MSI

K7T266 Pro2 Series

MS-6380 ATX Mainboard

Version 2.1

G52-MA00434

Manual Rev: 2.1
Release Date: October 2001

CE   **N1996**

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
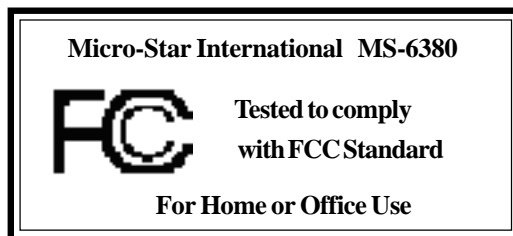
Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

Micro-Star International MS-6380	
FC	**Tested to comply** **with FCC Standard**
For Home or Office Use	

Edition

October 2001

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Revision History

Revision	Revision History	Date
2.1	Modify PCB layouts	October 2001
	Add USB2.0 note in chapter 2	

Safety Instructions

1. Always read the safety instructions carefully.
2. Keep this User's Manual for future reference.
3. Keep this equipment away from humidity.
4. Lay this equipment on a reliable flat surface before setting it up.
5. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.
6. Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
7. Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
8. Always Unplug the Power Cord before inserting any add-on card or module.
9. All cautions and warnings on the equipment should be noted.
10. Never pour any liquid into the opening that could damage or cause electrical shock.
11. If any of the following situations arises, get the equipment checked by a service personnel:
    ● The power cord or plug is damaged
    ● Liquid has penetrated into the equipment
    ● The equipment has been exposed to moisture
    ● The equipment has not work well or you can not get it work according to User's Manual.
    ● The equipment has dropped and damaged
    ● If the equipment has obvious sign of breakage
12. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0C (140^0F), IT MAY DAMAGE THE EQUIPMENT.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

CONTENTS

Introduction

1

The K7T266 Pro2 (MS-6380 v2.X) series ATX mainboards are high-performance computer mainboards based on **VIA® Apollo KT266A (VT8366A & VT8233)** chipset and designed for the **AMD® Athlon™**, **Athlon XP** or **Duron™** (PGA) processor for inexpensive business/personal desktop markets.

Four models are available for K7T266 Pro2 series motherboards. They are **K7T266 Pro2**, **K7T266 Pro2-R**, **K7T266 Pro2-U** and **K7T266 Pro2-RU**. K7T266 Pro2 is the standard version. In addition to standard features, K7T266 Pro2-R adds support for IDE RAID function, while K7T266 Pro2-U does not support IDE RAID function, but comes with support for the newest high-bandwidth USB 2.0 technology. The model, K7T266 Pro2-RU, not only supports USB 2.0 function but also integrates IDE RAID technology on the board.

These models provide rich flexibility in meeting consumers' diverse needs for VIA® Apollo KT266A-based motherboards.

This chapter includes the following topics:

Mainboard Specification

CPU
- Supports Socket A (Socket-462) for AMD® Athlon™/Athlon™ XP / Duron™ processor
- Supports 800MHz up to 1800+ MHz processor

Chipset
- VIA® VT8366A chipset (552 BGA)
  - FSB @200/266MHz
  - AGP 4X and PCI Advanced high performance memory controller
- VIA® VT8233 chipset (376 BGA)
  - High Bandwidth V-link Client controller
  - Integrated Faster Ethernet LPC
  - Integrated Hardware Sound Blaster/Direct Sound AC97 audio
  - Ultra DMA 33/66/100 master mode PCI EIDE controller
  - ACPI

Clock Generator
- 100/133MHz clocks are supported.

Main Memory
- Supports six memory banks using three 184-pin DDR DIMMs
- Supports a maximum memory size up to 3GB
- Supports 2.5v DDR SDRAM DIMM

Slots
- One AGP slot
  - AGP (Accelerated Graphics Port) specification compliant
  - Supports AGP 2.0 1x/2x/4x
- One CNR (Communication Network Riser) slot
- Five 32-bit Master PCI Bus slots
- Supports 3.3V/5V PCI bus Interface

On-Board IDE
- An IDE controller on the VIA® VT8233 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66/100 operation modes
- Can connect up to 4 IDE devices

Promise 20265R On-Board (K7T266 Pro2-R, K7T266 Pro2-RU)
● Supports IDE RAID 0 or 1
● The two IDE RAID connectors support hard disk drives only
Note: Only two hard disk drives will adopt RAID function.

USB Interface
● **K7T266 Pro2-U, K7T266 Pro2-RU:** 4 USB 2.0 ports, 4 USB 1.1 ports
● **K7T266 Pro2, K7T266 Pro2-R**: 6 USB 1.1 ports

Audio
● Chip integrated (2 channel S/W audio)
    - Direct Sound AC97 Audio

On-Board Peripherals
● On-Board Peripherals include:
    - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and
      2.88Mbytes
    - 2 serial ports (COMA + COMB)
    - 1 parallel port supporting SPP/EPP/ECP mode
    - 1 IrDA connector for SIR/ASKIR/HPSIR
    - 1 Audio/Game port
    - 1 D-Bracket™ header

BIOS
● The mainboard BIOS provides "Plug & Play" BIOS which detects the
  peripheral devices and expansion cards of the board automatically.
● The mainboard provides a Desktop Management Interface (DMI) func-
  tion which records your mainboard specifications.

Special Feature
● MSI Smart Key (OPTIONAL)

Dimension
● ATX Form Factor (30.4 cm X 23.5 cm)

Mounting
● 6 mounting holes

Mainboard Layout

Top : mouse
Bottom: keyboard

USB ports

JKBV1

ATX Power Supply

CFAN1

PSFAN1

SOCKET 462

Top : Parallel Port

Bottom:
COM A
COM B

VT8366A

FDD 1

IDE 1

IDE 2

Top :
Game port

Bottom:
Line-Out
Line-In
Mic

J3

AGP Slot

DDR 1

DDR 2

DDR 3

BATT +

PCI Slot 1

Winbond
W83627HF-AW

J4

PCI Slot 2

BIOS

PCI Slot 3

VT8233

JBAT1

PCI Slot 4

SFAN1

Codec

PCI Slot 5

CNR

JAUX

JUSB2

JMDM

JCD

J12

JUSB3

JWOL1

JMDM1

J7

JFP1

JGL1

K7T266 Pro2 ATX Mainboard
(MS-6380 v2.X)

1-4

Top : mouse
Bottom: keyboard

CFAN1

PSFAN1

SOCKET 462

USB ports

JKBV1

ATX Power Supply

Top : Parallel Port

Bottom: COM A COM B

VT8366A

FDD 1

IDE 1

IDE 2

Top : Game port

Bottom: Line-Out Line-In Mic

J3

AGP Slot

DDR 1

DDR 2

DDR 3

BATT +

PCI Slot 1

Winbond W83627HF-AW

J4

PCI Slot 2

BIOS

PCI Slot 3

VT8233

JBAT1

PCI Slot 4

SFAN1

J6

Codec

PCI Slot 5

PROMISE 20265R

IDE 4

IDE 3

CNR

JMDM1

J7

JAUX

JUSB2

JWOL1

JFP1

JMDM

JCD

J12

JUSB3

JGL1

K7T266 Pro2-R ATX Mainboard
(MS-6380 v2.X)

Top : mouse
Bottom: keyboard

CFAN1

PSFAN1

SOCKET 462

USB
ports

JKBV1

ATX
Power Supply

Top : Parallel Port

Bottom:
COM A
COM B

FDD 1

IDE 1

IDE 2

Top :
Game port

Bottom:
Line-Out
Line-In
Mic

VT8366A

J3

AGP Slot

DDR 1

DDR 2

DDR 3

BATT
+

PCI Slot 1

Winbond
W83627HF-AW

J4

PCI Slot 2

BIOS

PCI Slot 3

VT8233

JBAT1

PCI Slot 4

SFAN1

Codec

PCI Slot 5

CNR

JUSB1

NEC
USB2.0
Host
Controller

JMDM1
J7

JWOL1

JFP1

JAUX

JUSB2

JMDM

JCD

J12

JUSB3

JGL1

**K7T266 Pro2-U ATX Mainboard
(MS-6380 v2.X)**
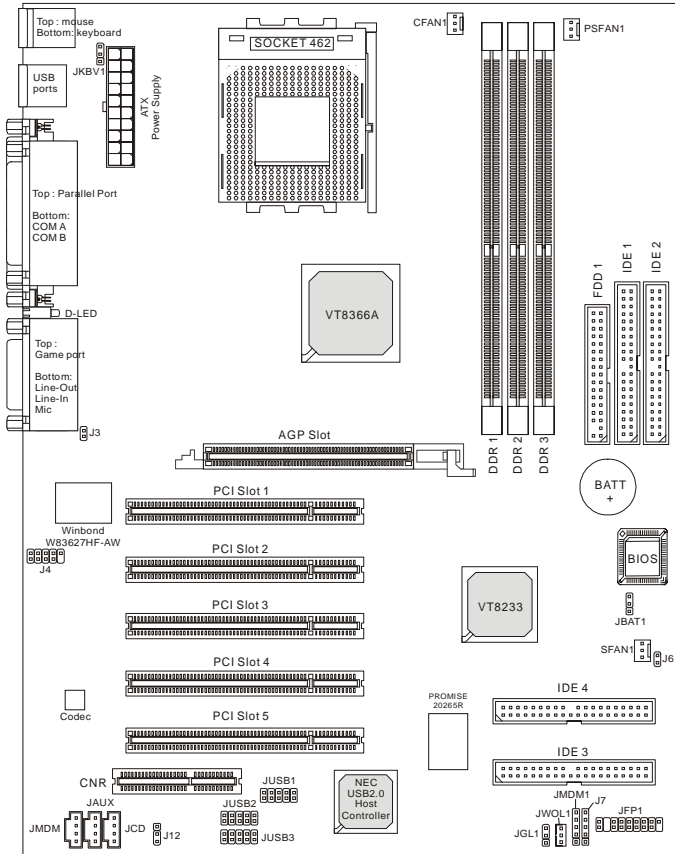
K7T266 Pro2-RU ATX Mainboard
(MS-6380 v2.X)

Chapter 1

Quick Components Guide

Component	Function	Reference
DDR1~3	Installing DDR SDRAM modules	See p. 2-5~2-6
Socket 462	Installing CPU	See p. 2-2~2-4
CFAN1	Connecting to CPUFAN	See p. 2-22
SFAN1	Connecting to SYSTEM FAN	See p. 2-22
PSFAN1	Connecting to Power Supply FAN	See p. 2-22
ATX Power Supply	Installing power supply	See p. 2-7
IDE1 & IDE2	Connecting to IDE hard disk drive	See p.2-13
IDE3 & IDE4	Connecting to IDE RAID HDD	See p.2-14
FDD1	Connecting to floppy disk drive	See p.2-12
JUSB1~3	Connecting to USB interfaces	See p. 2-23~2-25
PCI Slot 1~5	Installing expansion cards	See p. 2-30
AGP Slot	Installing AGP cards	See p. 2-30
CNR Slot	Installing expansion cards	See p. 2-30
JMDM1	Connecting to modem module	See p. 2-18
JWOL1	Connecting to LAN card	See p. 2-18
JBAT1	Clearing CMOS data	See p. 2-27
JFP1	Connecting to case	See p. 2-15
JGL1	Connecting to power saving LED	See p. 2-17
J7	Connecting to IR module	See p. 2-19
J3	Connecting to chassis intrusion switch	See p. 2-20
J4	Connecting to D-Bracket™	See p. 2-26
J6	Connecting to IDE RAID HDD LED	See p. 2-19
JKBV1	Enabling PS/2 Keyboard/Mouse/**Rear USB** wake up function	See p. 2-28
J12	Enabling **Front USB** device wake up function	See p. 2-29

Key Features

- ATX Form Factor
- CPU: Socket A for AMD® Duron™/Athlon™/Athlon XP processor
- Memory: 3 PC1600/PC2100 DDR DIMMs
- Slot: 1 AGP slot, 1 CNR slot, 5 PCI slots
- **K7T266 Pro2 & K7T266 Pro2-R** I/O: 2 serial ports. 1 parallel port, 6 USB 1.1 ports, 1 floppy port, 1 IrDA connector, 3 Audio/1 Game port
- **K7T266 Pro2-U & K7T266 Pro2-RU** I/O: 2 serial ports. 1 parallel port, 4 USB 1.1 & 4 USB 2.0 ports, 1 floppy port, 1 IrDA connector, 3 Audio/ 1 Game port
- 2 IDE RAID connectors (**K7T266 Pro2-R, K7T266 Pro2-RU**)
- Fuzzy Logic™ III overclocking utility
- D-LED™ -- 4 LEDs embedded in the mainboard (OPTIONAL)
- PC Alert™ III system hardware monitor
- Audio: 2 Channel S/W audio integrated
- PCI 2.2 LAN Wake up Function
- Modem (External/Internal) Ring Wake up Function
- Supports D-Brackt™
- MSI Smart Key (OPTIONAL)

MSI Special Features

PC Alert™ III

The PC Alert™ III is a utility you can find in the CD-ROM disk. The utility is just like your PC doctor that can detect the following PC hardware status during real time operation:

    * monitor CPU & system temperatures
    * monitor fan speed(s)
    * monitor system voltage
    * monitor chassis intrusion

If one of the items listed above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This screen will continue to be shown,until user disables the warning.
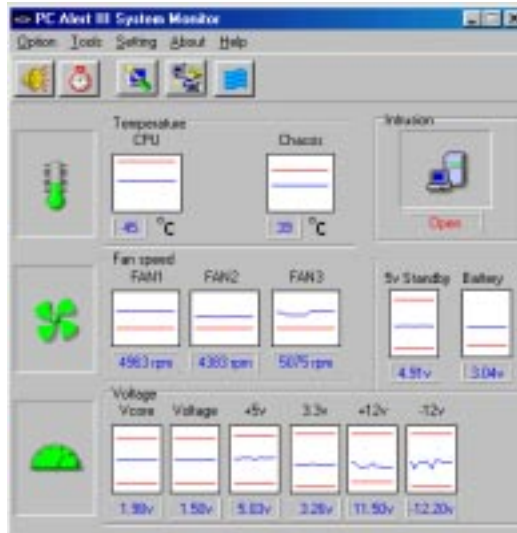
Note: Items shown on PC Alert III vary depending on your system's status.

