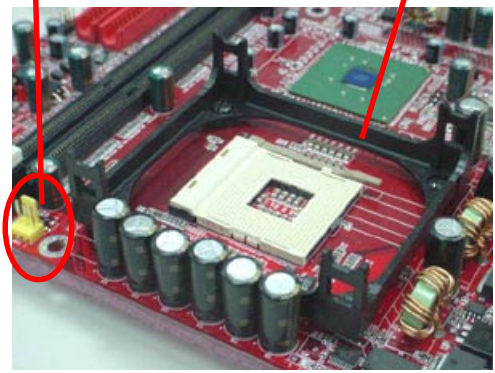
3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.



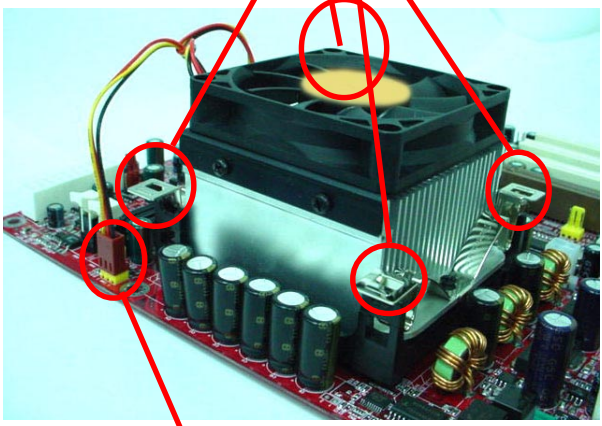
2-2 Pentium 4 CPU Fan Installation

CPU Fan Connector

Pentium 4 Fanbase



Press down 4 corners to lock fan to fanbase



Connect Fan Connector to CPU FAN connector

2-3 Memory Installation

How to tackle the memory Modules:

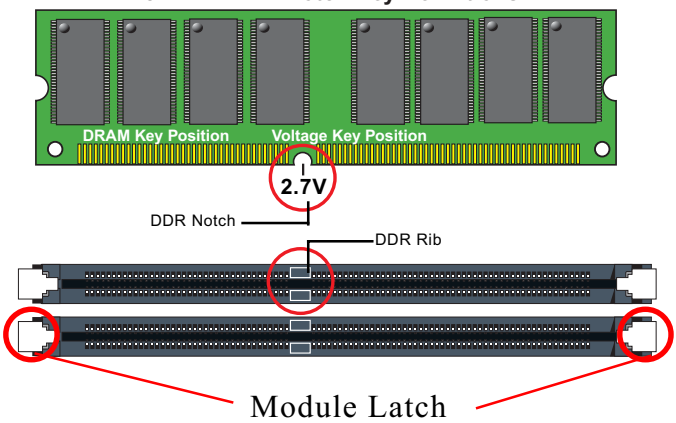
- Make sure to unplug your power supply before adding or removing memory module. Failure to do so may cause severe damage to both your mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM into a slot improperly will damage the memory module and slot itself.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

2-3.1 To Install DDR SDRAM Module for this Mainboard

- This Mainboard only supports up to 2GB unbuffered DDR 266/200 SDRAM, with 2 DDR DIMM slots on board. Do not insert other type of modules into these slots.

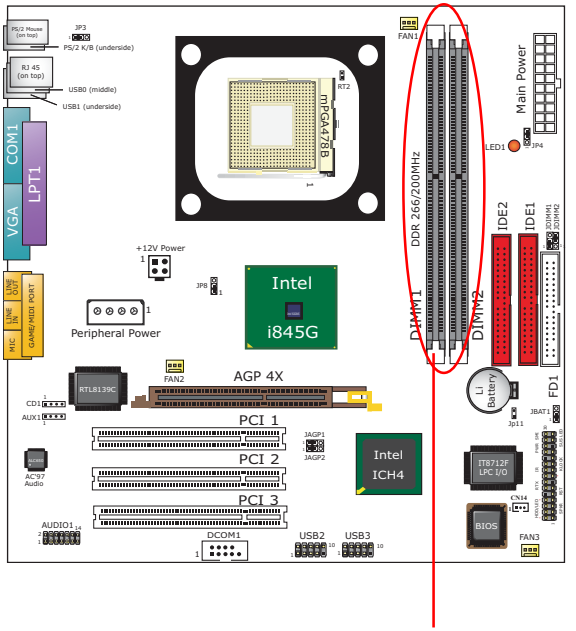
- DDR DIMM slot has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches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

184-Pin DIMM Notch Key Definitions



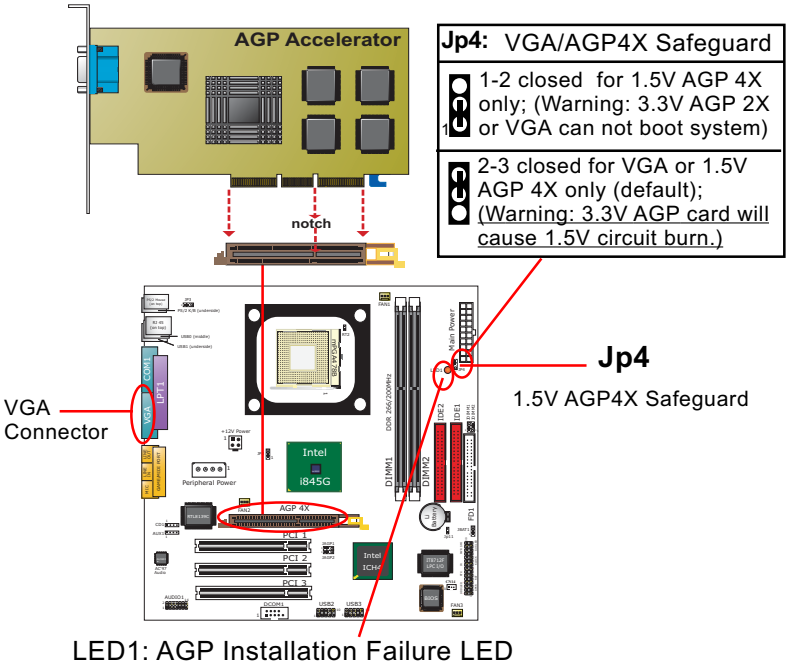
2-3.2 To Remove a DIMM

To remove a DIMM Module, first power off system and then press down the holding latches on both sides of slot to release the module from the DIMM slot.



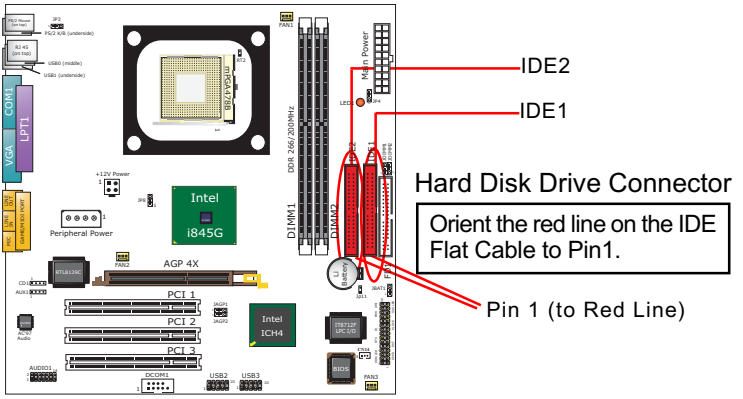
2-4 Install VGA / AGP4X with LED1 & Jp4 Safeguard

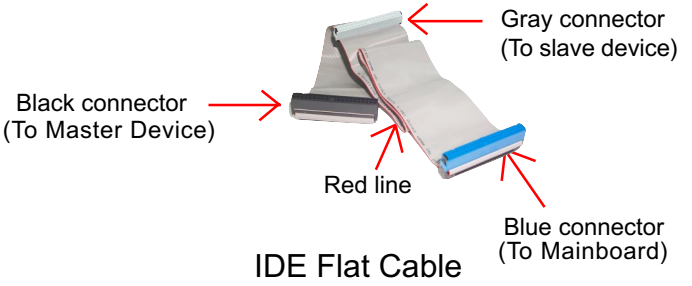
1. To install on-board VGA, please connect your monitor directly to VGA connector on board. Default Jp4 (2-3 closed) is designed to assure booting system with 1.5V on-board VGA or 1.5V AGP4X add-on card. User can choose either VGA or AGP4X as the initial display by changing BIOS Setup (see "PNP/PCI Configurations" in BIOS Setup). However, if 3.3V AGP 2X card is 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. To install AGP4X add-on card, please insert AGP4X card into AGP slot on board and connect your monitor directly to the AGP4X card. To assure the use of a correct AGP4X card of 1.5V, please set Jp4 to 1-2 closed, resulting in that it will allow only 1.5V AGP 4X card to boot system. With Jp4 1-2 closed, system even cannot boot with on-board VGA. On this mainboard, if user cannot boot with an AGP card inserted in AGP slot, it indicates that the AGP card is a wrong one. The AGP card should be changed until a 1.5V AGP4X card is inserted.
3. 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.

