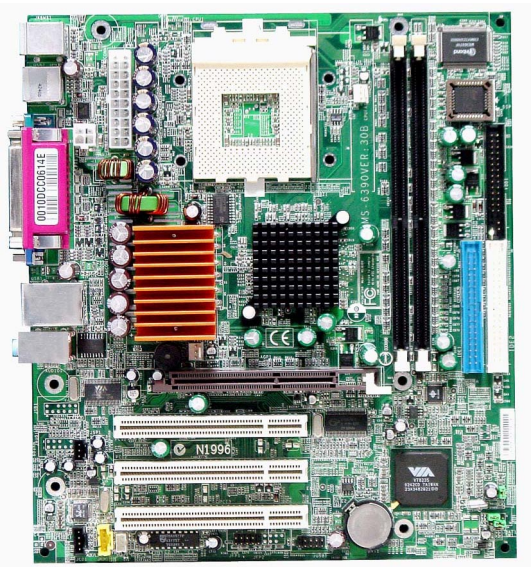
MS-6390 (v3.X)

M-ATX Mainboard



G52-M6390X2

Manual Rev: 3.0
Release Date: February 2004

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.

VOIRLANOTICED'INSTALLATIONAVANTDERACCORDERAURESEAU.

Micro-Star International MS-6390

FC **Tested to comply with FCC Standard**

For Home or Office Use

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Revision History

Revision	Revision History	Date
V3.0	First release with PCB 3.0	February 2004

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for FAQ, technical guide, BIOS updates, driver updates, and other information: **http://www.msi.com.tw/**
- Contact our technical staff at: **support@msi.com.tw**

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.
    - 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.

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Getting Started

Thank you for purchasing the MS-6390 v3.X Micro ATX mainboard. The MS-6390 is based on **VIA® KM266 & VT8235** chipsets for optimal system efficiency. Designed to fit the advanced **AMD® Athlon™**, **Athlon™ XP** or **Duron™** processors, the MS-6390 delivers a high performance and professional desktop platform solution.

Mainboard Specifications

CPU

➤ Supports Socket A (Socket-462) for AMD® Athlon™/Athlon™ XP/Duron™ processors.

➤ Supports up to 2600+ or higher speed.

Chipset

➤ VIA® KM266 North Bridge
- 200/266MHz FSB.
- Integrated ProSavage8 2D/3D graphic controller.
- AGP 4x and high bandwidth V-link host controller.
- Advanced memory controller supports PC1600/2100 DDR.

➤ VIA® VT8235 South Bridge
- High bandwidth V-link client controller.
- Direct sound ready AC97 digital audio controller.
- Ultra DMA 66/100/133 master mode EIDE controller.
- Supports both ACPI and legacy APM power management.
- Hi-Speed USB 2.0 controller, 480Mb/sec.
- Integrated Ethernet MAC.

Main Memory

➤ Supports four memory banks using two 184-pin DDR DIMMs.

➤ Supports up to 2GB PC2100/1600 DDR SDRAMs.

➤ Supports 2.5v DDR SDRAM.

Slots

➤ One AGP (Accelerated Graphics Port) slot.

➤ Three 32-bit Master PCI bus slots (support 3.3v/5v PCI bus interface).

On-Board IDE

➤ An IDE controller on the VT8235 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 66/100/133 operation modes.

➤ Can connect up to four IDE devices.

On-Board Peripherals

➤ On-Board Peripherals include:
- One floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes

- One serial port (COM A)
- One VGA port
- One parallel port supports SPP/EPP/ECP mode
- One RJ-45 LAN port
- Vertical audio ports
- One 3-pin internal speaker connector
- Six USB 2.0 ports (Rear * 4/ Front * 2)

Audio

➤ 5.1 channel AC'97 software audio integrated on VT8235 south bridge.
➤ RealTek ALC650 6-channel audio.

LAN

➤ VIA® VT8235 integrated MAC + VT6103 PHY.

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) function which records your mainboard specifications.