Features:
- Network Management
  - Monitoring & remote control
- Basic System Utilities
  - Scandisk & Defragment to maintain your HDD
- 3D Graphics Design
  - Enables a more friendly user interface
- Sofware Utilities
  - SoftCooler Optimized Cooling

Fuzzy Logic™ III

The Fuzzy Logic™ III utility allows users to overclock the CPU FSB (Front Side Bus) frequency in the Windows environment. Select the CPU frequency you prefer and click Go to apply the frequency or click Save allowing the system to run at the specified frequency each time when the system is powered on.


Features:
- Displays Current System Status
  - CPU Fan
  - CPU Temp.
  - Vcore
  - Vio
  - Memory Clock
  - CPU Clock
  - AGP Clock
  - PCI Clock
- Adjusts CPU FSB Frequency

D-LED™ (Optional) & D-Bracket™

The D-LED™ uses graphic signal display to help users understand their system. Four LEDs embedded in the mainboard provide up to 16 combinations of signals to debug the system. The 4 LEDs can debug all problems that fail the system, such as VGA, RAM or other failures. This special feature is very useful for the overclocking users. These users can use the feature to detect if there are any problems or failures.
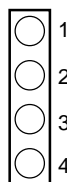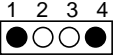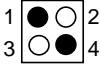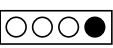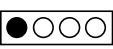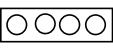

Diagnostic LED

The D-Bracket™, which integrates four Diagnostic LEDs, is optional. The definitions of the D-Bracket™ LED signals are the same as D-LED™.

● **Red**   ○ **Green**

D-LED	D-Bracket	Description
1 2 3 4 ●●●●	1 ●● 2 / 3 ●● 4	System Power ON - The D-LED will hang here if the processor is damaged or not installed properly.
○●●●	○● / ●●	Early Chipset Initialization
●○●●	●● / ●●	Memory Detection Test - Testing onboard memory size. The D-LED will hang if the memory module is damaged or not installed properly.
○○●●	○○ / ●●	Decompressing BIOS image to RAM for fast booting.
●●○●	●● / ○●	Initializing Keyboard Controller.
○●○●	○● / ○●	Testing VGA BIOS - This will start writing VGA sign-on message to the screen.

Chapter 1

D-LED	D-Bracket	Description
1 2 3 4 ● ○ ○ ●	1 ● ○ 2 3 ○ ● 4	Processor Initialization - This will show information regarding the processor (like brand name, system bus, etc…)
○ ○ ○ ●	○ ○ ○ ●	Testing RTC (Real Time Clock)
● ● ● ○	● ● ● ○	Initializing Video Interface - This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter.
○ ● ● ○	○ ● ● ○	BIOS Sign On - This will start showing information about logo, processor brand name, etc….
● ○ ● ○	● ○ ● ○	Testing Base and Extended Memory - Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.
○ ○ ● ○	○ ○ ● ○	Assign Resources to all ISA.
● ● ○ ○	● ● ○ ○	Initializing Hard Drive Controller - This will initialize IDE drive and controller.
○ ● ○ ○	○ ● ○ ○	Initializing Floppy Drive Controller - This will initializing Floppy Drive and controller.
● ○ ○ ○	● ○ ○ ○	Boot Attempt - This will set low stack and boot via INT 19h.
○ ○ ○ ○	○ ○ ○ ○	Operating System Booting

Hardware Setup

2

      This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

      Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

      This chapter contains the following topics:

Central Processing Unit: CPU

The mainboard supports AMD® Athlon™, Athlon XP and Duron™ processors. It uses a CPU socket called Socket A for easy CPU installation. **Make sure the CPU has a Heat Sink and a cooling fan attached on the top to prevent overheating.** If you do not find the Heat Sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

CPU Installation Procedures

1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.

Open Lever

Sliding Plate

2. Look for the cut edge. The cut edge should point towards the lever pivot. The CPU will only fit in the correct orientation.

Cut edge

3. Hold the CPU firmly, and then press the lever down to complete the installation.

Close Lever
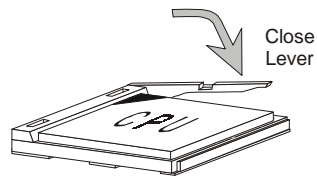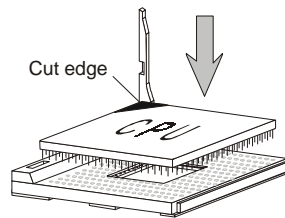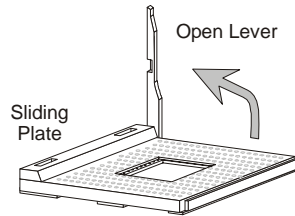
WARNING! Thermal Issue for CPU

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable operation. As such, the processor must be maintained in the specified thermal requirements. AMD recommends the use of high performance thermal interface material.

AMD Athlon™/Duron™ processor with a speed of **600MHz and above** requires LARGER heatsink and fan. You also need to add thermal grease between the CPU and heatsink to improve heat dissipation. Then, make sure that the CPU and heatsink are securely fastened and in good contact with each other. These are needed to prevent damaging the processor and ensuring reliable operation.

You can visit AMD's web site for more information on proper cooling: *http://www.amd.com/products/cpg/athlon/pdf/cooling_guide.pdf*

CPU Core Speed Derivation Procedure

If	CPU Clock	=	100MHz
	Core/Bus ratio	=	7
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	100MHz x 7
		=	700MHz

CPU Clock Frequency Selection through BIOS

To set the clock frequency of the CPU installed on the motherboard, refer to *Hardware Monitor Setup* of BIOS on page 3-27.

The default hardware configuration for CPU Clock Frequency is set at 100MHz. Therefore, to use a 133MHz CPU and have it run at 133MHz, you need to adjust the CPU clock up to 133MHz by changing the CPU clock in the BIOS Setup utility.

> **STOP**
> **WARNING!**
>
> *Replacing CPU*
> *While replacing the CPU, always turn off the ATX power supply or unplug the power cable of the ATX power supply from grounded outlet first to ensure the safety of CPU.*
>
> *Overclocking*
> *This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended.* ***We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Memory

The mainboard provides 3 sockets for 184-pin unbuffered DDR DIMM (Double In-Line Memory Module) modules and supports a maximum memory size of 3GB.

DDR DIMM Slots
(DDR 1~3)
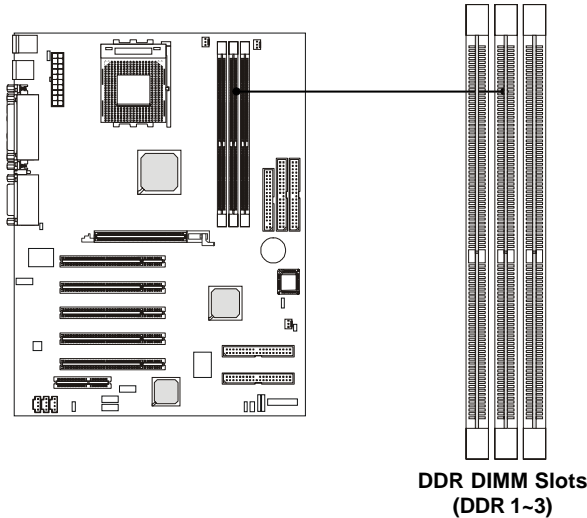
Introduction to DDR SDRAM

You can install PC1600/PC2100 DDR SDRAM modules on the DDR DIMM slots (DDR 1~3).

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transfering data twice per cycle. It transfers data on both the rising and falling edges of the clock. Conventional SDRAM only uses the rising edge of the clock to transfer data. Therefore, conventional SDRAM is called SDR (Single Data Rate) SDRAM.

DDR SDRAM uses 2.5 volts as opposed to 3.3 volts used in SDR SDRAM, and requires 184-pin DIMM modules rather than 168-pin DIMM modules used by SDR SDRAM. DDR SDRAM is also known as SDRAM-II, DDR DRAM and DSDRAM (Double-Speed DRAM).

Two types of DDR are available at the time of writing: PC1600 & PC2100. PC1600 DDR SDRAM running at 100MHz will produce about 1.6GB/s memory bandwidth. PC2100 running at 133MHz will produce 2.1GB/s memory bandwidth. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

DIMM Modules Combination

At least one DIMM module should be installed on the motherboard. Memory modules can be installed on the slots in any order. The single-/ double-sided memory modules that each DIMM slot supports are listed as below:

S (Single Side): 64MB ~ 512MB
D (Double Side): 128MB ~ 1GB

DDR 1	DDR 2	DDR 3
S/D	S/D	S/D

Installing DIMM Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.

Front Side   **Rear Side**

2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.

Volt
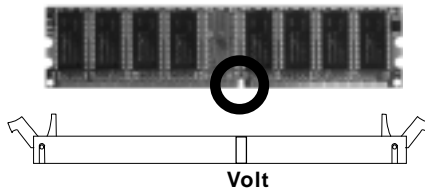
3. The plastic clip at each side of the DIMM slot will automatically close.

Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Supply

This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.
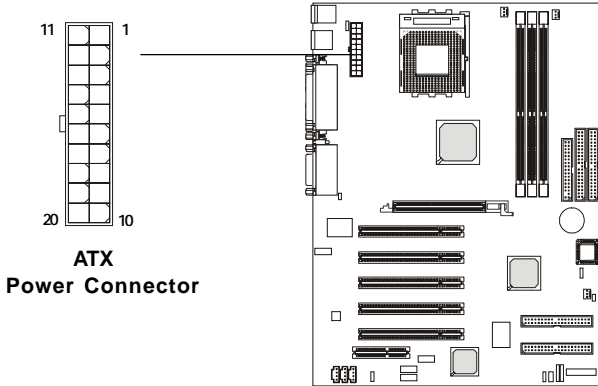
**ATX
Power Connector**

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

Back Panel

The Back Panel provides the following connectors:

Mouse   **Parallel**   **Midi/Joystick**

Keyboard   **USB**   **COM A**   **COM B**   **L-out** **L-in** **MIC**
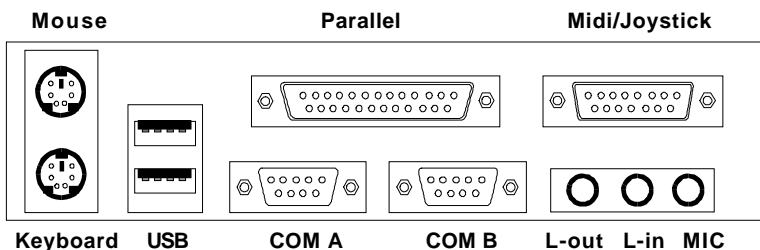
Mouse Connector

The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector.

Pin Definition

6   **5**
4   **3**
2   **1**

PS/2 Mouse (6-pin Female)
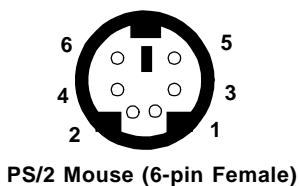
PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

Keyboard Connector

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection
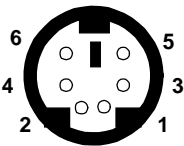
PS/2 Keyboard (6-pin Female)

USB Connectors

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into ths connector.
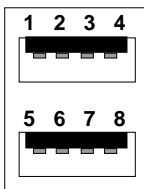
USB Port Description

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

USB Ports

Parallel Port Connector

The mainboard provides a 25-pin female centronic connector for LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.
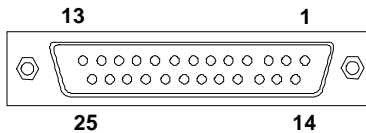
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

Serial Port Connectors: COM A & COM B

The mainboard has two 9-pin male DIN connectors for serial port COM A and COM B. You can attach a serial mouse or other serial devices.

1 2 3 4 5

6 7 8 9
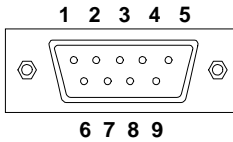
9-Pin Male DIN Connectors

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready)
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

Joystick/Midi Connectors

You can connect a joystick or game pad to this connector.
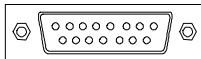
Audio Port Connectors

Line Out is to connect speakers or headphones. *Line In* is a connector for external CD player, Tape player or other audio devices. *Mic* is used to connect to a microphone.

Line Out   Line In   MIC
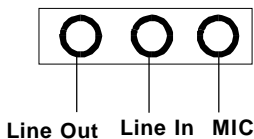
Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, modem, USB Ports, IR module and CPU/Power supply/System FAN.

Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.

FDD1
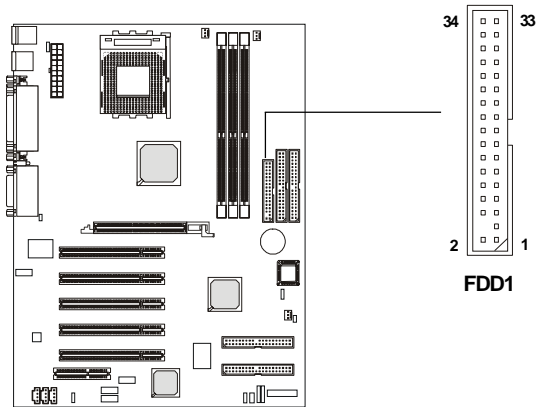
Hard Disk Connectors: IDE1 & IDE2

      The mainboard uses an IDE controller on the VIA® VT8233 chipset that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100 modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

IDE1 (Primary IDE Connector)
 - The first hard disk drive should always be connected to IDE1. You can
   connect a Master and a Slave drive to IDE1.
IDE2 (Secondary IDE Connector)
 - You can connect a Master and a Slave drive to IDE2.
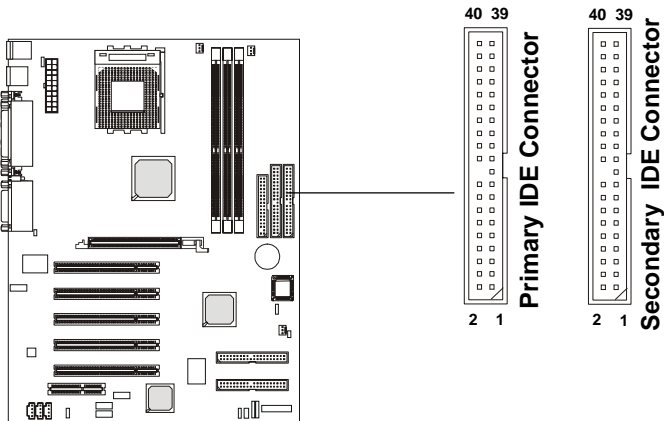
> *If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

IDE RAID Connectors: IDE3 & IDE4 (K7T266 Pro2-R, K7T266 Pro2-RU)

      The mainboard offers a low-cost RAID (Redundant Array of Independent Disks) solution by integrating two IDE RAID connectors that support PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100 modes. The IDE RAID connectors allow you to connect Ultra ATA/DMA hard disks and use RAID technology for high performance, data security and fault tolerance. The connectors support RAID 0 (striping) or RAID 1 (mirroring).