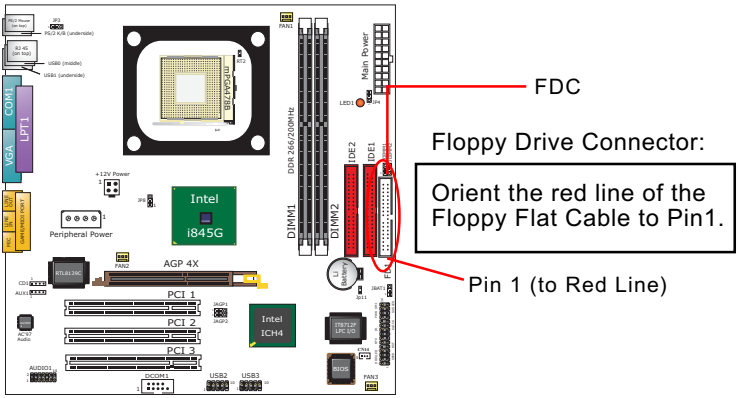


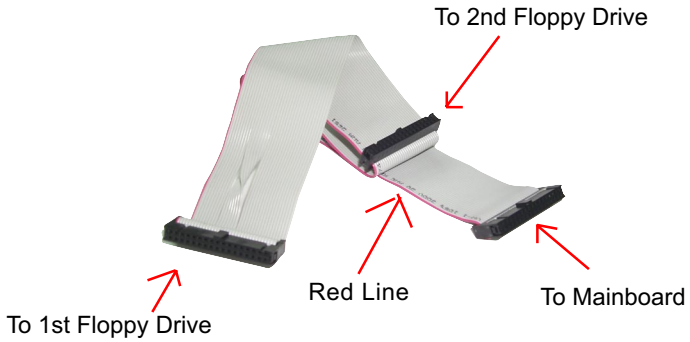


IDE Flat Cable

2-6 Floppy Drive Connector (FDC) Installation

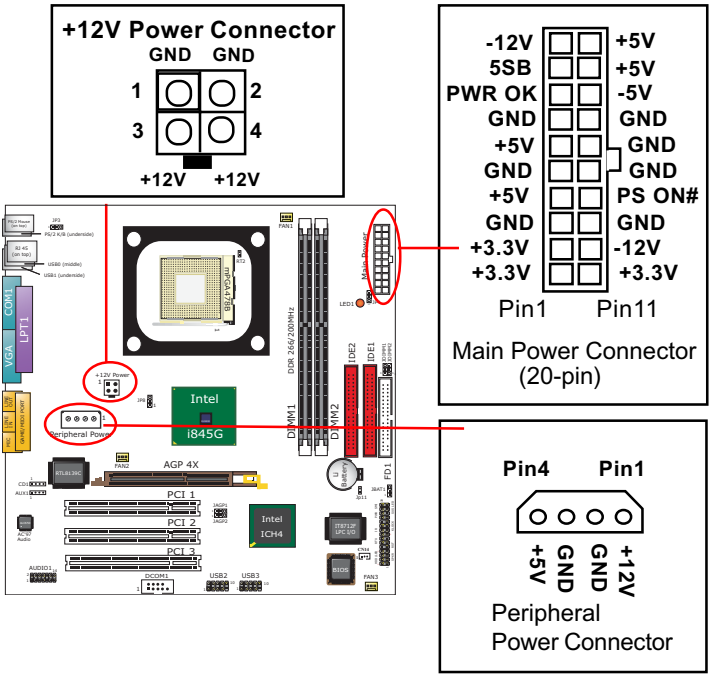
To install FDC, you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.





FDD Cable

2-7 ATX V 2.03 Power Supply Installation



ATX V2.03 power supply 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 Supply which can be either of the latest version 2.03 or of earlier ATX format.
2. If you use an ATX Power Supply Version 2.03 or later, you can now connect the on-board square-shaped +12V Connector to the square-shaped +12V Connector of your ATX Power Supply. In this case, it is not necessary for you to connect the on-board 4-pin Peripheral Power Connector to your Power Supply.
3. If you use an ATX power Supply of an older version than V2.03, you cannot find a square-shaped +12V Connector with your Power Supply; you must then connect the on-board 4-pin Peripheral Power Connector to the 4-pin Peripheral Power Connector of your Power Supply.

2-8 Jumper Settings

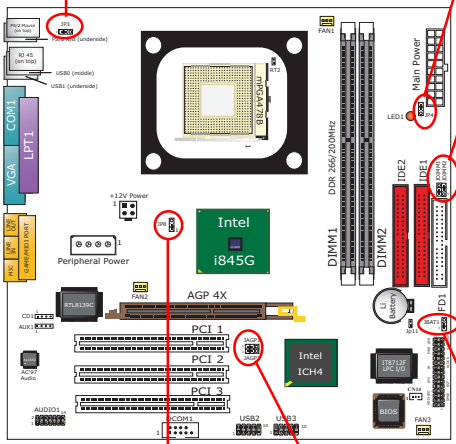
The following diagrams show the locations and settings of jumper blocks on the mainboard.

Jp3: Keyboard / Mouse / Power Button Select

1	1-2 closed (default) To power on by Power Button
1	2-3 closed To power on by keyboard / mouse

Jp4: VGA/AGP4X Safeguard

1	1-2 closed for 1.5V AGP 4X only; (Warning: 3.3V AGP 2X card will not boot system.)
1	2-3 closed for VGA or 1.5V AGP 4X only (default); (Warning: 3.3V AGP card will cause 1.5V circuit burn.)



JDIMM1 & JDIMM2: DIMM Voltage Select

DIMM Voltage	JDIMM1	JDIMM2
2.5V	1	1
2.6V	1	1
2.7V (Default)	1	1

Jp8 CPU Clock Select

1	(Default) 1-2 closed CPU Autodetect
1	2-3 closed 133MHz CPU Clock Selected

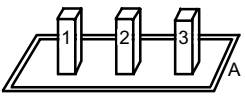
JAGP1 & JAGP2 AGP Voltage Select

AGP Voltage	Jumper Setting
1.5V (default)	1 JAGP1 1-2 1 JAGP2 1-2
1.6V	1 JAGP1 1-2 1 JAGP2 2-3
1.7V	1 JAGP1 2-3 1 JAGP2 1-2

JBAT1 Clear CMOS

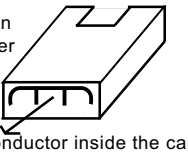
1	1-2 closed (default) To hold data
1	2-3 closed To clear CMOS

2-8.1 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.



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.

Jp X

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.

2-8.2 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:

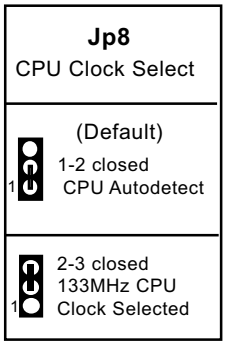
1. Power off system;
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default. Remember never clear CMOS when system power is on.

JBAT1 Clear CMOS	
	1-2 closed (default) To hold data
	2-3 closed To clear CMOS

2-8.3 Jp8: CPU Clock/Overclock Select

Jp8 is designed on board as a jumper for CPU clock select and 100MHz to 133MHz CPU overclocking. With Jp8, user can choose the way for a 100MHz CPU to run an overclock on board.