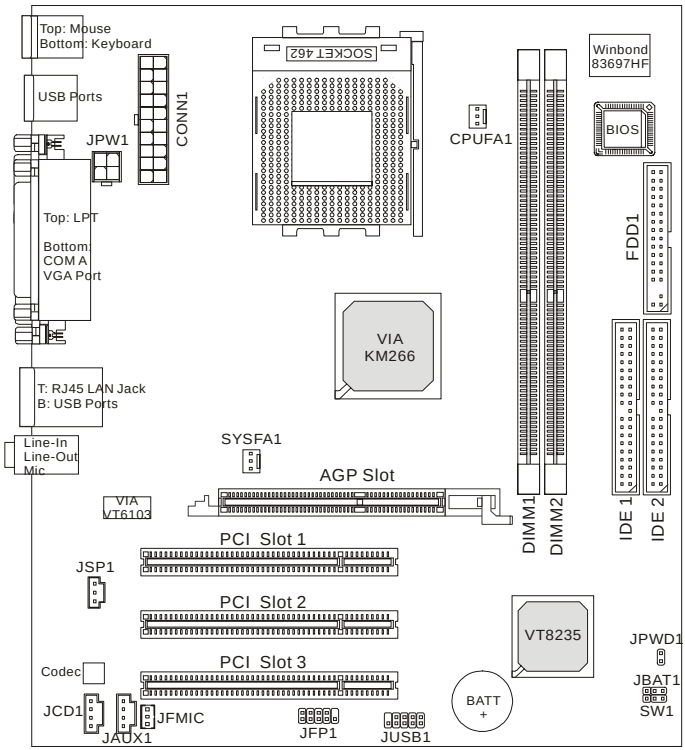
Dimension

➤ Micro ATX Form Factor: 24.5cm x 21.7cm.

Mounting

➤ 6 mounting holes.

Mainboard Layout



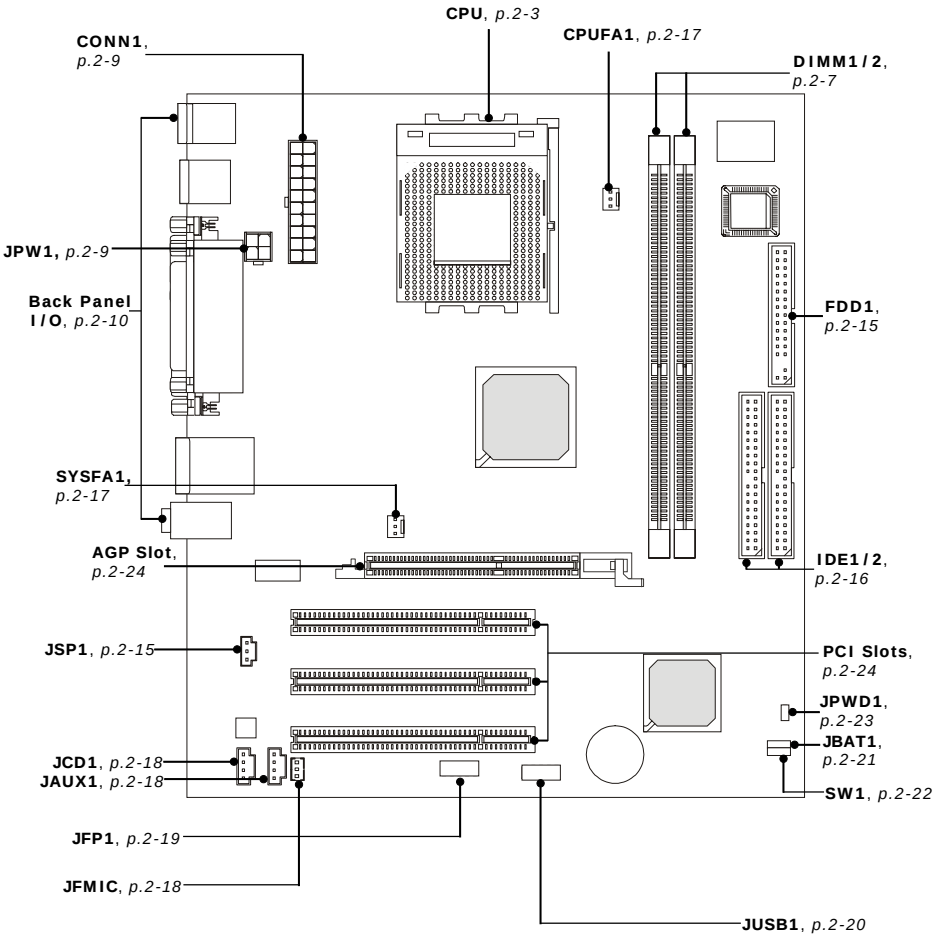
MS-6390 v3.X Micro ATX Mainboard

Hardware Setup

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.

Quick Components Guide



Central Processing Unit: CPU

The mainboard supports AMD® Athlon™, Athlon™ XP and Duron™ processors in the 462 pin package. The mainboard uses a CPU socket called Socket A for easy CPU installation. When you are installing the CPU, **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 Core Speed Derivation Procedure

If	CPU Clock	=	100MHz
	Core/Bus ratio	=	14
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	100MHz x 14
		=	1.4GHz

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 Athlon™/Duron™/Athlon™ XP processor with a speed of **600MHz and above** requires a 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. If you want to get more information on the proper cooling, you can visit AMD's website for reference.