IDE RAID Connectors
- You can connect a Master and a Slave drive to each IDE RAID connector.
- The two connectors support **hard disk drives** only.
- **For more information on IDE RAID, please refer to IDE RAID Manual.**

(Please note RAID function will apply to only two of the installed hard disk drives, and usually they are Master drives.)
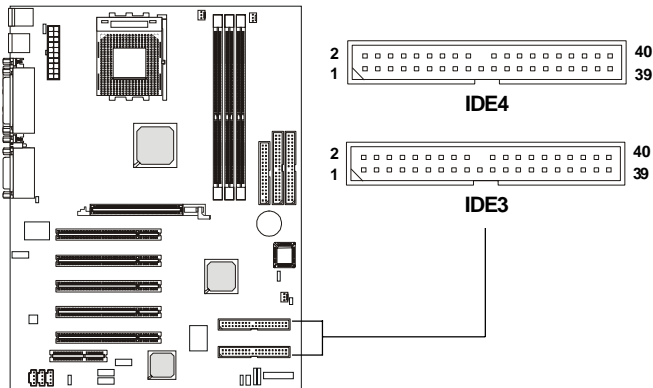
> *If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*
>
> **TIP**

Case Connector: JFP1

The case connector block JFP1 allows you to connect to the Power Switch, Reset Switch, Keylock, Speaker, Power LED, and HDD LED on the case.
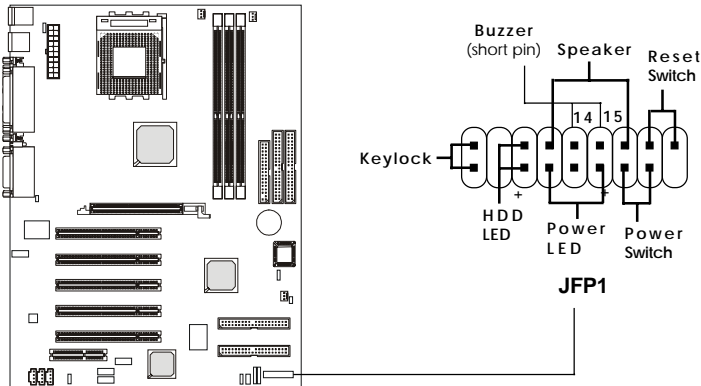
Power Switch
Connect to a 2-pin push button switch.

Reset Switch
Reset switch is used to reboot the system rather than turning the power ON/OFF. Avoid rebooting while the HDD is working. You can connect the Reset switch from the system case to this pin.

Power LED
The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin.

Speaker
Speaker from the system case is connected to this pin.
If on-board Buzzer is available, then:
Always short pin 14-15 to enable on-board Buzzer

HDD LED

HDD LED shows the activity of a hard disk drive connected to the IDE1 or IDE2 connector. Avoid turning the power off while the HDD is working. You can connect the HDD LED from the system case to this pin.
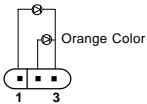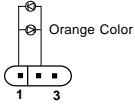
Keylock

Keylock allows you to disable the keyboard for security purpose. You can connect the keylock to this pin.

Power Saving LED Connector: JGL1

JGL1 is connected to a power saving LED. There are three types of LED that you can use: 3-pin/2-pin dual color or 2-pin single color LED. If connected to a dual color LED, the LED light is green when system in turned on, and turns to orange color while entering the suspend/sleep state. For the single color LED, the LED is lit when system is on, and blinks during the suspend/sleep state.
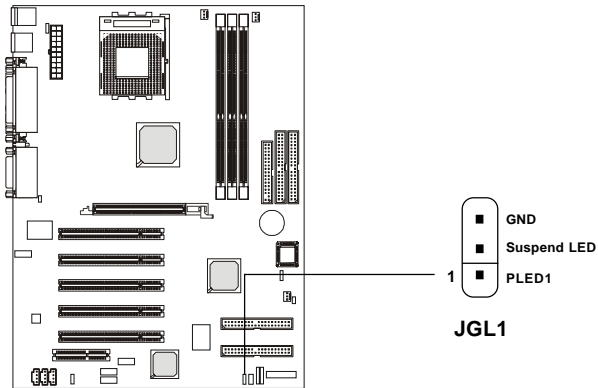
3-Pin LED	2-Pin LED
Green Color Orange Color 1　3	Green Color Orange Color 1　3
Green: Full-on Mode **Orange: Sleep Mode**	**Dual Color**

Wake On LAN Connector: JWOL1

This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer via remote control through a local area network.

```
1 | [ ]   5VSB
  | [ ]   GND
  | [ ]   MP_WAKEUP
       JWOL1
```
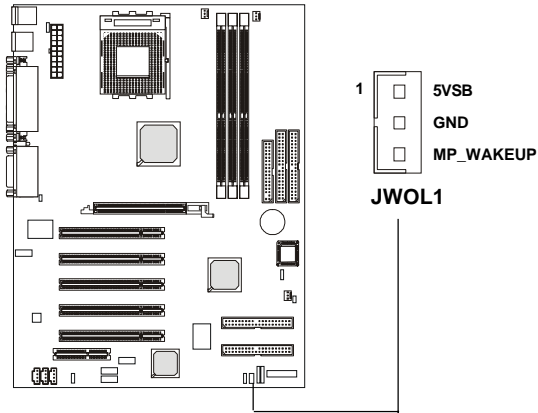
Wake On Ring Connector: JMDM1

This connector allows you to connect to a modem card with Wake On Ring function. The connector will power up the system when a signal is received through the modem card.

```
  | ■   5VSB
  | ■   NC
  | ■   MDM_WAKEUP
  | ■   GND
1 | ■   NC
     JMDM1
```
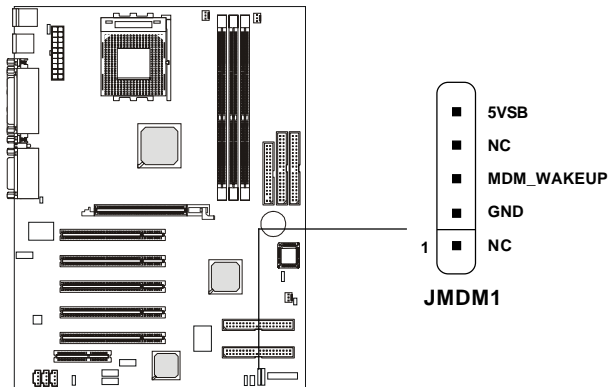
Note: Modem wake-up signal is active "low".

IrDA Infrared Module Connector: J7

This connector allows you to connect to an IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function.

Pin	Signal
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

J7
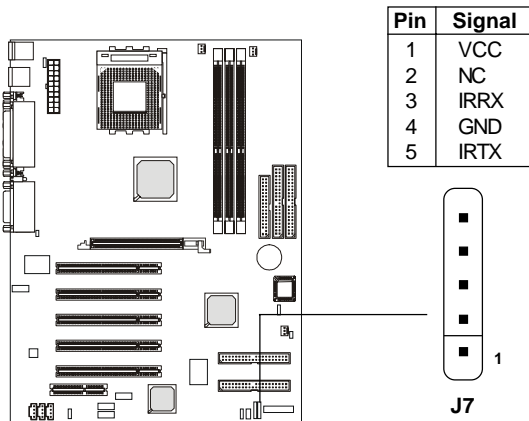
IDE RAID HDD LED Connector: J6 (K7T266 Pro2-R, K7T266 Pro2-RU)

The connector is used to connect to a HDD LED for showing the activity of any hard disk drive attached to IDE3 or IDE4.

J6
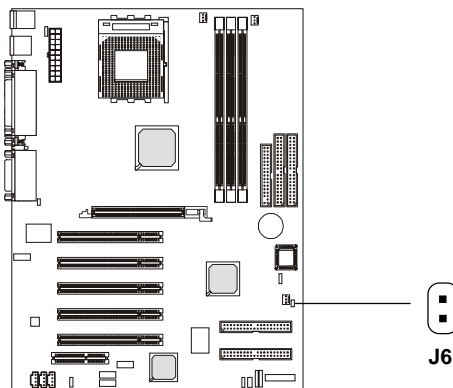
Chassis Intrusion Switch Connector: J3

This connector is connected to a 2-pin chassis switch. If the chassis is opened, the switch will be short. The system will record this status and show a warning message on the screen. To clear the warning, you must enter the BIOS utility and clear the record.

J3
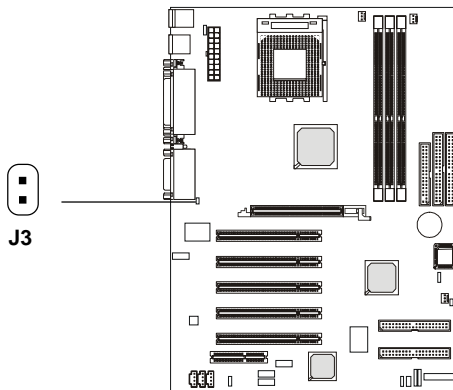
CD-In/Aux Line-In/Modem-In Connector: JCD/JAUX/JMDM

JCD connector is for CD-ROM audio connector.
JAUX connector is for DVD add-on card with Line-in connector.
JMDM connector is for modem with internal audio connector.


```
JMDM              JAUX              JCD
Phone_In          L                 L
GND               GND               GND
Mono_Out          R                 R
```
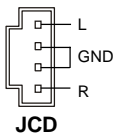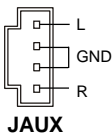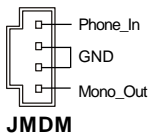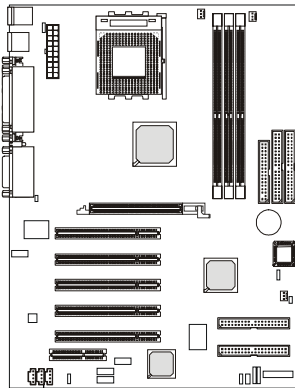
Note:
Mono_Out is connected to the Modem speaker-out connector.
Phone_In is connected to the Modem Microphone-In connector.

Fan Power Connectors: CFAN1/SFAN1/PSFAN1

The CFAN1 (processor fan), SFAN1 (system fan) and PSFAN1 (power supply fan) support system cooling fan with +12V. It supports three-pin head connector. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.
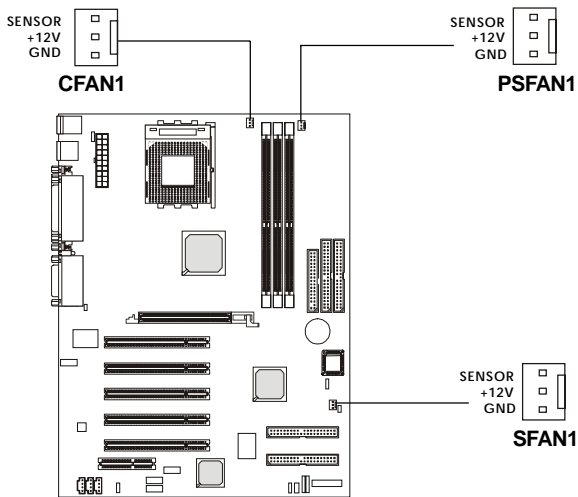
Note:
1. Always consult the vendor for proper CPU cooling fan.
2. CPU Fan supports the fan control. You can install the PC Alert utility that will automatically control the CPU Fan speed according to the actual CPU temperature.

Front USB Connectors: JUSB1, JUSB2 & JUSB3

Depending on the model you have purchased, your mainboard could provide TWO or THREE USB (Universal Serial Bus) pin headers, that allow you to connect optional USB ports for front panel.

Two USB Connectors: JUSB2 & JUSB3 (K7T266 Pro2, K7T266 Pro2-R)

If your mainboard comes with two USB pin headers, these headers are compatible with USB 1.1 specification. Therefore, the mainboard can offer **six USB 1.1 ports**.
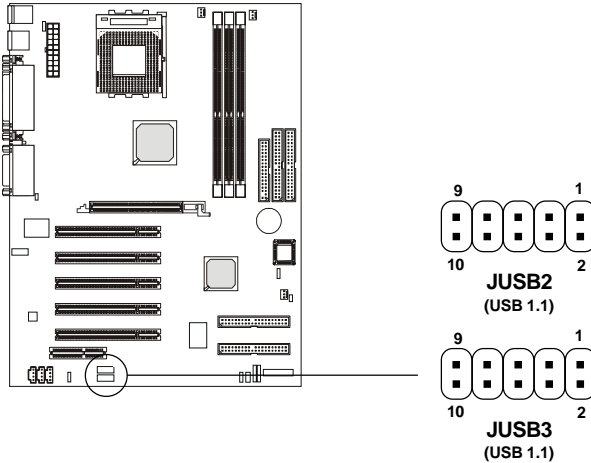
JUSB2/3 Pin Definition

Pin	Description	Pin	Description
1	VCC	2	GND
3	USB0-	4	GND
5	USB0+	6	USB1+
7	GND	8	USB1-
9	GND	10	VCC

THREE USB Connectors: JUSB1, JUSB2 & JUSB3 (K7T266 Pro2-U, K7T266 Pro2-RU)

If your mainboard comes with three USB pin headers along with the NEC USB 2.0 controller, two of the headers comply with high-speed **USB 2.0** specification and one is compliant to USB 1.1 specification.