1. Before setting the CPU clock, read the Identification Legend on the CPU, find the Max FSB and divide it by two. The result is the default CPU clock of your CPU.
2. If Jp8 is set to 1-2 closed, CPU clock will be autodetected by BIOS, indicating that overclock is not desired. The CPU will boot system with the default CPU clock on the CPU you use.
3. If Jp8 is set to 2-3 closed, CPU is set to 133MHz CPU clock, indicating that 133MHz overclock is desired. The CPU will try to boot system with 133MHz even if a 100MHz CPU is used.
   However, if overclok fails, system will fail to boot. In such case, restore Jp8 to default setting and clar CMOS with jumper before resarting your system.



Notes on CPU Overclocking:

1. If you have successfully booted system with or without CPU overclock, you still can do 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 as stated below 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 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 and choose “Load Optimized Defaults” to restore default BIOS .

2-8.4 JAGP1 & JAGP2: AGP Voltage Select

The default voltage 1.5V at AGP slot is for normal operation of the supported AGP 4X. In some case, when you try to do CPU overclocking, you then may also need to raise the transfer rate of the AGP interface. JAGP1 & JAGP2 are designed on board to provide settings for selecting a higher AGP voltage so as to raise the speed of the AGP interface.

Warning: Selecting a higher voltage than the default , you are risking the stability of your system.

JAGP1 & JAGP2 AGP Voltage Select

AGP Voltage	Jumper Setting
1.5V (default)	1 JAGP1 1-2 1 JAGP2 1-2
1.6V	1 JAGP1 1-2 1 JAGP2 2-3
1.7V	1 JAGP1 2-3 1 JAGP2 1-2

2-8.5 JDIMM1 & JDIMM2: DIMM Voltage Select

The default voltage 2.7V at DIMM sockets is for the optimum operation of the supported DDR SDRAM. In some case, when you are not doing any overclocking, you may find a lower DIMM voltage would work better. JDIMM1 & JDIMM2 are designed on board to provide settings for adjusting the DIMM voltage so as to optimize the operation stability.

Warning: In selecting a higher voltage than the default , you are risking the stability of your system.

JDIMM1 & JDIMM2: DIMM Voltage Select

DIMM Voltage	JDIMM1	JDIMM2
2.5V	1	1
2.6V	1	1
2.7V (Default)	1	1

2-8.6 Jp3: Keyboard / Mouse / Power Button Select

Jp3 is designed to select keyboard or the Power button as the power-on controller. Setting Jp3 to 1-2 closed will allow user to power on system by power button. Setting Jp3 to 2-3 closed will allow user to power up system by keyboard. Yet user still has to enter BIOS Setup for choosing the K/B Power-on mode. (See Integrated Peripherals" in BIOS Setup.)

Jp3:	**Keyboard / Mouse / Power Button Select**
1	1-2 closed (default) To power on by Power Button
1	2-3 closed To power on by keyboard / mouse

2-8.7 Jp4: VGA/AGP4X Safeguard

1. Boot system with on-board VGA:
   Default Jp4 (2-3 closed) is designed to assure booting system with 1.5V on-board VGA or 1.5V AGP4X add-on card. User can choose either VGA or AGP4X as the initial display by changing BIOS Setup (see "PNP/PCI Configurations" in BIOS Setup).

Jp4:	VGA/AGP4X Safeguard
1	1-2 closed for 1.5V AGP 4X only; (Warning: 3.3V AGP 2X or VGA can not boot system)
1	2-3 closed for VGA or 1.5V AGP 4X only (default); (Warning: 3.3V AGP card will cause 1.5V circuit burn.)

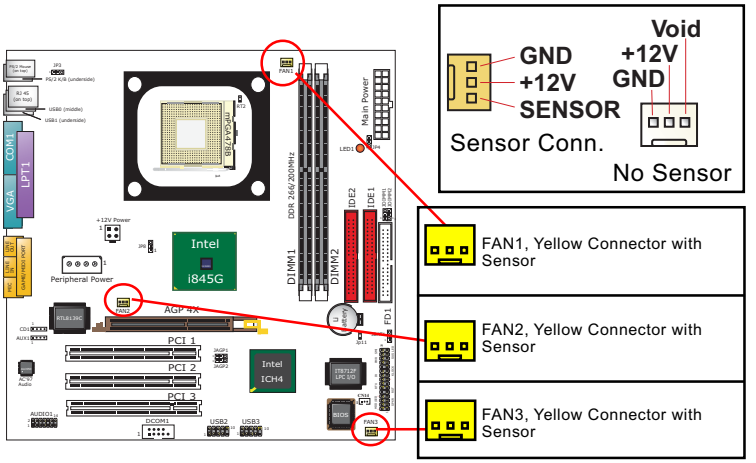
   However, if 3.3V AGP 2X card is mistakenly inserted for booting the system, the high voltage will burn the 1.5V circuitry on board. Never use a 3.3V or an unknow AGP card in this case.

2. Boot system with AGP4X add-on card:
   To assure the use of a correct AGP4X card of 1.5V, please set Jp4 to 1-2 closed, resulting in that it will allow only 1.5V AGP 4X card to boot system. With Jp4 1-2 closed, system even cannot boot with on-board VGA. In this case, if user cannot boot with an AGP card inserted in AGP slot, it indicates that the AGP card is a wrong one. The AGP card should be changed until a 1.5V AGP4X card is inserted.

2-9 Other Connectors Configuration

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

2-9.1 On-board FAN Connectors

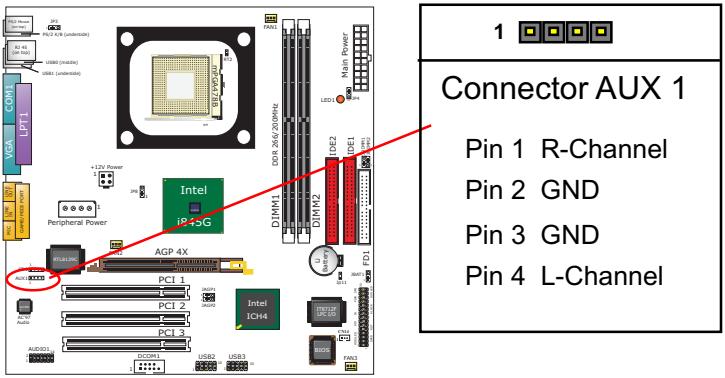


Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. Sensor Fan Connector is yellow in color on board. When connecting the wire to any Fan Connector, user should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. A Hardware Monitor chipset is on board, with which user can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, user 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 with the monitoring program.

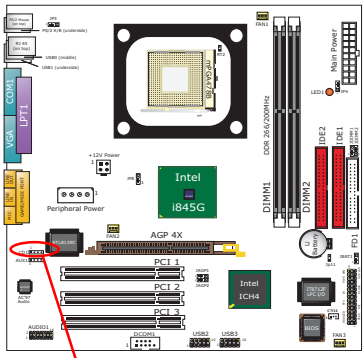
2-9.2 Connector AUX1

This connector connects to the Video Tuner Card and acts as Audio Input connector.



2-9.3 CD-ROM Audio Connectors (CD 1)

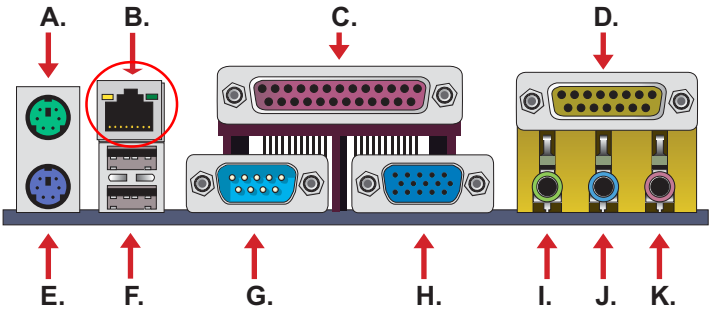
CD 1 is an audio connector connecting CD-ROM audio to mainboard.