CPU Installation Procedures for Socket 462

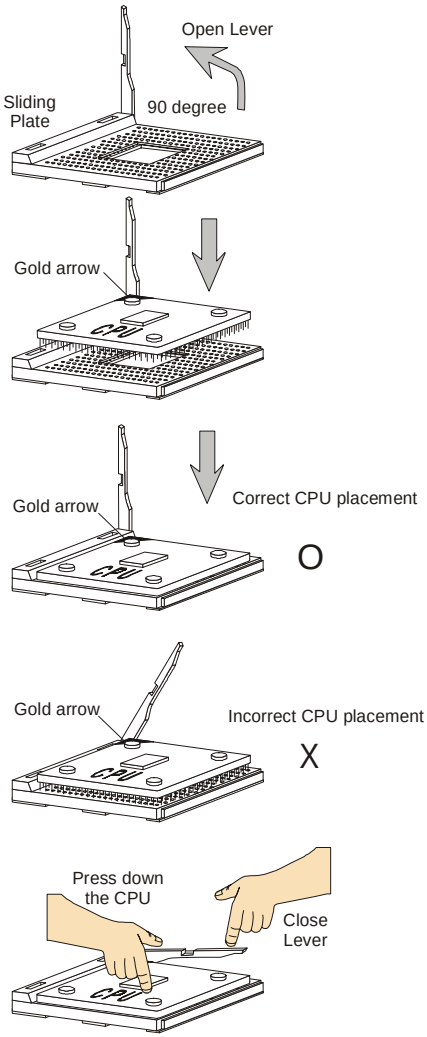
1. Please turn off the power and unplug the power cord before installing the CPU.

2. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.

3. Look for the gold arrow. The gold arrow should point towards the lever pivot. The CPU can only fit in the correct orientation.

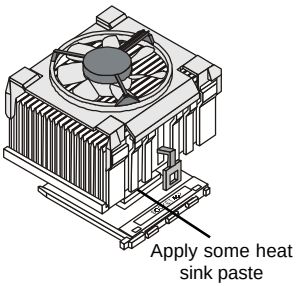
4. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your mainboard.

5. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.



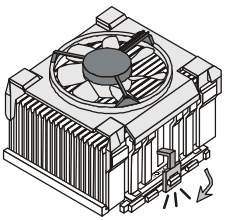
Installing AMD Athlon CPU (Socket 462) Cooler Set

The following instructions will guide you through the heat sink installation procedures. Please consult your agent for the proper CPU cooler set.



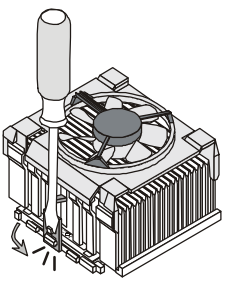
1. Position your CPU cooler set onto the CPU.

2. Use one end of the clip to hook the latch of the CPU sliding plate.



3. Hook the other latch to fix the cooling fan set. You may need a screw drive to press down the other side of the clip.

4. Connect the fan to the fan power connector provided on your mainboard.



NOTE:
Please apply some heat sink paste on top of CPU to dissipate the heat more effectively.

Setting CPU Clock Frequency through Jumper

The hardware configuration for CPU clock frequency of the motherboard is set to 133MHz by default. Therefore, to make a 100MHz CPU run at 100MHz when it is installed on the board, you have to adjust the CPU clock frequency through jumper.

To set the clock frequency of the installed CPU, refer to *Jumpers/FSB Clock Jumper: SW1* in later section of this chapter.

NOTE:

Overheating

Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

Replacing the CPU

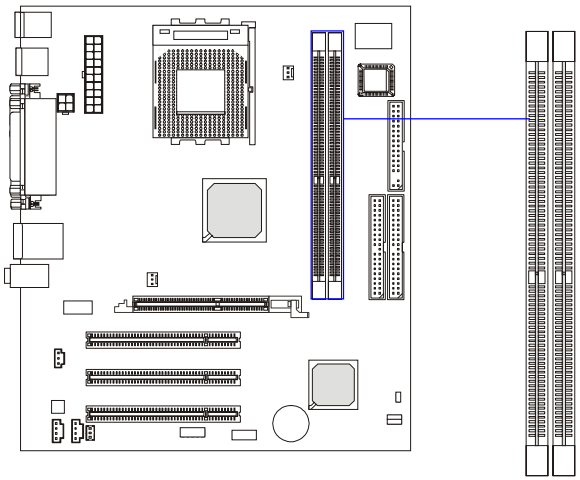
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from grounded outlet first to ensure the safety of CPU.

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 2 slots for 184-pin DDR SDRAM DIMM (Double In-Line Memory Module) modules and supports the memory size up to 2GB. You can install PC2100/DDR266 or PC1600/DDR200 modules on the DDR DIMM slots (DIMM 1~2).



DDR DIMM Slots (DIMM 1~2)

Introduction to DDR SDRAM

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transferring data twice per cycle. It 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. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

DIMM Module Combination

Install at least one DIMM module on the slots. Memory modules can be installed on the slots in any order. You can install either single- or double-sided modules to meet your own needs.