USB 2.0 technology increases data transfer rate up to a maximum throughput of 480Mbps, which is 40 times faster than USB 1.1, and is ideal for connecting high-speed USB interface peripherals such as **USB HDD**, **digital cameras**, **MP3 players**, **printers**, **modems and the like**. It is not recommended to connect low-speed USB legacy keyboard and mouse to the USB 2.0 ports. You should connect the USB legacy devices to the USB rear ports.

The mainboard can offer **four USB 1.1 ports** and **four USB 2.0 ports**.
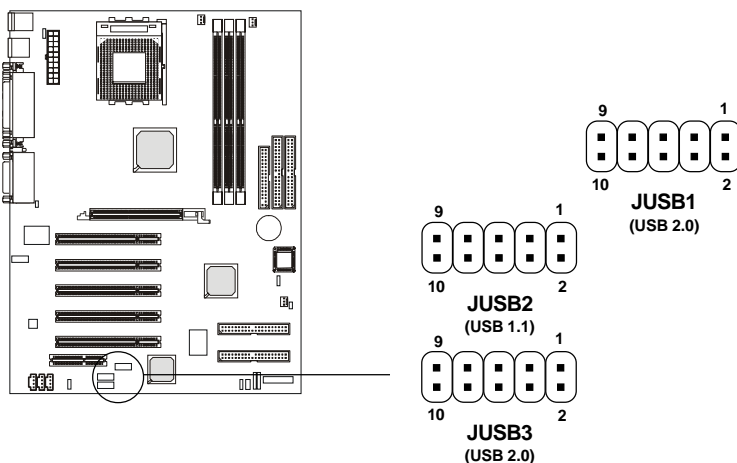
JUSB1/2/3 Pin Definition

Pin	Description	Pin	Description
1	VCC	2	GND
3	USB0-	4	GND
5	USB0+	6	USB1+
7	GND	8	USB1-
9	GND	10	VCC

To Attach the Optional USB 2.0 Ports:

1. Take out the USB 2.0 bracket
2. Locate the JUSB1 and JUSB3 pin headers on the motherboard.
3. Connect the USB cables from USB 2.0 bracket to the JUSB1 and JUSB 3 connectors separately.

Connected to JUSB1 & JUSB3
Separately
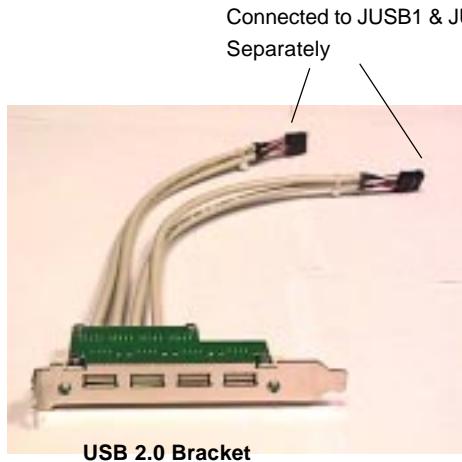
USB 2.0 Bracket

4. Place the USB 2.0 Bracket into the appropriate slot of the system case.

> *Note: The USB 2.0 controller is backwards compatible with USB 1.1 spec. To use the USB 2.0 ports, you still need to install USB 2.0 driver, which is supplied by Microsoft for Windows® 2000 and XP. If you have any problems regarding USB 2.0 driver, please visit Microsoft website for more information.*

D-Bracket™ Connector: J4

The motherboard comes with J4 connector and you can connect a D-Bracket™ to J4. D-Bracket™ is a USB bracket integrating four LEDs whose functions are similar to D-LED™ and allows users to identify system problem through 16 various combinations of LED signals. For definitions of 16 signal combinations, refer to page 1-13 *D-LED™ & D-Bracket™*.

2
10
1
9
J4

Connected to **J4**

Connected to **USB pin header**

1 2
3 4
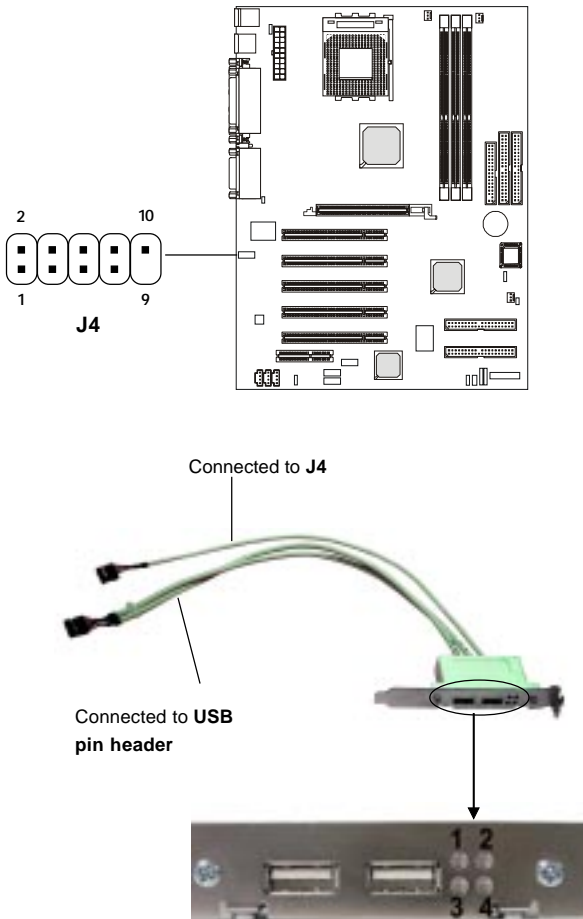
Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section will explain how to change your motherboard's function through the use of jumpers.

Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:

JBAT1

Keep Data   **Clear Data**
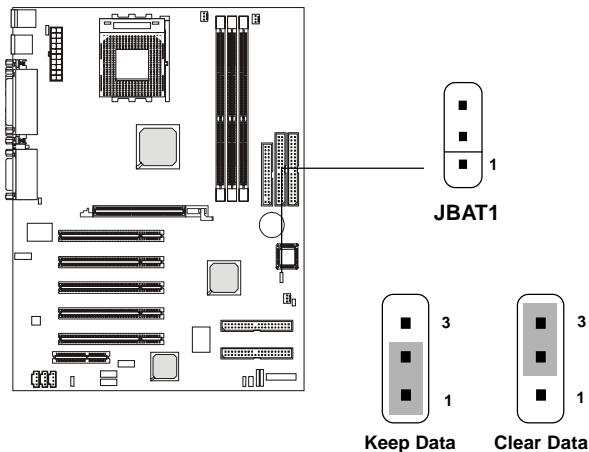
> **STOP**
> **WARNING!**
> *You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.*

Keyboard Wake-up Jumper: JKBV1

The JKBV1 jumper is used to set PS/2 keyboard/mouse and **Rear** USB wake-up function. To use the function, you should also go to BIOS to enable the PS/2 keyboard/mouse & USB wake-up (power on) function.
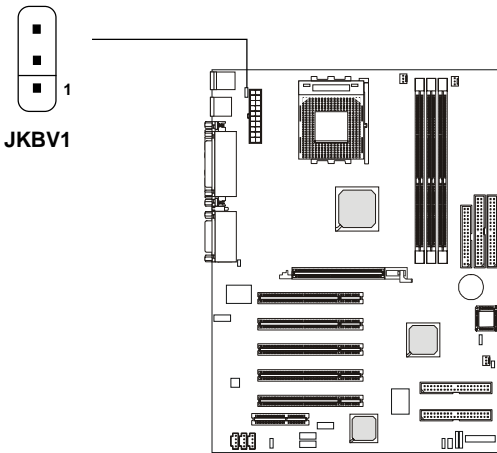
JKBV1
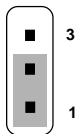
3
1
VCC 5V --
Disable Keyboard
Power On Function
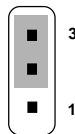
3
1
5V StandBy (Default)--
Enable Keyboard
Power On Function

> *Note: To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)*

Front USB Wake-up Jumper: J12

The J12 jumper is used to set **Front** USB device wake-up function. To use the function, you should also go to BIOS to enable the USB wake-up (power on) function.

J12
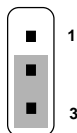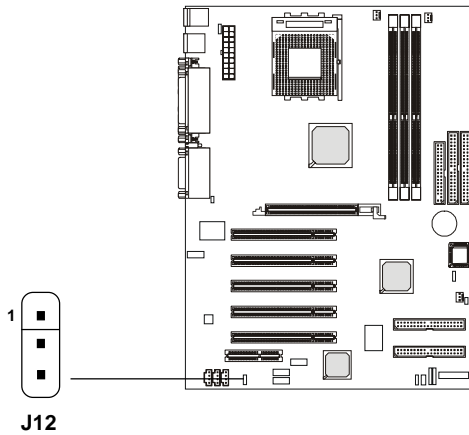
5V StandBy (Default)--
Enable Front USB
Wake Up Function

1
3
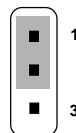
VCC 5V --
Disable Front USB
Wake Up Function

1
3

> *Note:* *To be able to use this function, you need a power supply that provides enough power for this feature. (Power supply with 750mA 5V Stand-by)*

Slots

The motherboard provides one AGP slot, five 32-bit Master PCI slots, and one CNR slot.
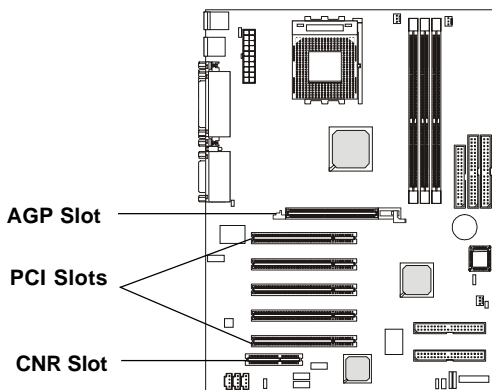
AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory and provides three levels of throughputs: 1x (266Mbps), 2x (533Mbps) and 4x (1.07Gbps).

PCI Slots

Five PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

CNR (Communication Network Riser)

The CNR specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) main-board riser board and interface, which supports audio and modem only.

PCI Interrupt Request Routing

The IRQ, abbreviation of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. **To install a PCI expansion card on a PCI** *shared* **slot, you must make sure the card's driver supports "IRQ shared" function or there is no need to assign an IRQ to the device.**

The "AGP/PCI/USB/Promise ATA100" IRQ pins are typically connected to the PCI bus INTA#-INTD# pins as follows:

	Order 1	Order 2	Order 3	Order 4
AGP	INT A#	INT B#		
PCI Slot 1	INT A#	INT B#	INT C#	INT D#
PCI Slot 2	INT B#	INT C#	INT D#	INT A#
PCI Slot 3	INT C#	INT D#	INT A#	INT B#
PCI Slot 4	INT D#	INT A#	INT B#	INT C#
PCI Slot 5	INT A#	INT B#	INT C#	INT D#
NEC USB 2.0	INT A#	INT B#	INT C#	
Promise ATA 100	INT B#			

The mainboard supports PCI Slot 1~5 Bus Master.

AMI® BIOS Setup

3

The mainboard uses AMI® BIOS ROM that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off.

The chapter contains the following topics:

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key to enter Setup.

DEL:Setup   F11:Boot Menu   F12:Network boot   TAB:Logo

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Selecting the First Boot Device

You are allowed to select the 1st boot device without entering the BIOS setup utility by pressing <F11>. When the same message as listed above appears on the screen, press <F11> to trigger the boot menu.

The POST messages might pass by too quickly for you to respond in time. If so, restart the system and press <F11> after around 2 or 3 seconds to activate the boot menu similar to the following.

Select First Boot Device		
Floppy	: 1st Floppy	
IDE-0	: IBM-DTLA-307038	
CDROM	: ATAPI CD-ROM DRIVE 40X M	
[Up/Dn] Select	[RETURN] Boot	[ESC] cancel

The boot menu will list all the bootable devices. Select the one you want to boot from by using arrow keys and then pressing <Enter>. The system will boot from the selected device. The selection will not make changes to the settings in the BIOS setup utility, so next time when you power on the system, it will still use the original first boot device to boot up.

Control Keys

<↑>	Move to the previous item
<↓>	Move to the next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load High Performance defaults, only for Option Page Setup Menu
<F7>	Load BIOS Setup defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup utility, the first screen you see is the Main Menu.

Main Menu
The main menu displays the setup categories the BIOS supplies. You can use the arrow keys (↑↓) to select the item. The on-line description for the selected setup category is displayed on the bottom of the screen.

Default Settings
The BIOS setup program contains two kinds of default settings: the BIOS Setup and High Performance defaults. BIOS Setup defaults provide stable performance settings for all devices and the system, while High Performance defaults provide the best system performance but may affect the system stability.

The Main Menu

Once you enter AMIBIOS SIMPLE SETUP UTILITY, the Main Menu will appear on the screen. The Main Menu displays twelve configurable functions and two exit choices. Use arrow keys to move among the items and press <Enter> to enter the sub-menu.
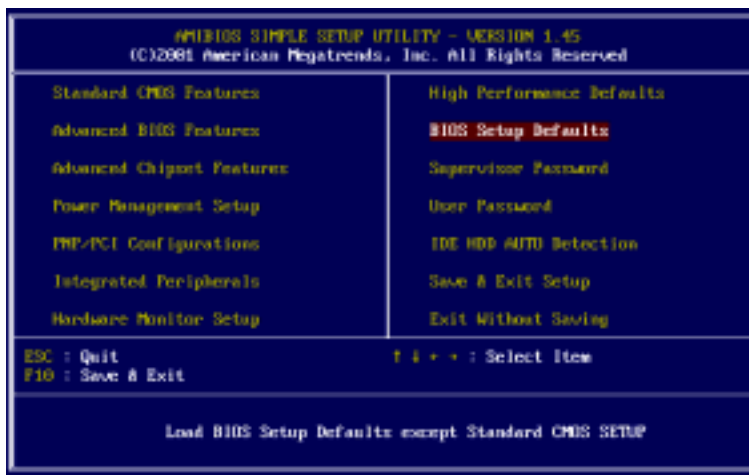
Standard CMOS Features
Use this menu for basic system configurations, such as time, date etc.