CD-ROM Audio Pin Assignment

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

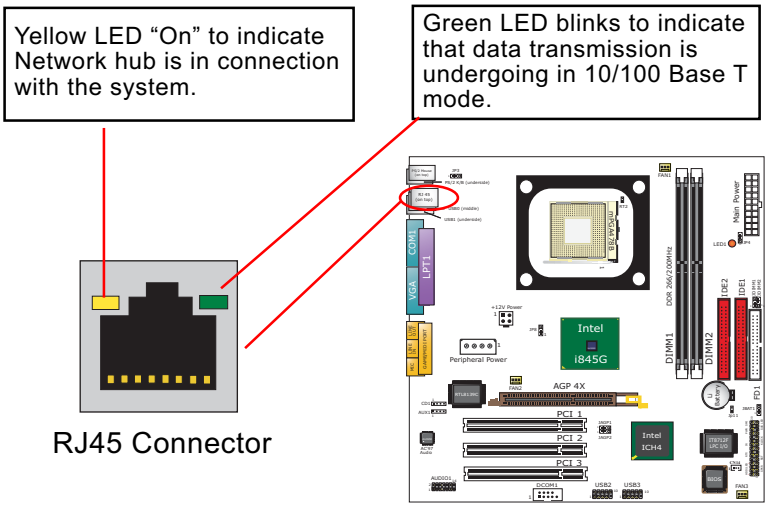
2-9.4 Chassis Panel Connectors



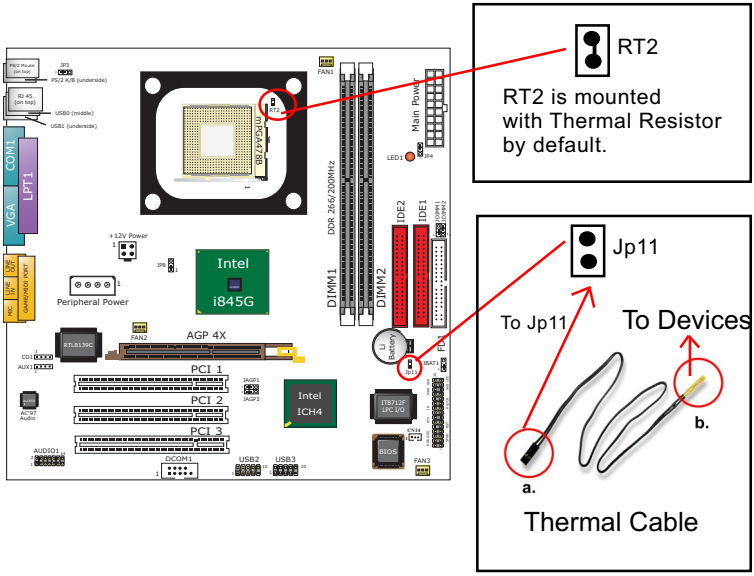
A : PS/2 Mouse
B : LAN Port RJ45 (85MIR-L only)
C : LPT1 Port
D : Game/MIDI
E : PS/2 Keyboard
F : USB 1 (underside)
F : USB0 (middle)
G : COM1
H : VGA
I : Line Out / Front Speaker Out
J : Line In / Rear Speaker Out
K : Microphone In / Center Subwoofer Out

2-9.5 LAN Connector RJ45 (85MIR-L only)

One RJ45 connector is on board for network connection and also provide support for Wake On LAN function.



2-9.6 Thermal Sensor Connectors RT2 and Jp11

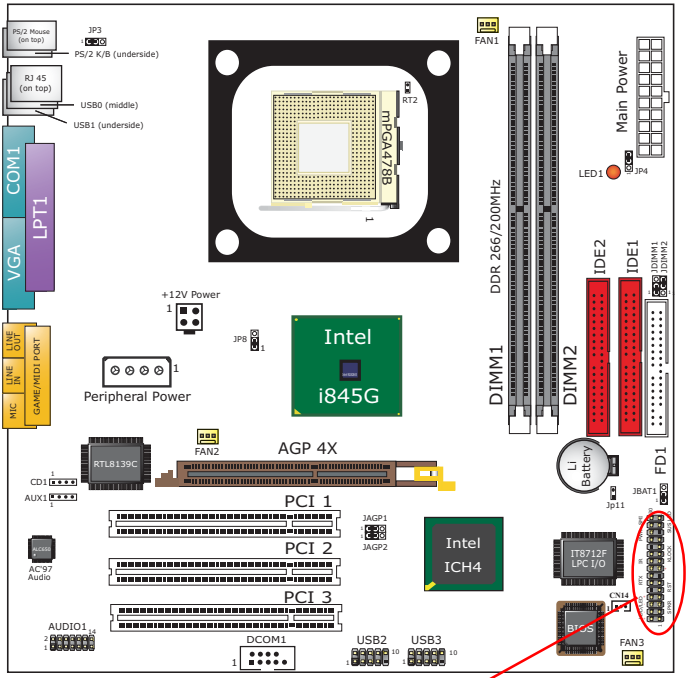


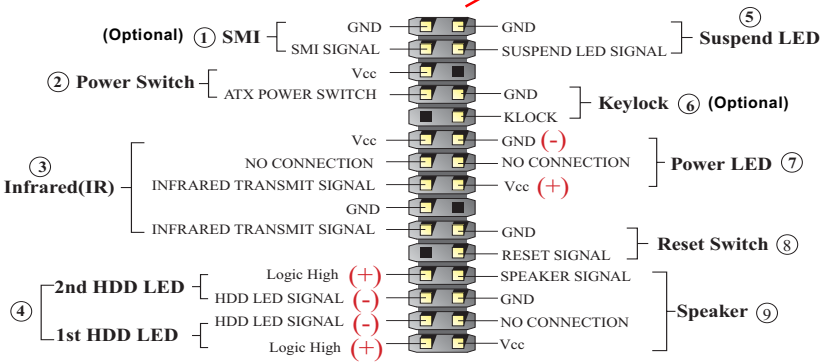
1. Connector RT2: A thermal resistor is mounted by default to connector RT2 so as to detect the temperature of the CPU. What RT2 does is to transmit the thermal signal to BIOS or Hardware Monitor.

2. Connector Jp11: A thermal cable is needed to connect Jp11 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. Please connect the end (a) of the thermal cable to Jp11, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware Monitor utility.**

2-9.7 Complex Header

This complex Header consists of the following connectors for various supports:





(1) SMI Connector (Optional):

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

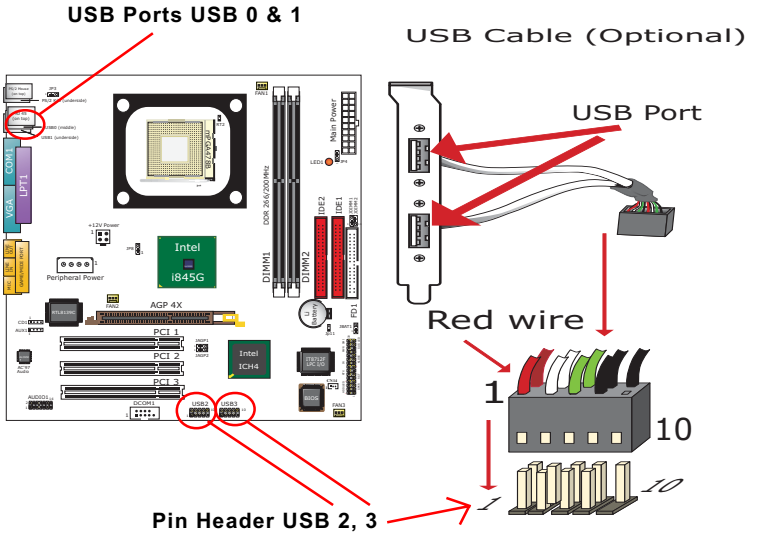
Connection: Connected to the case-mounted Speaker.
Function: To supply power to the case-mounted Speaker.