Advanced BIOS Features
Use this menu to setup the items of AMI® special enhanced features.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Power Management Setup
Use this menu to specify your settings for power management.

PNP/PCI Configurations
This entry appears if your system supports PnP/PCI.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Hardware Monitor Setup
This entry shows your PC's current status, and allows you to adjust CPU clock, core voltage, ratio and DDR voltage.

High Performance Defaults
Use this menu to load the BIOS values for the best system performance, but the system stability may be affected.

BIOS Setup Defaults
Use this menu to load factory default settings into the BIOS for stable system performance operations.

Supervisor Password
Use this menu to set Supervisor Password.

User Password
Use this menu to set User Password.

Save & Exit Setup
Save changes to CMOS and exit setup.

Exit Without Saving
Abandon all changes and exit setup.

Standard CMOS Features

The items inside STANDARD CMOS SETUP menu are divided into 9 categories. Each category includes none, one or more setup items. Use the arrow keys to highlight the item you want to modify and use the <PgUp> or <PgDn> keys to switch to the value you prefer.
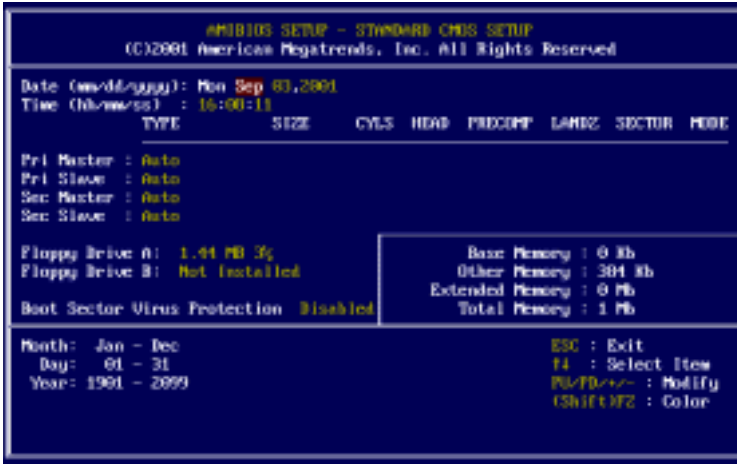
Date
This allows you to set the system to the date that you want (usually the current date). The format is <day><month> <date> <year>.

day	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month	The month from Jan. through Dec.
date	The date from 1 to 31 can be keyed by numeric function keys.
year	The year can be adjusted by users.

Time
This allows you to set the system time that you want (usually the current time). The time format is <hour> <minute> <second>.

Pri Master/Pri Slave/Sec Master/Sec Slave
Press PgUp/<+> or PgDn/<-> to select the hard disk drive type. The specification of hard disk drive will show up on the right hand according to your selection.

TYPE	Type of the device.
SIZE	Capacity of the device.
CYLS	Number of cylinders.
HEAD	Number of heads.
PRECOMP	Write precompensation.
LANDZ	Cylinder location of Landing zone.
SECTOR	Number of sectors.
MODE	Access mode.

Floppy Drive A:/B:
This item allows you to set the type of floppy drives installed. Available options: *Not Installed*, *360 KB 5¼*, *1.2 MB 5¼*, *720 KB 3½*, *1.44 MB 3½* and *2.88 MB 3½*.

Boot Sector Virus Protection
The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. When *Enabled*, BIOS will issue a virus warning message and beep if a write to the boot sector or the partition table of the HDD is attempted. Setting options: *Disabled* and *Enabled*.

> *Note: This feature only protects the boot sector, not the whole hard disk.*

Advanced BIOS Features
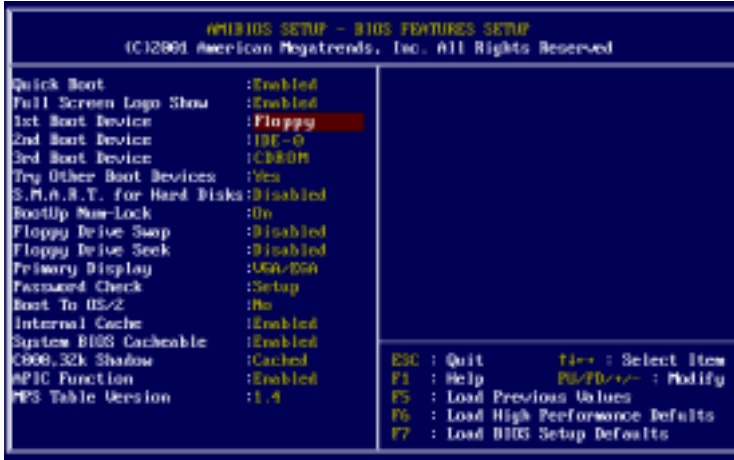
Quick Boot
Setting the item to *Enabled* allows the system to boot within 5 seconds since it will skip some check items. Available options: *Enabled* and *Disabled.*

Full Screen Logo Show
This item enables you to show the company logo on the bootup screen. Settings are:

Disabled	Shows the POST messages at boot.
Enabled	Shows a still image (logo) on the full screen at boot.

1st/2nd/3rd Boot Device
The items allow you to set the sequence of boot devices where AMIBIOS attempts to load the operating system. The settings are:

IDE-0	The system will boot from the first HDD.
IDE-1	The system will boot from the second HDD.
IDE-2	The system will boot from the third HDD.
IDE-3	The system will boot from the fourth HDD.
Floppy	The system will boot from floppy drive.

ARMD-FDD	The system will boot from any ARMD device, such as LS-120 or ZIP drive, that functions as a floppy drive.
ARMD-HDD	The system will boot from ARMD device, such as MO or ZIP drive, that functions as hard disk drive.
CDROM	The system will boot from the CD-ROM.
SCSI	The system will boot from the SCSI.
NETWORK	The system will boot from the Network drive.
BBS-0	The system will boot from the first BBS (BIOS Boot Specification) compliant device.
BBS-1	The system will boot from the second BBS (BIOS Boot Specification) compliant device.
BBS-2	The system will boot from the third BBS (BIOS Boot Specification) compliant device.
BBS-3	The system will boot from the fourth BBS (BIOS Boot Specification) compliant device.
Disabled	Disable this sequence.

Note: Available settings for "1st/2nd/3rd Boot Device" vary depending on the bootable devices you have installed. For example, if you did not install a floppy drive, the setting "Floppy" does not show up.

Try Other Boot Devices
Setting the option to *Yes* allows the system to try to boot from other devices if the system fails to boot from the 1st/2nd/3rd boot device.

S.M.A.R.T. for Hard Disks
This allows you to activate the S.M.A.R.T. (Self-Monitoring Analysis & Reporting Technology) capability for the hard disks. S.M.A.R.T is a utility that monitors your disk status to predict hard disk failure. This gives you an opportunity to move data from a hard disk that is going to fail to a safe place before the hard disk becomes offline. Settings: *Enabled* and *Disabled*.

BootUpNum-Lock
This item is to set the Num Lock status when the system is powered on. Setting to *On* will turn on the Num Lock key when the system is powered on. Setting to *Off* will allow end users to use the arrow keys on the numeric

keypad. Setting options: *On* and *Off*.

Floppy Drive Swap
Setting to *Enabled* will swap floppy drives A: and B:.

Floppy Drive Seek
This setting causes the BIOS to search for floppy disk drives at boot time.
When enabled, the BIOS will activate the floppy disk drives during the boot
process: the drive activity light will come on and the head will move back
and forth once. First A: will be done and then B: if it exists. Settings:
Disabled and *Enabled*.

Primary Display
This configures the primary display subsystem in the computer. Available
options: *Mono (monochrome)*, *CGA40x25*, *CGA80x25*, *VGA/EGA* and
Absent.

Password Check
This specifies the type of AMIBIOS password protection that is
implemented. Setting options are described below.

Option	Description
Setup	The password prompt appears only when end users try to run Setup.
Always	A password prompt appears every time when the computer is powered on or when end users try to run Setup.

Boot To OS/2
This allows you to run the OS/2® operating system with DRAM larger than
64MB. When you choose *No*, you cannot run the OS/2® operating system
with DRAM larger than 64MB. But it is possible if you choose *Yes*.

Internal Cache
Cache memory is additional memory that is much faster than conventional
DRAM (system memory). When the CPU requests data, the system trans-
fers the requested data from the main DRAM into cache memory, for even
faster access by the CPU. The setting enables/disables the internal cache

(also known as L1 or level 1 cache). Setting to *Enabled* will speed up the system performance.

System BIOS Cacheable
AMIBIOS always copies the system BIOS from ROM to RAM for faster execution. Selecting *Enabled* allows the contents of F0000h RAM memory segment to be written to and read from cache memory. Settings: *Enabled* and *Disabled*.

C000, 32k Shadow
This item specifies how the contents of the adapter ROM named in the item are handled. Settings are described below:

Option	Description
Disabled	The specified ROM is not copied to RAM.
Enabled	The contents of specified ROM are copied to RAM for faster system performance.
Cached	The contents of specified ROM are not only copied to RAM, the contents of the ROM area can be written to and read from cache memory.

APIC Function
This field is used to enable or disable the APIC (Advanced Programmable Interrupt Controller). Due to compliance to PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQs resources for the system. Settings: *Enabled* and *Disabled*.

MPS Table Version
This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, consult the vendor of your operating system. Settings: *1.4* and *1.1*.

Advanced Chipset Features

```
            AMIBIOS SETUP - CHIPSET FEATURES SETUP
            (C)2001 American Megatrends, Inc. All Rights Reserved

Configure SDRAM Timing by:SPD          BIOS Protection        :Enabled
  SDRAM Frequency         :SPD
  CAS Latency             :2.5
  Row Precharge Time       :3T
  RAS Pulse Width         :6T
  RAS to CAS Delay        :3T
  Bank Interleave         :Disabled
  Burst Length            :4 QW
SDRAM 1T Command          :Disabled
Fast Command              :Disabled
AGP Mode                  :Auto
AGP Comp. Driving         :Auto
Manual AGP Comp. Driving  :CB
AGP Fast Write            :Disabled
AGP Aperture Size         :64MB
AGP Master 1 W/S Write    :Disabled     ESC : Quit         Ti++ : Select Item
AGP Master 1 W/S Read     :Disabled     F1  : Help         PU/PD/+/- : Modify
AGP Read Synchronization  :Disabled     F5  : Load Previous Values
Search for MDA Resources  :Yes          F6  : Load High Performance Defults
PCI Delay Transaction     :Disabled     F7  : Load BIOS Setup Defaults
```

Note: Change these settings only if you are familiar with the chipset.

Configure SDRAM Timing by
Selects whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to *SPD* enables CAS# Latency, Row Precharge Time, RAS Pulse Width, RAS to CAS Delay and Bank Interleave automatically to be determined by BIOS based on the configurations on the SPD. Selecting *User* allows user to configure these fields manually.

SDRAM Frequency
Use this item to configure the clock frequency of the installed SDRAM. Settings are:

HCLK	The DRAM clock will be equal to the Host Clock.
HCLK+33	The DRAM clock will be equal to the Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.
HCLK-33	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the

DRAM clock will be 100MH

SPD   *SPD* will set the clock frequency by reading the contents of the SPD device.

When the installed CPU is 100MHz, this field has three setting options: *HCLK*, *HCLK+33* and *SPD*. When the installed one is 133MHz, the three setting options will become *HCLK*, *HCLK-33* and *SPD*.

CAS# Latency
This controls the timing delay (in clock cycles) before SDRAM starts a read command after receiving it. Settings: *2* and *3*. *2* increases the system performance while *3* gives more stable performance.

Row Precharge Time
This setting controls the number of cycles for Row Address Strobe (RAS) to be allowed to precharge. If insufficient time is allowed for the RAS to accumulate its charge before DRAM refresh, refresh may be incomplete and DRAM may fail to retain data. This item applies only when synchronous DRAM is installed in the system. Settings: *2T* and *3T*.

RAS Pulse Width
This setting allows you to select the number of clock cycles allotted for the RAS pulse width, according to DRAM specifications. The less the clock cycles, the faster the DRAM performance. Settings: *6T* and *5T*.

RAS to CAS Delay
When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe). The less the clock cycles, the faster the DRAM performance. Settings: *3T* and *2T*.

Bank Interleave
This field selects 2-bank or 4-bank interleave for the installed SDRAM. Disable the function if 16MB SDRAM is installed. Settings: *Disabled*, *2-*

Way and *4-Way*.

Burst Length
This setting allows you to set the size of Burst-Length for DRAM. Bursting feature is a technigue that DRAM itself predicts the address of the next memory location to be accessed after the first address is accessed. To use the feature, you need to define the burst length, which is the actual length of burst plus the starting address and allows internal address counter to properly generate the next memory location. The bigger the size, the faster the DRAM performance. Settings: *4 QW* and *8 QW*.

SDRAM 1T Command
This item controls the SDRAM command rate. Selecting *Enabled* allows SDRAM signal controller to run at 1T (T=clock cycles) rate. Selecting *Disabled* makes SDRAM signal controller run at 2T rate. *1T* is faster than *2T*.

Fast Command
This item controls the internal timing of CPU. Selecting *Enabled* allows CPU to handle data/instructions at a faster speed.

AGP Mode
The item sets an appropriate mode for the installed AGP card. Settngs are *1x*, *2x*, *4x* and *Auto*. Select *4x* only if your AGP card can support it.

AGP Comp. Driving
This filed is used to adjust the AGP driving force. Selecting *Manual* allows you to select an AGP driving force in **Manual AGP Comp. Driving**. It is strongly suggested to select *Auto* to avoid causing any system error.

Manual AGP Comp. Driving
This item specifies an AGP driving force.

AGP Fast Write
The field enables or disables the AGP Fast Write feature. The Fast Write technology allows CPU to write directly to the graphics card without

passing anything through the system memory and improves the AGP 4X speed. Select *Enabled* only when the installed AGP card supports the function.

AGP Aperture Size
The field selects the size of the Accelerated Graphics Port (AGP) aperture. Aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. Settings: *4MB*, *8MB*, *16MB*, *32MB*, *64MB*, *128MB* and *256MB*.

AGP Master 1 W/S Write
The field allows users to insert one wait state into the AGP master write cycle. Settings: *Enabled* and *Disabled*.

AGP Master 1 W/S Read
The field allows users to insert one wait state into the AGP master read cycle. Settings: *Enabled* and *Disabled*.

AGP Read Synchronization
The field allows you to enable or disable the AGP Read Synchronization feature. Settings: *Enabled* and *Disabled*.

Search for MDA Resources
MDA stands for Mono Display Adapter. Select *Yes* only when you install and use mono display adapter card.

PCI Delay Transaction
The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. Settings: *Enabled* and *Disabled*.

BIOS Protection
This function protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS' data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you'll need to disable this Flash BIOS

Protection function.
You should enable this function at all times. The only time when you need
to disable it is when you want to update the BIOS. After updating the BIOS,
you should immediately re-enable it to protect it against viruses. Settings:
Enabled and *Disabled*.

Power Management Setup

IPCA Function

This item is to activate the ACPI (Advanced Configuration and Power
Management Interface) function. If your operating system is ACPI-aware,
such as Windows 98SE/2000/ME, select *Yes*. Available options: *Yes* and *No*.

ACPI Standby State

This item specifies the power saving mode for ACPI function. If your
operating system supports ACPI, such as Windows 98SE, Windows ME and
Windows 2000, you can choose to enter the Standby mode in S1(POS) or S3
(STR) fashion through the setting of this field. Options are:

> *S1/POS*   The S1 sleep mode is a low power state. In this state,
> no system context is lost (CPU or chipset) and hard-
> ware maintains all system context.
>
> *S3/STR*   The S3 sleep mode is a power-down state in which
> power is supplied only to essential components such
> as main memory and wake-capable devices and all
> system context is saved to main memory. The informa-
> tion stored in memory will be used to restore the PC to

the previous state when an "wake up" event occurs.

Call VGA at S3 Resuming
Selecting *Enabled* will make BIOS call VGA BIOS to initialize the VGA card when system wakes up (resume) from S3 state. The system resume time is shortened if you disable the function, but system will need AGP driver to initialize the card. Therefore, if the AGP driver of the VGA card does not support the initialization feature, the display may work abnormally or not function after resuming from S3.

USB Wakeup From S3
This item allows the activity of the USB device to wake up the system from S3 (Suspend to RAM) sleep state. Settings: *Enabled* and *Disabled*.

Power Management/APM
Setting to *Enabled* will activate the Advanced Power Management (APM) features to enhance power saving modes. Settings: *Enabled* and *Disabled*.

Power/Sleep LED
This item configures how the system uses power LED on the case to indicate the sleep state. Available options are:

Single LED	The power LED blinks to indicate the sleep state without changing its color.
Dual LED	The power LED changes its color to indicate the sleep state.

Display Activity/IRQ3/IRQ4/IRQ5/IRQ7/IRQ9/IRQ10/IRQ11/IRQ13/IRQ14/IRQ15
These items specify if the BIOS will monitor the activity of the specified hardware peripheral or component. If set to *Monitor*, any activity detected on the specified hardware peripheral or component will wake up the system or prevent the system from entering the power saving modes. Settings: *Monitor* and *Ignore*.

> ***Note****: IRQ (Interrup Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it singals this by causing an IRQ to occur. After*

receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the I/O device.

CPU Critical Temperature
This item is used to specify a thermal limit for CPU. If CPU temperature reaches the specified limit, the system will issue a warning to prevent the CPU overheat problem. Settings: *Disabled*, *70°C/158°*, *75°C/167°F*, *80°C/176°F*, *85°C/185°F*, *90°C/194°F* and *95°C/203°F*.

Power Button Function
This feature sets the function of the power button. Settings are:

On/Off	The power button functions as normal on/off button.
Suspend	When you press the power button, the computer enters the suspend/sleep mode, but if the button is pressed for more than four seconds, the computer is turned off.

After AC Power Loss
This item specifies whether you system will reboot after a power failure or interrupt occurs. Available options are:

Power Off	Leaves the computer in the power off state.
Power On	Reboots the computer.
Last State	Restores the system to the previous status before the power failure or interrupt occurred.

Wake Up On Ring/LAN
When setting to *Enabled*, the features allow your system to be awakened from the power saving modes through an incoming call from the modem or any incoming signal received via the LAN. Settings: *Enabled* and *Disabled*.

> *Note: You need to install a modem/LAN card supporting power on function for Wake Up On Ring/LAN function.*

Wake Up On PME
When setting to *Enabled*, the feature allows your system to be awakened from the power saving modes through any event on PME (Power Management Event). Settings: *Enabled* and *Disabled*.

Resume By Alarm

This is used to enable or disable the feature of booting up the system on a scheduled time/date from the soft off (S5) state. Settings: *Enabled* and *Disabled*.

Alarm Date/Hour/Minute/Second

If **Resume By Alarm** is set to *Enabled*, the system will automatically resume (boot up) on a specific date/hour/minute/second specified in these fields. Available settings for each item are:

Alarm Date	*01 ~ 31*, *Every Day*
Alarm Hour	*00 ~ 23*
Alarm Minute	*00 ~ 59*
Alarm Second	*00 ~ 59*

Note: If you change these settings, you must reboot the system until it enters the operating system and then power off the system. By doing so, the changed settings will come into effect next time when you power on the system.

PNP/PCI Configurations

This section describes configuring the PCI bus system and PnP (Plug & Play) feature. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Plug and Play Aware O/S
When set to *YES*, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows® 98, 2000 or ME. When set to *NO*, BIOS will initialize all the PnP cards. Select *Yes* if the operating system is Plug & Play aware.

Clear NVRAM
The ESCD (Extended System Configuration Data) NVRAM (Non-volatile Random Access Memory) is where the BIOS stores resource information for both PNP and non-PNP devices in a bit string format. When the item is set to *Yes*, the system will reset ESCD NVRAM right after the system is booted up and then set the setting of the item back to *No* automatically.

PCI Latency Timer
This item controls how long each PCI device can hold the bus before another takes over. When set to higher values, every PCI device can conduct transactions for a longer time and thus improve the effective PCI bandwidth. For better PCI performance, you should set the item to higher values. Settings range from *32* to *248* at a *32* increment.

Primary Graphics Adapter
This item specifies which VGA card is your primary graphics adapter. Settings: *AGP* and *PCI*.

PCI Slot1/5 IRQ, PCI Slot2 IRQ, PCI Slot3 IRQ, PCI Slot4 IRQ
This item specifies the IRQ line for each PCI slot. Settings: *3*, *4*, *5*, *7*, *9*, *10*, *11* and *Auto*. Selecting *Auto* allows BIOS to automatically determine the IRQ line for each PCI slot.

DMA Channel 0/1/3/5/6/7
These items specify the bus that the system DMA (Direct Memory Access) channel is used.

The settings determine if AMIBIOS should remove a DMA from the available DMAs passed to devices that are configurable by the system BIOS. The available DMA pool is determined by reading the ESCD NVRAM. If more DMAs must be removed from the pool, the end user can reserve the DMA by assigning an *ISA/EISA* setting to it.

IRQ 3/4/5/7/9/10/11/14/15
These items specify the bus where the specified IRQ line is used.

The settings determine if AMIBIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the IRQ pool, the end user can use these settings to reserve the IRQ by assigning an *ISA/EISA* setting to it. Onboard I/O is configured by AMIBIOS. All IRQs used by onboard I/O are configured as *PCI/PnP*. If all IRQs are set to ISA/EISA, and IRQ 14/15 are allocated to the onboard PCI IDE, IRQ 9 will still be available for PCI and PnP devices. Available settings: *ISA/EISA* and *PCI/PnP*.

Integrated Peripherals
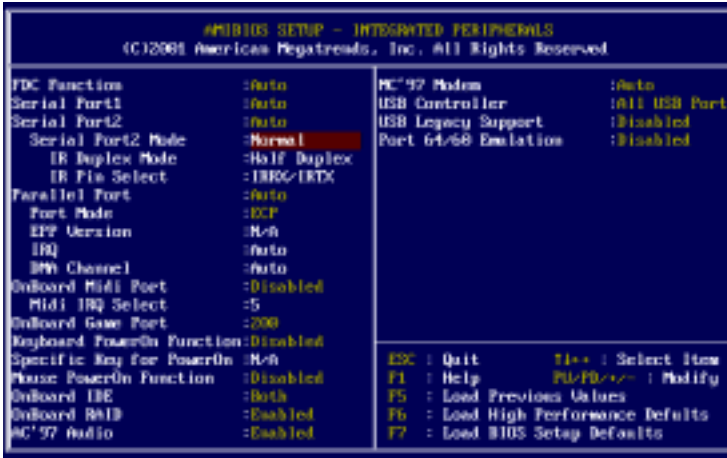
FDC Function
This is used to enable or disable the onboard Floppy controller.

Option	Description
Auto	BIOS will automatically determine whether to enable the onboard Floppy controller or not.
Enabled	Enables the onboard Floppy controller.
Disabled	Disables the onboard Floppy controller.

Serial Port1/2
These items specify the base I/O port addresses of the onboard Serial Port 1 (COM A)/Serial Port 2 (COM B). Selecting *Auto* allows AMIBIOS to automatically determine the correct base I/O port address. Settings: *Auto, 3F8/COM1*, *2F8/COM2*, *3E8/COM3*, *2E8/COM4* and *Disabled*.

Serial Port2 Mode
This item sets the operation mode for Serial Port 2. Settings: *Normal*, *1.6uS*, *3/16 Baud* and *ASKIR* (the last three operation modes are setting

options for IR function).

IR Duplex Mode
This field specifies a duplex value for the IR device connected to COM B.
Full-Duplex mode permits simultaneous two-direction transmission. Half-
Duplex mode permits transmission in one direction only at a time. Settings:
Half Duplex and *Full Duplex*.

IR Pin Select
Set to *IRRX/IRTX* when using an internal IR module connected to the IR **(J7)**
connector. Set to *SINB/SOUTB.* when connecting an IR adapter to COM B.

Parallel Port
This field specifies the base I/O port address of the onboard parallel port.
Selecting *Auto* allows AMIBIOS to automatically determine the correct base
I/O port address. Settings: *Auto, 378*, *278*, *3BC* and *Disabled*.

Port Mode
This item selects the operation mode for the onboard parallel port: *ECP*,
Normal, *Bi-Dir* or *EPP*.

EPP Version
The item selects the EPP version used by the parallel port if the port is set to
EPP mode. Settings: *1.7* and *1.9*.

IRQ
When **Parallel Port** is set to *Auto*, the item shows *Auto* indicating that BIOS
determines the IRQ for the parallel port automatically.

DMA Channel
This feature needs to be configured only when **Port Mode** is set to the *ECP*
mode. When **Parallel Port** is set to *Auto*, the field will show *Auto* indicating
that BIOS automatically determines the DMA channel for the parallel port.

OnBoard Midi Port
The field specifies the base I/O port address of the onboard Midi Port.
Settings: *Disabled*, *330*, *300*, *310* and *320*.

Midi IRQ Select
The item is used to select the IRQ line for onboard Midi port.

OnBoard Game Port
This item is used to specify the address for the onboard Game Port.

Keyboard PowerOn Function
This controls how and whether the PS/2 keyboard is able to power on the system. If you choose *Specific Key*, the power button on the case will not function anymore and you must type the password to power on the system. Settings: *Disabled*, *PowerKey*, *Any Key* and *Specific Key*.

Specific Key for PowerOn
This item allows you to specify a password for powering on the system when the **Keyboard PowerOn Function** is set to *Specific Key*.

Mouse PowerOn Function
This controls how and whether the PS/2 mouse is able to power on the system. Settings: *Disabled*, *Left-button* and *Right-button*. No matter which button is selected, you need to DOUBLE CLICK on the button to wake up the system.

OnBoard IDE
This allows you to enable or disable on-chip IDE controller. Settings: *Disabled*, *Primary*, *Secondary* and *Both*.

OnBoard RAID (Optional)
This allows you to enable or disable onboard IDE RAID controller. The field is optional. It appears only when your mainboard supports IDE RAID function. Settings: *Disabled* and *Enabled*.

AC'97 Audio
This item is used to enable or disable the AC'97 (Audio Codec'97) feature. Selecting *Auto* allows the mainboard to detect whether an audio device is used. If an audio device is detected, the onboard AC'97 controller will be

enabled; if not, the controller is disabled. Disable the function if you want to use other controller cards to connect an audio device. Settings: *Disabled* and *Enabled*.

MC'97 Modem
This item is used to enable or disable the MC'97 (Modem Codec'97) feature. Selecting *Auto* allows the mainboard to detect whether a modem is used. If a modem is detected, the onboard MC'97 controller will be enabled; if not, the controller is disabled. Disable the controller if you want to use other controller cards to connect modems. Settings: *Auto*, *Disabled* and *Enabled*.

USB Controller
This is used to enable or disable the USB ports. Settings: *All USB Port*, *Disabled*, *USB 1*, *USB 2*, *USB 1&2*, *USB 3*, *USB 1&3* and *USB 2&3*.

USB Legacy Support
Set to *All Device* if your need to use any USB device in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix. Set to *No Mice* only if your want to use any USB device other than the USB mouse.

Port 64/60 Emulation
This field allows you to enable or disable the USB Port 64/60 Emulation function. When the function is enabled, the USB keyboard is allowed to type some special combination keys.