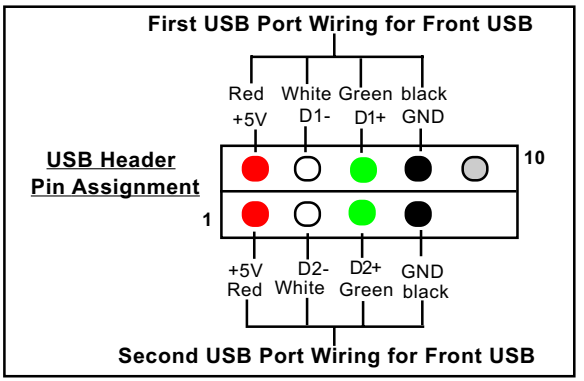
2-9.8 USB Ports and USB Headers

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

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

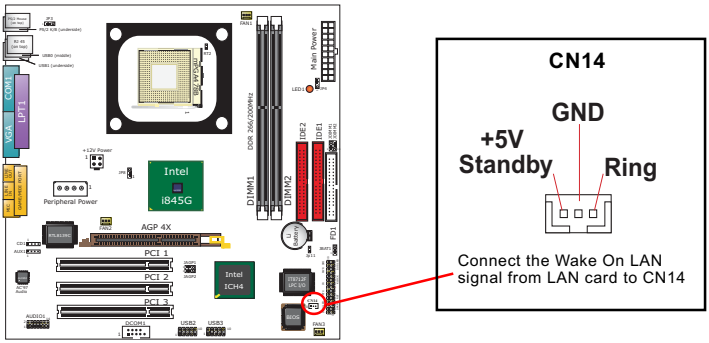
All 6 USB ports are compliant with V2.0 USB Bus, supporting operating systems Win 2000 and Win XP. USB V2.0 drivers are provided in Support CD for user's installation.





2-9.9 Connector CN14: Wake On LAN

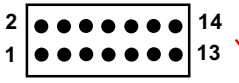
1. This connector connects to a LAN card with a Ring signal output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
2. This feature requires that Resume On Ring feature is enabled in the BIOS setting “Power Management Setup” and that your system must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



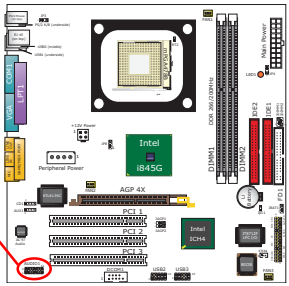
2-9.10 Audio 1: 6-channel Sound Output Connector (optional)

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

6-channel Audio-out Pin Assignment

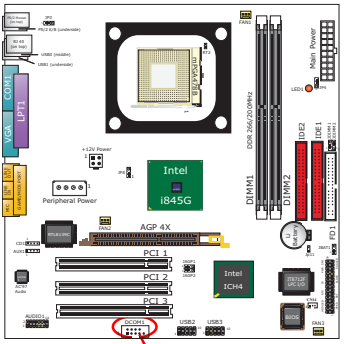


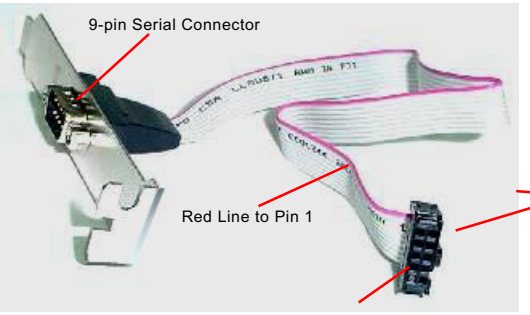
Pin 1 LFE-out	**Pin 2 Gnd**
Pin 3 Center-out	**Pin 4 Gnd**
Pin 5 Surround-out-R	**Pin 6 Gnd**
Pin 7 Surround-out-L	**Pin 8 Gnd**
Pin 9 Jack-detect	**Pin10 (Void)**
Pin11 SPDIFI	**Pin12 Gnd**
Pin13 SPDIFO	**Pin14 Gnd**



2-9.11 Pin-header DCOM1: for one external serial port

DCOM1 Header is built on board , which requires a serial COM2 cable to provide a 9-pin serial connector for a serial device connection. One RS232 COM2 Cable enclosed in the mainboard package is optional. When you insert COM 2 cable to DCOM1 header, take notice that the red line of the cable must connect to Pin 1 of DCOM1.



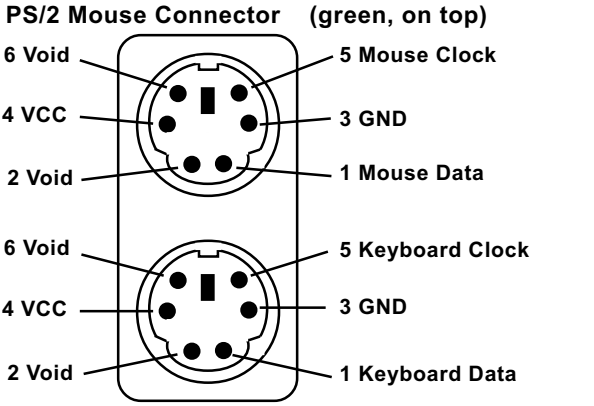


DCOM1 female Header

DCOM1 Header

6 9
1 5

2-9.12 PS/2 Mouse And PS/2 Keyboard



2-10 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 share 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 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 this series, user should be able to find in the Support CD the following drivers and utilities:

1. INF Utility (Intel Chipset Software Installation Utility);
2. Intel Application Accelerator (IAA);
3. DirectX
4. Graphics Drivers
5. AC'97 Audio Drivers
6. Hardware Monitor Utility
7. Other Drivers (including Network and Intel USB)

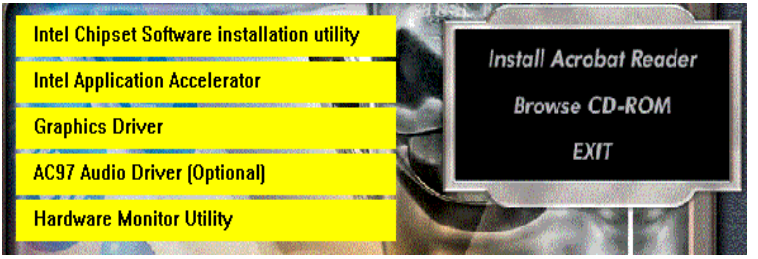
This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME, Windows 2000 and Windows XP. The installation procedures for all these operating systems are all programed into an auto-run mode. What users have to do is to read and follow 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 Support CD
3-2 Intel Chipset Software Installation Utility (INF Utility)
3-3 Intel Application Accelerator (IAA)
3-4 DirectX
3-5 Graphics Drivers
3-6 AC'97 Audio Drivers
3-7 Hardware Monitor Utility
3-8 LAN Drivers (for 85MIR-L only)
3-9 Intel USB2.0 Drivers

3-1 Open up the Support CD

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:



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

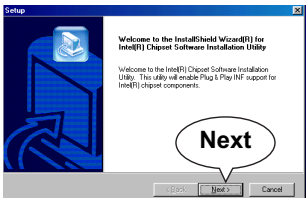
   D:\ Autorun.exe (assuming that your CD-ROM Drive is Drive D)

3. 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.

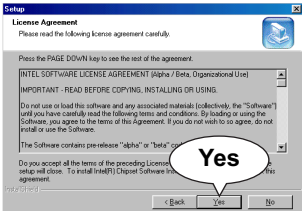
3-2 Install "Intel Chipset Software Installation Utility"

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

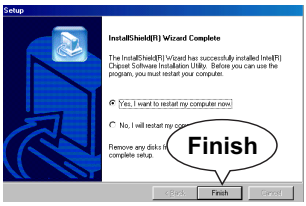
2. The Intel Service Pack InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press **"Next"** button to continue.



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.

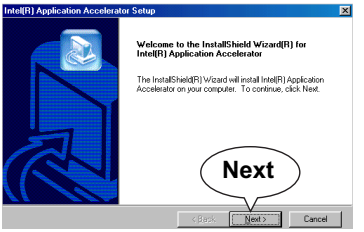


3-3 Install "Intel Application Accelerator"

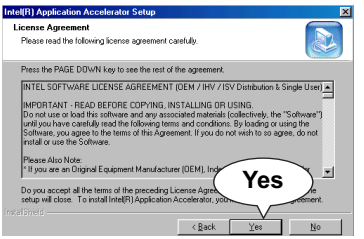
IAA supports all Windows 98/98se/Me/NT4/2000/XP with Pentium III / 4 processor. Installations of this software for these operating systems are similarly programed to an auto-run mode. Iit is typically designed to improve performance of the storage sub-system and overall system performance. Below is a 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.