Hardware Monitor Setup

This section describes how to set the Chassis Intrusion feature, CPU FSB frequency, monitor the current hardware status including CPU/system temperatures, CPU/System Fan speeds, Vcore etc. Monitor function is available only if there is hardware monitoring mechanism onboard.

```
               AMIBIOS SETUP - Hardware Monitor Setup
            (C)2001 American Megatrends, Inc. All Rights Reserved

Spread Spectrum          +0.25 x          +5V SB            4.848 V
CPU FSB Clock            133Mhz
 CPU FSB/PCI Overclocking N/A
CPU Ratio                Auto
CPU Vcore (V)            Auto
DDR Voltage (V)          Auto
Chassis Intrusion        Disabled
 CPU Temperature         208°C/406°F
 System Temperature      51°C/123°F
 CPU Fan Speed           5113 RPM
 System Fan Speed        0 RPM
 Power Fan Speed         0 RPM
 Vcore                   1.776 V
 Vtt                     1.248 V
 Vio                     3.264 V
 + 5.000V                4.975 V          ESC : Quit        ↑↓←→ : Select Item
 +12.000V                12.471 V         F1  : Help        PU/PD/+/- : Modify
 -12.000V                -12.317 V        F5  : Load Previous Values
 - 5.000V                -5.177 V         F6  : Load High Performance Defaults
 Battery                 3.168 V          F7  : Load BIOS Setup Defaults
```

Spread Spectrum
When the motherboard clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spread Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. If you do not have any EMI problem, leave the setting at *Disabled* for optimal system stability and performance. But if you are plagued by EMI, setting to *Enabled* for EMI reduction. Remember to disable Spread Spectrum if you are overclocking because even a 0.25% jitter can introduce a temporary boost in clockspeed of 25MHz (with a 1GHz CPU) which may just cause your overclocked processor to lock up.

CPU FSB Clock
This item allows you to select the CPU Front Side Bus clock frequency. Settings are *100MHz* and *133*MHz. If you install the 133MHz CPU, you should change the setting to *133MHz* in the field; otherwise, the CPU will run at the default hardware configuration 100MHz.

CPU FSB/PCI Overclocking

This item is used to set the combination of CPU FSB (Front Side Bus) and PCI bus frequency (MHz). Selecting *By H/W* will enable the CPU FSB to follow the hardware configuration. If the installed CPU is **100MHz**, you are allowed to adjust the clock frequency from **100 to 120MHz**. If the installed one is **133MHz**, you are allowed to bring its frequency down to **100~131MHz** or adjust it up to **133~164MHz**. The item makes overclocking possible.

> *Note: Changing CPU FSB frequency could result in unstable system; therefore, it is not recommended to change the default setting for long-term purpose.*

CPU Ratio/Vcore (V)

The items are used to adjust the CPU clock multiplier (ratio) and CPU core voltage (Vcore). The items make overclocking possible.

> *Note: Changing CPU Ratio/Vcore could result in unstable system; therefore, it is not recommended to change the default setting for long-term purpose.*

DDR Voltage (V)

The item is to adjust the DDR voltage to increase the DDR rate. Modifying the setting may lead to unstable system, so **changing the DDR Vcore for long-term use is not recommended.**

Chassis Intrusion

The field enables or disables the feature of recording the chassis intrusion status and issuing a warning message if the chassis was opened. To clear the warning message, set the field to *Reset*. The setting of the field will automatically return to *Enabled* later. Settings: *Enabled*, *Reset* and *Disabled*.

CPU Temperature/System Temperature/CPU Fan Speed/System Fan Speed/ Power Fan Speed/Vcore/Vtt/Vio/+5.000V/+12.000V/-12.000V/-5.000V/Battery/+5V SB

These items display the current status of all of the monitored hardware devices/components such as system voltages, temperatures and fan speeds.

High Performance/BIOS Setup Defaults

The two options on the main menu allow users to restore all of the BIOS settings to High Performance defaults or BIOS Setup defaults. The High Performance Defaults are the default values set by the mainboard manufacturer for the best system performance but probably will cause a stability issue. The BIOS Setup Defaults are the default values also set by the mainboard manufacturer for stable performance of the mainboard.

When you select High Performance Defaults, a message as below appears:
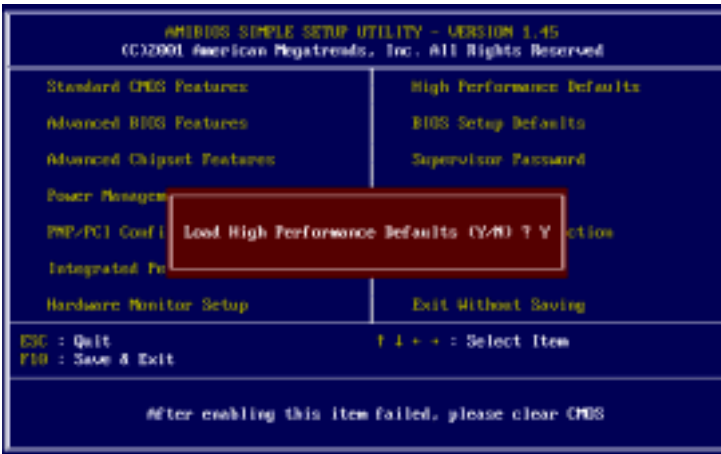
Pressing 'Y' loads the default BIOS values that enable the best system performance but may lead to a stability issue.

> **STOP**
>
> **WARNING!**
>
> ***The option is for power or overclocking users only***. *Use of high performance defaults will tighten most timings to increase the system performance. Therefore, a high-end system configuration is a must, which means you need high-quality VGA adapter, RAM and so on.* ***We don't recommend that users should apply the high performance defaults in their regular systems.*** *Otherwise, the system may become unstable or even crash. If the system crashes or hangs after enabling the feature, please CLEAR CMOS DATA to resolve the problem. For more information, refer to "Clear CMOS Jumper:JBAT1" on page 2-29.*
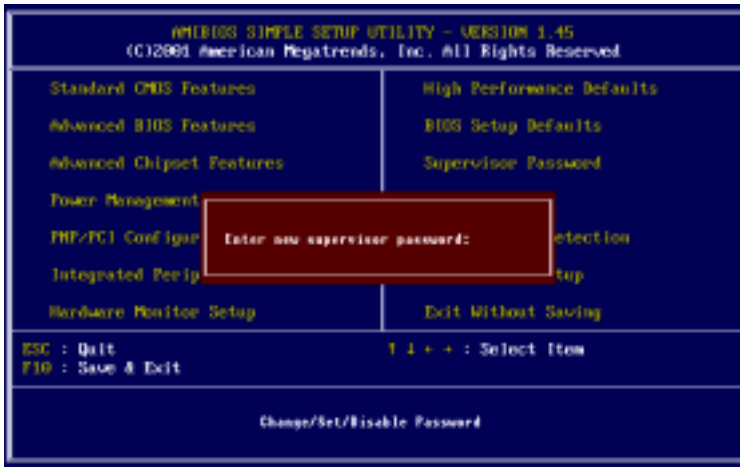
When you select BIOS Setup Defaults, a message as below appears:
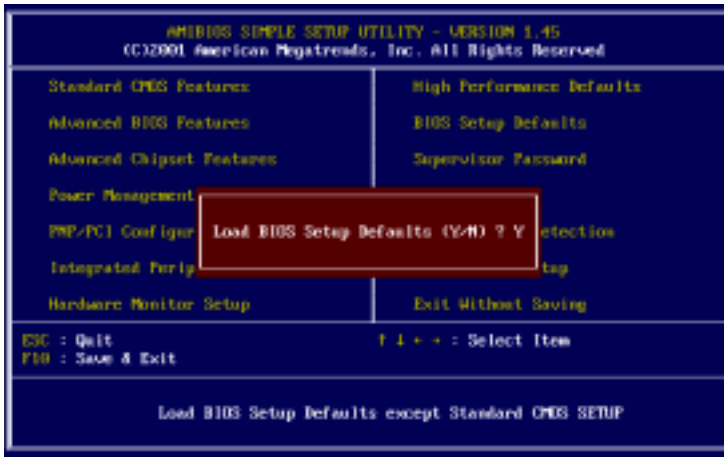
Pressing 'Y' loads the default values that are factory settings for stable system performance.

Supervisor/User Password

When you select this function, a message as below will appear on the screen:

Type the password, up to six characters in length, and press <Enter>. The password typed now will replace any previously set password from CMOS memory. You will be prompted to confirm the password. Retype the password and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To clear a set password, just press <Enter> when you are prompted to enter the password. A message will show up confirming the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup without entering any password.

When a password has been set, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also have AMIBIOS to request a password each time the system is booted. This would prevent unauthorized use of your computer. The setting to determine when the password

prompt is required is the PASSWORD CHECK option of the ADVANCED BIOS FEATURES menu. If the PASSWORD CHECK option is set to *Always*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when you try to enter Setup.
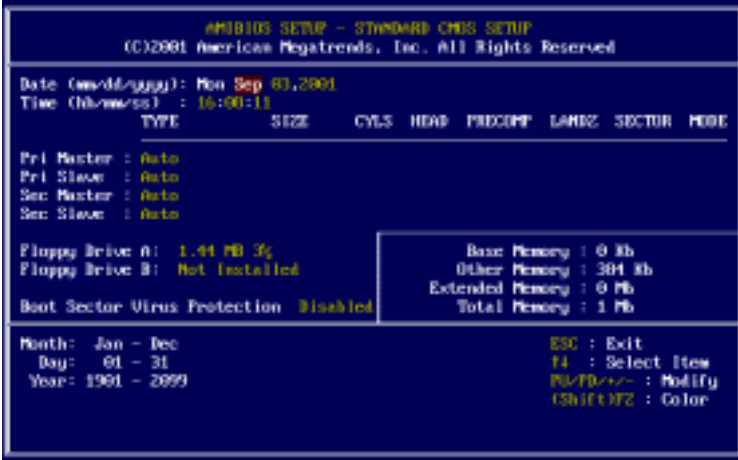
> ***About Supervisor Password & User Password:***
>
> *Supervisor password:*   *Can enter and change the settings of the setup menu.*
> *User password:*   *Can only enter but do not have the right to change the settings of the setup menu.*

IDE HDD AUTO Detection

You can use this utility to AUTOMATICALLY detect the characteristics of most hard drives.

Save & Exit Setup

When you want to quit the Setup menu, you can select this option to save the changes and quit. A message as below will appear on the screen.

Typing *Y* will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

Typing *N* will return to the Setup Utility.

Exit Without Saving

When you want to quit the Setup menu, you can select this option to abandon the changes. A message as below will appear on the screen.

Typing *Y* will allow you to quit the Setup Utility without saving any changes to RTC CMOS.

Typing *N* will return to the Setup Utility.

Installing Drivers

4

The chapter describes how to install the VIA® chipset and ALC201A sound drivers in different Windows® operating systems. When you do the installation, you should always **install VIA® chipset driver prior to sound drivers**.

This chapter includes the following topics:

Driver Installation for Windows® 98SE

Installing VIA® Chipset Driver

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system for the new chipset driver.

Installing Sound Drivers

1. Make sure the supplied CD disk is in the CD-ROM drive.
2. Go to **My Computer** and double click the CD-ROM icon. The setup screen will appear again.
3. Click on **Avance Sound Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system.

Driver Installation for Windows® 2000

🔍 *Note: Before installation of VIA chipset driver, you should install Windows 2000 Service Pack2 or the latest version.*

Installing VIA® Chipset Driver
1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system for the new chipset driver.

Installing Sound Drivers
1. Make sure the supplied CD disk is in the CD-ROM drive.
2. Go to **My Computer** and double click the CD-ROM icon. The setup screen will appear again.
3. Click on **Avance Sound Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system.

> *One Touch Setup:*
> *In Windows 2000, you may see the **One Touch Setup** button appear on the setup screen. Choosing the button will help you to install more than one driver into the system without going through the installation process step by step and save a lot of time accordingly. After clicking on One Touch Setup, a window will show up indicating what drivers will be installed. Install other drivers not included by One Touch Setup manually if any.*

Driver Installation for Windows® ME

Installing VIA® Chipset Driver

1. Insert the supplied CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** follow the on-screen instructions to complete the installation.
4. Restart the system for the new chipset driver.

Installing Sound Drivers

1. Make sure the supplied CD disk is in the CD-ROM drive.
2. Go to **My Computer** and double click the CD-ROM icon. The setup screen will appear again.
3. Click on **Avance Sound Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system.

> *One Touch Setup:*
>
> *In Windows ME, you may see the **One Touch Setup** button appear on the setup screen. Choosing the button will help you to install more than one driver into the system without going through the installation process step by step and save a lot of time accordingly. After clicking on One Touch Setup, a window will show up indicating what drivers will be installed. Install other drivers not included by One Touch Setup manually if any.*

Driver Installation for Windows® NT4.0

Note: Install Windows® NT4.0 Service Pack 6 or above before install-ing the VIA drivers into Windows® NT.

Installing VIA® Chipset Driver

1. Insert the provided CD disk into the CD-ROM drive.
2. The CD will auto-run and the setup screen will appear.
3. Click on **Via Chipset Drivers** follow the on-screen instructions to complete the installation.
4. Restart the system for the new chipset driver.

Installing Sound Driver

1. Make sure the supplied CD disk is in the CD-ROM drive.
2. Go to **My Computer** and double click the CD-ROM icon. The setup screen will appear again.
3. Click on **Avance Sound Drivers** and follow the on-screen instructions to complete the installation.
4. Restart the system.

Note: If you find out that you cannot install the sound driver success-fully in Windows NT4.0, go to "Advanced BIOS Features" in the BIOS setup utility and set "MPS Table Version" to 1.1.

MSI Smart Key

A

If security is important to you, the MSI Smart Key is the best solution to prevent your data in the computer from being accessed by unauthorized people.

In the public workspace, the passwords (BIOS password, system password, etc.) are not enough to keep your privacy. Do you believe that a hacker can easily enter your computer and monitor your confidential data? It happens everyday, everywhere; you just do not know... A password only stops them at the first gate. If this protection is broken, what else can you rely on?