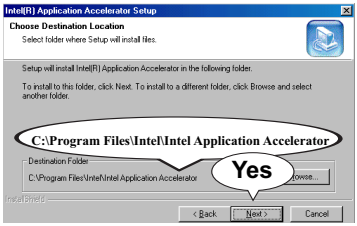
2. On the "InstallShield Wizard" screen, Click on "Next" to continue.



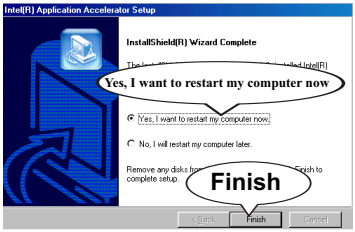
3. On the "Licence Agreement" screen, click on "Yes" to continue.



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



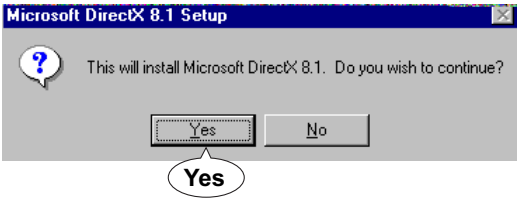
5. On ”InstallShield Wizard Complete” screen, choose “Yes, I want to restart my computer now” and press “finish” to restart. Remember you must restart computer to put setup into effect.



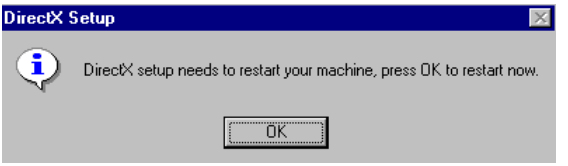
3-4 DirectX Installation

Following the installation of IAA, you have to restart system so that your system can be reconfigured with the driver just installed. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu.
Then click to “Install DirectX”. This utility will support a better graphic display of the built-in VGA interface.

1. When the screen of “Microsoft DirectX 8.X Setup” appears, please press “Yes” button to continue.



3. After all the setup procedures have completed, click to “Finish” button to exit the Installation program and re-start your system.



3-5 Graphics Driver Installation

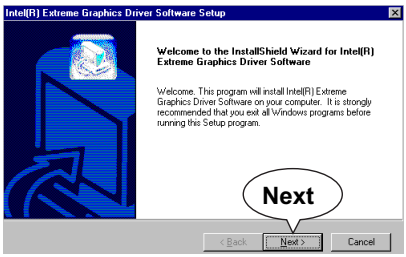
Following the installation of DirectX, you have to restart system so that your system can be reconfigured with the utility. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu.

---

1. For installation of on-board VGA driver, you must first connect the monitor to the on-board VGA connector. Then click to “Install Graphics Driver”. The Graphics Driver is specifically for on-board VGA.

---

2. When the screen of “Intel(R) Extreme Graphics Driver Software Setup” appears, please press “Next” button to continue.



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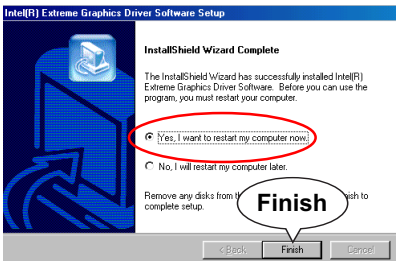
3. After all the setup procedures have completed, click to “Finish” button to exit the Installation program and re-start your system.

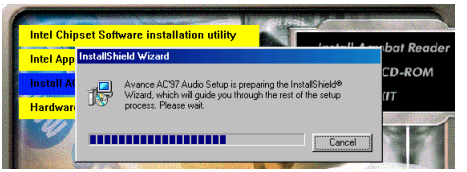


3-6 AC'97 Audio Driver Installation

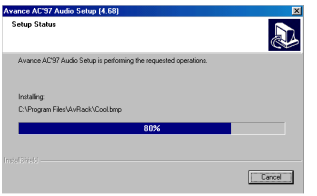
Avance AC97 Audio Codec on board, AC'97 2.2 compatible stereo audio code for PC multimedia systems. Avance AC'97 Audio Codec Driver is provided in Support CD for user's installation.

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

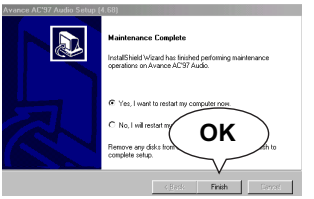
2. Instantly, the "installShield Wizard" screen appears to guide you through the "Avance AC'97 Audio Setup"".



3. instantly, the Setup program proceeds to install the softwares which include AC'97 driver and AVRack. (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.



3-7 Install Hardware Monitor Utility

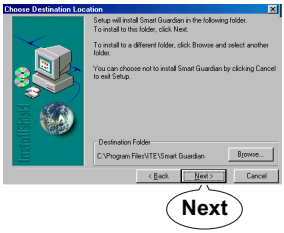
3-7.1 Installation

Hardware Monitor is built in chip IT8712F of this series. 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.

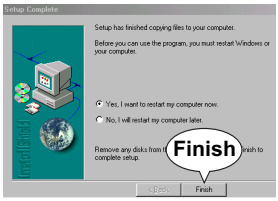
2. Instantly the " Smart Guardian Setup" screen appears to announce the setup of Hardware Monitor software "Smart Guardian".

3. Next, the Setup Program will suggest to you the destination directory where the "Smart Guardian" will be installed. Select the Program folder and click "Next" to continue.



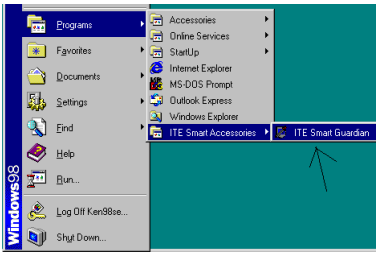
4. Instantly, Setup Program starts to copy files and install the software.

4. In one or two second, the "Setup complete" screen appears. Click "Finish" to restart your computer so that the Utility can be put into effect.

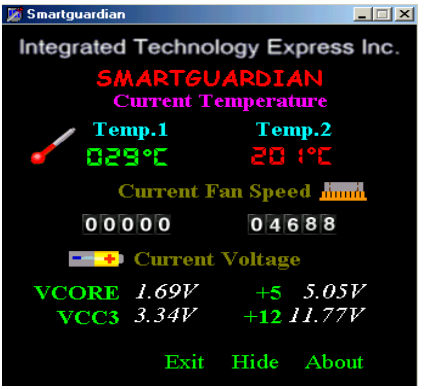


3-7.2 Verification

1. After restarting your computer, click “Start” and choose the path \Programs \ITE Smart Accessories\ITE Smart Guardian to open the main window of the Hardware Doctor.



2. Instantly, the Smartguardian Main Panel appears, telling you the CPU current temperature, CPU current Voltage and Current fan speed.



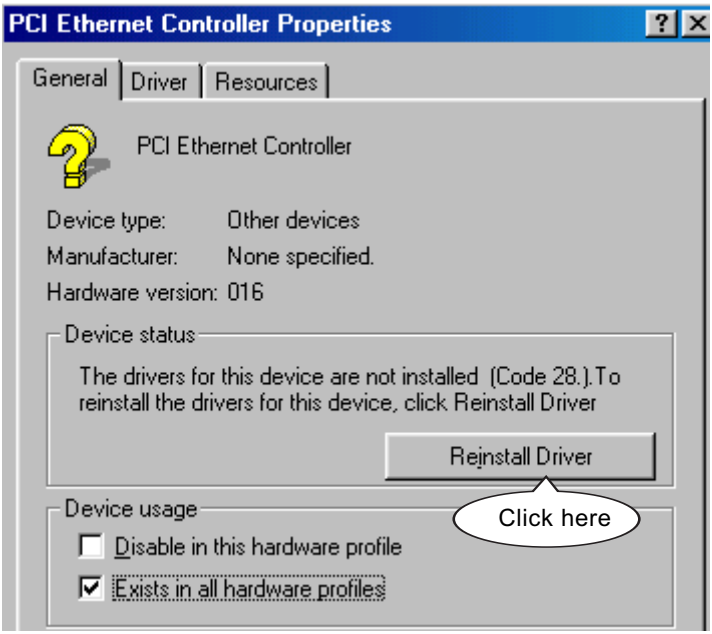
3-8 Install LAN Drivers (for 85MIR-L only)

3-8-1. RTL8139C LAN driver on Windows 9X

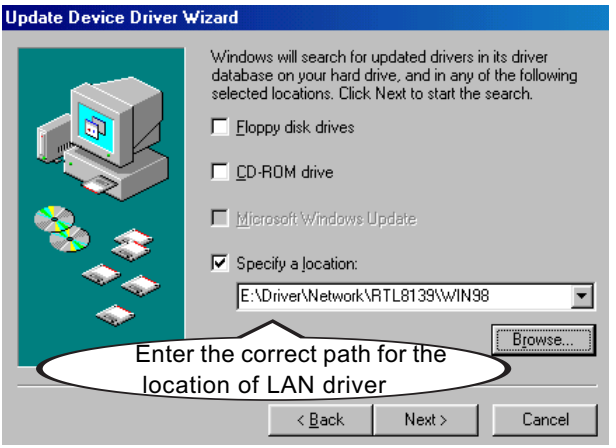
The LAN driver contained in the Support CD is not included in the Autorun Menu. To install RTL8139C LAN driver on Windows 9X, please follow the steps shown below:

1. On the “Start” screen of your system, please click to the following path:

   \My Computer\properties\Device manager
2. In the “Device manager” screen, you can see the item “ PCI Ethernet Controller” with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for this on-board RTL8139C Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).
3. Instantly, the “PCI Ethernet Controller Properties“ screen shows up. Please click the “General” bar to continue.
4. In the “General” screen, click “reinstall Driver” button to continue. Please note that the status of “Device Usage” should stay at “Exists in all hardware profiles”.



5. In the “Update device Driver Wizard” screen, click “Next” to continue until you see a dialog box asking you to “Specify a location” for the driver. You should **now** insert the Support CD into your CD-ROM.
6. As illustrated in the picture below, check the item “Specify a location” and click the “Browse” button to find out the correct path for the driver. Supposing your CD-ROM drive is Drive E, please type: E:\Driver\Network\RTL8139\Win98 into the blank bar. (Please note that both RTL8139C and RTL8139C controllers are supported by Driver RTL8139.) Then click the “Next” button to continue.



7. The Update Device Driver Wizard will then go on installing the driver, until the “Insert Disk” dialog box shows up. Please withdraw your Support CD and insert the Win 98 CD-ROM into the CD-ROM drive for updating system and click “OK” to continue.
8. The Update Device Driver Wizard will then proceed to update the system with the LAN driver. When the “Finish” screen shows up, click “Finish” to continue.
9. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click “Yes” to restart system and finish the LAN driver installation.

3-8-2. RTL8139C LAN driver on Windows NT4.0

1. When you newly install Win NT4, the Setup program will ask you whether your computer will participate on a network. please check "Do not connect this computer to a network at this time" and continue with your installation. That means, you are going to install the LAN Adapter and driver after you have finished system installation. By this way, you will set up your LAN Adapter and driver more surely.
2. If you have now installed Win NT4 in your computer, please boot your system and in the "Start" screen click the following path to install your computer networking:
   \Start\Settings\Control Panel\Network (double click)
3. Instantly, a dialog box pops up, asking you, "Windows NT Networking is not installed. Do you want to install it now?" Please click "Yes" to continue.
4. The Network Setup Wizard will then proceed to guide you to the installation of LAN Adapter and Driver, until the "Select Network Adapter" screen pops up, on which you should click "Have Disk" to install the on-board RTL8139C LAN Controller.
5. Instantly, the "Insert Disk" dialog box pops up. You should **now** insert the Support CD into your CD-ROM drive, and then type to the white bar the correct path for the location of the LAN driver. Supposing your CD-ROM drive is drive D, please type the following path:
   D:\Driver\Network\RTL8139\Winnt4 and click "OK" button to continue. (Controller RTL8139C is supported by Driver RTL8139)
6. Instantly, the Setup program detects the "Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet Adapter" and shows it on the "Select OEM Option" screen. Please click "OK" to continue.
7. The Setup program will then proceed to install the RTL8139 Adapter and then other networking components such as TCP/IP protocol.
8. During the setup process, if "windows NT Setup" needs to copy some Windows files, you should then withdraw the Support CD and insert back the Win NT4 CD-ROM into your CD-ROM drive to continue.
9. After you have finished other networking components setup, you should restart your system to put all the new setups into effect.

10. To verify that the onboard RTL8139C Controller has been set up in system, please click “Start”, then “Control Panel”, then “Network”.

11. In the “Network” screen, click the “Adapter” bar. You can now see the “Realtek RTL8139(A/B/C/8130) PCI Fast Ethernet Adapter is already installed in system.

3-8-3. RTL8139C LAN driver on Win ME / 2000 / XP

1. When you newly install Windows ME , Windows 2000or windows XP, the system will detect the LAN Controller on board and configure it automatically into system. Therefore, users need not bother to install the LAN controller into these operating systems.
2. To verify the existence of RTL8139C Controller and Driver, please enter the “Control Panel” of your system and click “Network” to open the “Configuration” screen. You can then see the “Realtek8139 (A/B/C) PCI Fast Ethernet Adapter” is already installed in system.

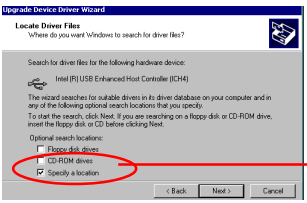
3-9 Install USB 2.0 Driver for Win2000 or WinXP

USB V2.0 with its 480Mb/s transfer rate supports operating system Win2000 and WinXP with Intel USB drivers and Microsoft USB drivers. USB Driver installation procedures are of similar steps in Win2000 and WinXP. The point is the Intel USB drivers are already open toIntel Chipset users, while Microsoft USB drivers are to be found in the Win 2K and Win XP Service pack. User should install the latest Service Pack for Win 2K or Win XP before installing the Intel USB2.0 driver. The following procedures are for installation of USB2.0 drivers on both Win 2K and Win XP:

1. In Win2000 or WinXP, install the latest Service Pack version into the operating system (latest Service Pack can be found in Microsoft Web Site).
2. After installation of the Service Pack, insert the Mainboard Support CD into CD-ROM for installation of the USB2.0 driver.
3. Take the following path to search for the USB 2.0 driver for installation:

   \My Computer(right click of Mouse)\Properties\
   Hardware\Device Manager\
   Universal Serial Bus(USB) Controller (left double click of Mouse)\
   Driver\Update Driver\

4. Instantly the “Upgrade Device Driver Wizard” will show up on screen. Click “Next” to continue.
4. Instantly, the Wizard Program will guide you through to search for the USB driver.
5. The following “Upgrade Device Driver Wizard” screen will appear. Tick “Specify a Location” and mouse click “Next” button to continue.



“Specify a Location” of driver in “Win2000”.

“Specify a Location” of driver in “WinXP”.

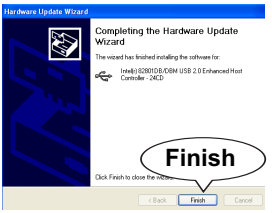
6. When a dialog box pops out, asking user to key in the correct path for Intel_USB2.0 driver, please type the following path and mouse click “OK” button to install the Intel_USB 2.0 driver:

   For both Win2000 and Win XP:

   d:\driver\usb20\Intel_USB20

   (supposing the CD-ROM Drive holding the Support CD is Drive D)

7. After clicking “OK” button, the program will go on installing Intel_USB20” driver until installation completes.When the following screen appears. Click “Finish” to complete the installation, and your system supports USB 2.0 now.



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 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 Update Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Upgrade Utility can also be run from a hard disk drive or a network drive.