The MSI Smart Key is a hardware device that provides you the complete and perfect protection on your system. Once the key is installed and setup, any unauthorized user absolutely can not access and use your computer without the key. The computer needs the key to boot up, and the operating system needs the key to work normally. Furthermore, if you have to leave your desktop for a while, you can simply unplug the key to keep your system in a safest status.

The section includes the following topics:

Installing MSI Smart Key

Installation

Simply follow the few steps below, you can install the Smart Key into your computer very easily.

1. Turn off the computer.
2. Locate the USB port on your computer.
3. Connect the cable to the USB port, and then plug the Smart Key into the connector properly.
4. Turn on the computer, and now you can implement this powerful feature.

Note: After you have installed the Smart Key into your computer, the BIOS will detect it when the system boots up, and you have to enabled/ disabled this function. Furthermore, you should install the dedicated software application in the operating system, which is provided by MSI, to obtain the overall protection on your system. The following sections will provide the detailed instructions for the BIOS setup and software installation.

System Requirements

Before you use the MSI Smart Key, please check the hardware, software and operating system requirements first.

Operating System	Windows 98/ME/2000/XP
Connector	USB port
Disk Space	At least 2 MB to install the software application

Using MSI Smart Key

BIOS Setup

When the Smart Key is inserted into your computer, the BIOS will detect it automatically. You can enable or disable the Smart Key through the BIOS setting. **Please note that it needs a personalized password to execute any kind of Smart Key setting**; so, keep the password firmly in mind. If, unfortunately, the Smart Key is lost or the password is missed, you can not enter the operating system successfully. At this time, contact your local dealer for further service.

Enable/Disable the Smart Key

The first time installation

1. Insert the Smart Key into the computer and turn on the power.
2. Press <F7> during system boot up.
3. The message as below appears on the screen asking you to enable or disable the key:

```
Welcome to MSI Smart Key, please press "Y" to begin,
    press "N" to exit
```

Type <Y> to enable it; type <N> to disable it and bypass the BIOS to enter the operating system. When you type <Y>, it shows the following message:

```
Please input your password and press "Enter"
            password:
```

4. Type the password, up to 8 characters, and press <Enter>, it will show the following message to ask you to confirm the password:

```
Please input your password and press "Enter"
      Confirm your password:
```

Type the password again and press <Enter>.

5. After the password is confirmed, the system will generate a set of random ID, and record this ID into the BIOS ROM and the memory chip on the key; it will show the following message when the Smart Key is enabled successfully:

```
                Processing .....
   You have enabled the Smart Key Successfully
```

Then, you can enter the operating system and start to work.

Note:

1. *You should firmly remember the password you set; if the Smart Key is lost, you can get a new key from MSI, and turn on the computer with the original password.*

2. *To avoid the password from being forgotten, we provide the table below for you to keep note in this guide. Please write down the password and keep the guide properly.*

Enable/disable Smart Key function

1. Turn on the computer with the Smart Key installed.

2. Press <F7> during system boot up.

3. The message as below appears on the screen asking you to enable or disable the key:

```
     If you want to disable MSI Smart Key,
     please press "Y", or press "N" to exit
```

Type <Y> to disable it; type <N> to keep the function enabled and enter the operating system. When you type <Y>, it shows the following message:
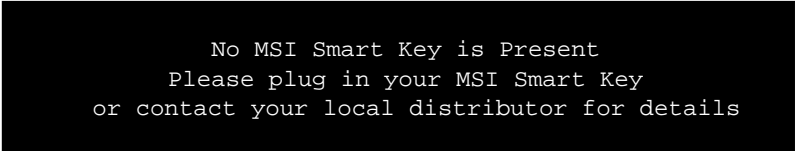
```
                Processing .....
    You have disabled the Smart Key Successfully
```

Then, you can enter the operating system and start to work.

Boot up with no key /wrong key/new key installed

Once the MSI Smart Key is enabled, always keep the key inserted in the computer. If the key is unplugged, other users can not access the computer. The message as below appears during the system booting up:

```
            No MSI Smart Key is Present
        Please plug in your MSI Smart Key
    or contact your local distributor for details
```

The user has to find and re-plug the original key into the computer to continue booting up the system. If the wrong key or a new key* is inserted, it will show the message as below on the screen:

```
        MSI Smart Key password is wrong

   Please input your password and press "Enter"
            password:
```

If the user remembers the original password, typing in the password will allow the user to enter the operating system, and the system BIOS will copy the original password data into the wrong key/new key. Otherwise, the system will halt after entering the wrong password for three times.

  * *If, unfortunately, your Smart Key is lost , you have to purchase a new key from MSI as a replacement.*

Software Setup

When the Smart Key is inserted into your computer and the software application is installed in the operating system, it will serve as a safeguard for your system. When the key is unplugged, the operating system will enter protection status immediately and the mouse and keyboard will be locked; when the key is inserted again, the operating system will resume from the protected mode.
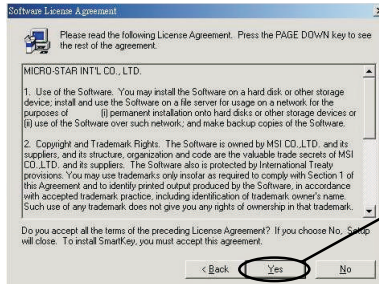
Installation

1. Install the Smart Key into the computer and turn on the power to enter the operating system successfully.

2. Insert the CD-ROM provided and the setup program will execute automatically. The welcome screen will appear as below:
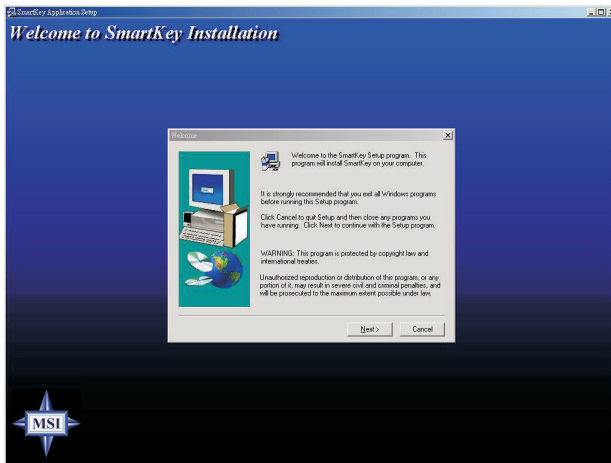
3. Press [Next >] to start the installation.

4. When the Software License Agreement window appears on the screen, press [Yes] to continue.

Click here

5. Choose the folder to install the software in your computer; simply press [Next >] to install it in the default folder.

Default folder
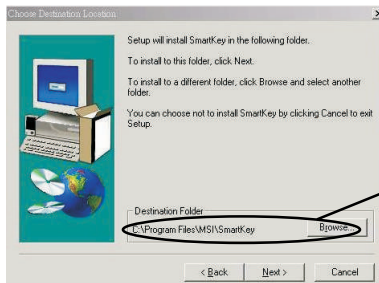
6. When the installation is completed, restart the computer as instructed.
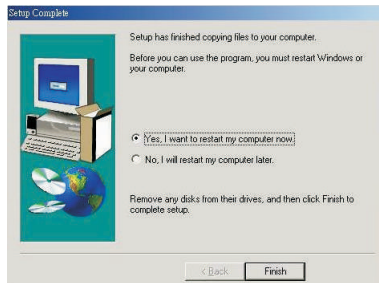
Using the Software Application

1. When the program is installed in the operating system, it will embed in the system tray and show an icon as below:

Smart Key icon

Note: When the Smart Key function is disabled in BIOS, this program will not be launched in the operating system.

2. To launch the program's setup screen, simply left-click on the Smart Key icon in the system tray. The program's setup screen appears as below.
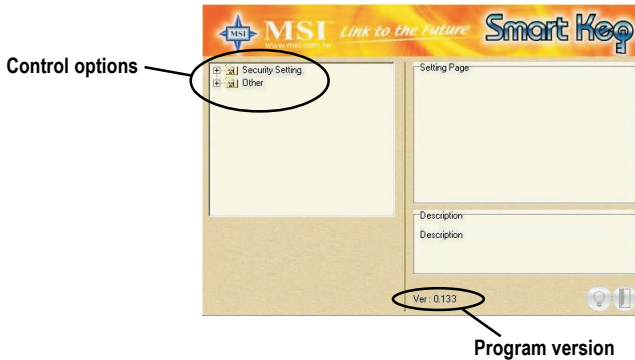
Control options

Program version

This window contains the information of the program and the main options for the user to control: ***Security Setting*** and ***Other***.

Security Setting

This option allows you to logon to Windows automatically. Select the "Auto Login" item and check the "Auto Logon to Windows" item in the Setting Page field to enable the function. Once the function is enabled and set properly, you do not have to type the user's name and password everytime when entering Windows.

Check this
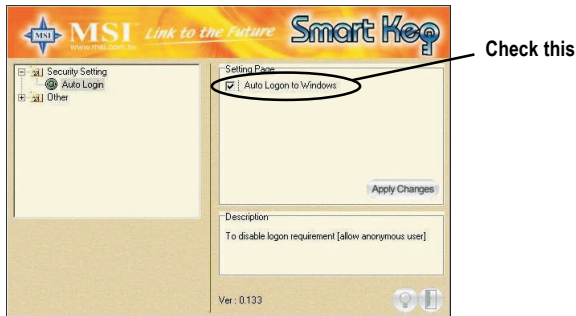
In Windows 2000, it will show the related fields when the "Auto Logon to Windows" is checked, you should fill in the correct information in these fields.

Enter the information

Other
 This option contains two items:
1) **Disable Screen Saver** allows you to enable/disable the screen saver program when the system is locked.

Check this

2) **Set Screen When System Locked** allows you to set the status when the Smart Key is unplugged and the system locked. You can set the monitor to display:
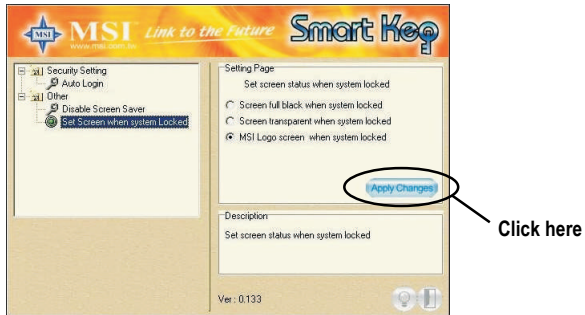
   a) blank screen

   b) the retaining screen when the system locked
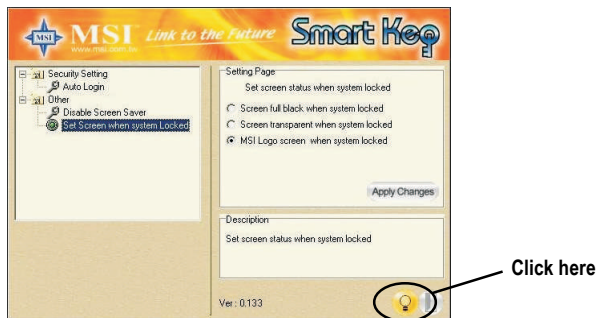
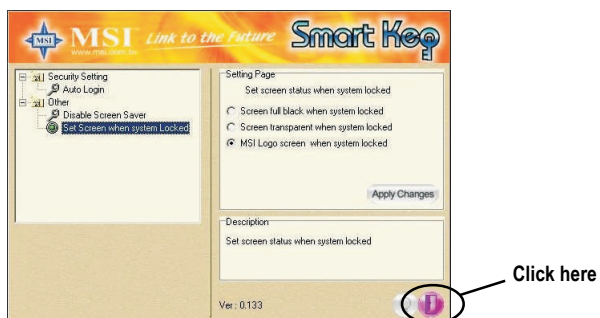   *c)* MSI Logo

The default setting is to show MSI Logo.
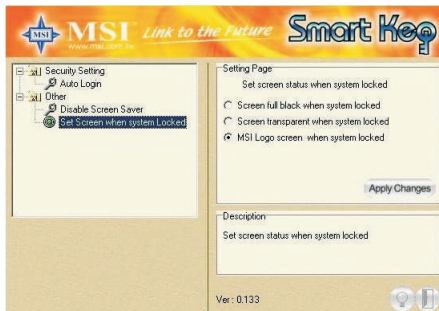
3. Press the "Apply Changes" button to enable the option you choose.

Click here

4. Press the "bulb" button at the right-bottom to hide the program in the system tray and keep on monitoring the system.

Click here
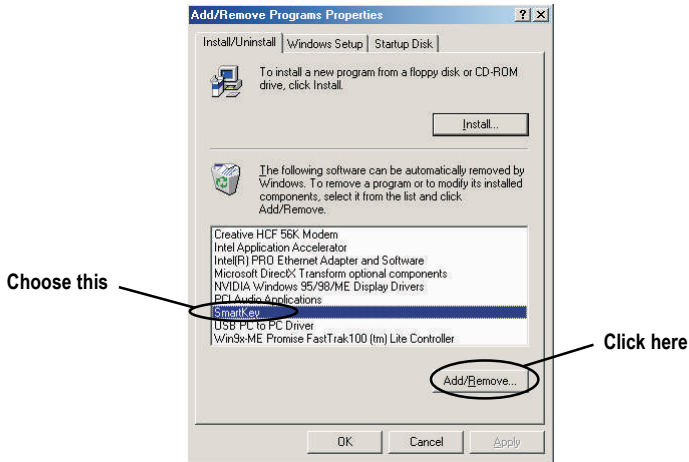
5. Press the "door" button at the right-bottom to exit the program.


Click here

Removing the Software Application

To remove the program, follow the steps below:

1. Click **Start** and choose **Settings** → **Control Panel**; double-click the **Add/Remove Programs** item to open the "Add/Remove Programs Properties" window.

Choose this

Click here

2. Select the "SmartKey" item in the field and click the [Add/Remove...]; when it shows the dialog box requiring your confirmation, press [Yes] to start removing the program as the on-screen instructions.
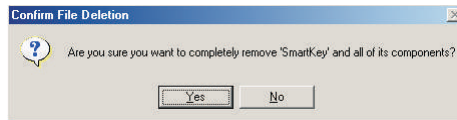
3. Restart the computer when the un-installation is completed.