4-5.1 Before Updating BIOS

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

4-5.2 Update Process

- Normally, to update BIOS is unnecessary if the system is working fine. Users should only upgrade 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 flash utility "AMIFLASH.EXE". 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 "AMIFLASH.EXE" into the diskette.

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

Step 4. Type **AMIFLASH *.ROM** and then press <Enter> to run BIOS update program. (*.ROM will vary, depending on your mainboard model and version code. Instead of typing "*", you should type specific file name for your specific mainboard. For example: AMIFLASH(space) 85MIR11.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. BIOS update is complete now.

4-6 BIOS SETUP --- CMOS Setup Utility

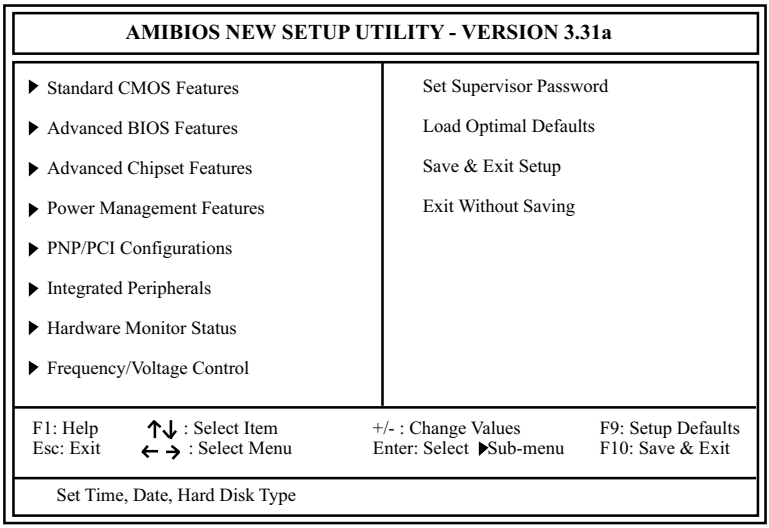
4-6.1 CMOS Setup Utility

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.



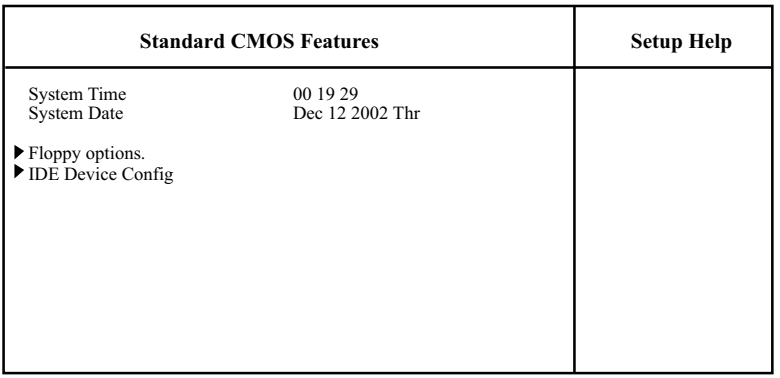
3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, “Save & Exit Setup” saves your changes and reboots the system, 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 & 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	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 & 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 / disable quick boot of your system.

Delay for Hard Drive (Sec.) Allows you to set more time for detecting hard drive. Choices: 1~10 seconds

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 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 re-starting system.
Choices: Setup; 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 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 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	
APIC Interrupt Mode	Enabled	
Internal Graphics Mode Select	1MB	
AGP Aperture Size	64MB	
USB Controller	6 USB Ports	
USB 1.1 Device Legacy Support	Disabled	
USB 1.1 Port 64/60 Emulation	Disabled	
Display Setting		
Boot display Device	Auto	
Flat Panel Type	1	
TV Standard	Auto	
Flat Panel Scaling	Auto	

F1: Help ↑↓ : Select Item +/- : Change Values F9: 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:

<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: 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: 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.

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

Internal Graphic Mode Select Allows you to set the internal graphic mode.
Choices: 512KB; 1MB; 8MB; 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; 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 Devices; Disabled

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

Boot display Device Allows you to select the Boot isplay device.
Choices: Auto; CRT; TV; EFP; CRT+EFP;

Flat panel Type Allows you to select the flat panel type.
Choices: 1~12

TV Standard Allows you to select the TV standard.
Choices: Auto; NTSC; PAL; SECAM

Flat Panel Scaling Allows you to select the mode for flat panel scaling.
Choices: Auto; Force Scaling; Disabled

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	
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	Last State	
Resume On Ring	Disabled	
Resume On LAN/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 & 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 supports S1 (POS) for Power on Suspend mode under Windows 98 and up.

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 (in other words, an incoming call on the modem) Awakens the system from a soft off state.

Resume on LAN/PME# Allows you to enable / disable the Resume on LAN/ PME function.

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 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/Int-VGA	
PCI IDE Busmaster	Disabled	
PCI Slot1 IRQ Priority	Auto	
PCI Slot2 IRQ Priority	Auto	
PCI Slot3 IRQ Priority	Auto	

F1: Help ↑↓ : Select Item +/- : Change Values F9: 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:

<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; 64; 96; 192; 128; 160; 192; 224; 248;

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

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

PCI Slot 1/2/3/ IRQ Priority Allows you to specify the IRQ 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 NEW SETUP UTILITY - VERSION 3.31a

Integrated Peripherals		Setup Help
Onboard IDE	Both	
Onboard LAN (optional)	Enabled	
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 Power-on 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 & 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

(Optional)Onboard LAN If there is built-in LAN on board, this item allows you to enable / disable onboard LAN.
Choices: Enabled; Disabled

Onboard AC'97 Audio Allows you to disable AC' 97 Audio.
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; IrDA; 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 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 IRQ to IRQ 5.

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

Keyboard Power-on Function Allows you to configure the Keyboard Power-on Function.
Choices: Disabled; By Stroke Key; By Password.

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 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 3.31a

Hardware Monitor Status		Setup Help
Temperature 1	44 °C/111 °F	
Temperature 2	55 °C/131 °F	
Temperature 3	0 ˚C/32 ˚F	
Fan 1 Speed	4891 RPM	
Fan 2 Speed	4905 RPM	
Fan 3 Speed	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 & 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 2.01a

Frequency/Voltage Control		Setup Help
RedStorm Overclocking Tech (Optional)	(Press “Enter”)	
CPU Ratio Selection	Locked	
CPU Linear Frequency	Disabled	
CPU Clock	100 MHz	
PCI Clock Auto Detection	Disabled	
Spread Spectrum Selection	Disabled	

F1: Help ↑↓ : Select Item +/- : Change Values F9: 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:

<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 unacceptable 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 CPU ration, 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 at Enabled, this item allows you to set CPU Clock.
Choices: 100MHz ~200MHz in 1MHz stepping.

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>.

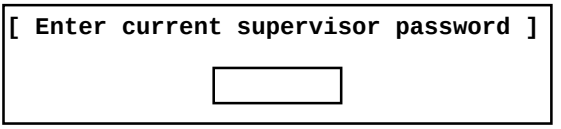
5. The following message appears to confirm the new password setup.

[New supervisor password installed]
Any Key to Continue

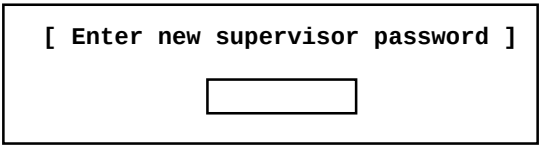
6. Then press any key to continue your CMOS Setup. To save the password setup, you should press “Save & Exit Setup” and choose “yes” to exit and save setup.

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.

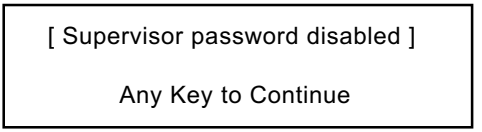
8. To change or remove a current supervisor password, choose “Set Supervisor Password” and press <Enter>. An instruction box appears on the screen, prompting you to enter the current password first:



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:

[Load Optimized Defaults]

Press [Enter] to continue
or [ESC] to abort

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:

[Saving current settings and exit]

Press [Enter] to continue
or [ESC] to abort

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:

[Quit Without Saving Changes]

Press [Enter] to continue
or [ESC] to abort

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