Memory modules can be installed in any combination as follows:

Slot	Memory Module	Total Memory
DIMM 1 (Bank 0 & 1)	S/D	64MB~1GB
DIMM 2 (Bank 2 & 3)	S/D	64MB~1GB
Maximum System Memory Supported		64MB~2GB

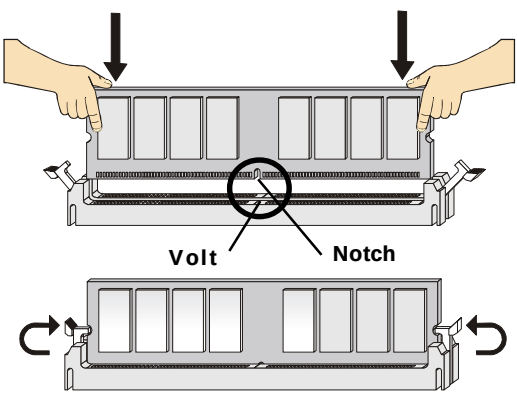
S: Single Side **D: Double Side**

Installing DDR Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the socket.

NOTE:
You can barely see the golden finger if the module is properly inserted in the socket.

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



Power Supply

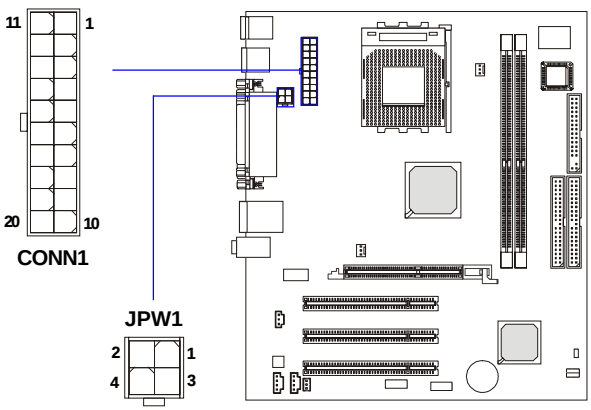
The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: CONN1

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 12V Power Connector: JPW1

This 12V power connector is used to provide power to the CPU.



JPW1 Pin Definition

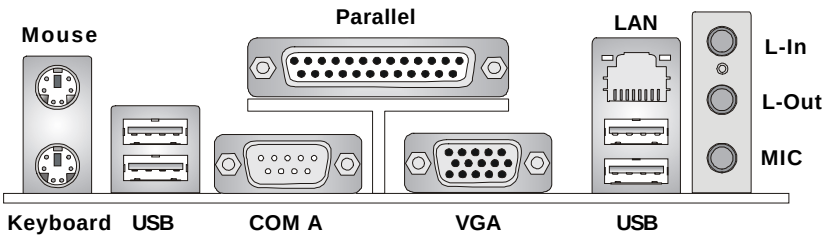
PIN	SIGNAL
1	GND
2	GND
3	12V
4	12V

CONN1 Pin Definition

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

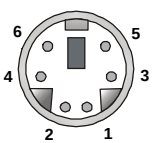
Back Panel

The back panel provides the following connectors:



Mouse/Keyboard Connector

The mainboard provides a standard PS/2® mouse/keyboard mini DIN connector for attaching a PS/2® mouse/keyboard. You can plug a PS/2® mouse/keyboard directly into this connector. The connector location and pin assignments are as follows:



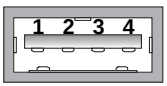
PS/2 Mouse/Keyboard (6-pin Female)

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Mouse/Keyboard Data	Mouse/Keyboard data
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse/Keyboard Clock	Mouse/Keyboard clock
6	NC	No connection

USB Connectors

The mainboard provides four UHCI (Universal Host Controller Interface) Universal Serial Bus roots for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug USB devices directly into the connectors.



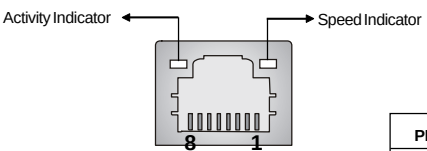
USB Ports

Pin Definition

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

RJ-45 LAN Jack

The mainboard provides one standard RJ-45 jack for connection to Local Area Network (LAN). You can connect a network cable to the LAN jack.



RJ-45 LAN Jack

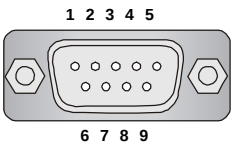
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	TDP	Transmit Differential Pair
2	TDN	Transmit Differential Pair
3	RDP	Receive Differential Pair
4	NC	Not Used
5	NC	Not Used
6	RDN	Receive Differential Pair
7	NC	Not Used
8	NC	Not Used

Serial Port Connector: COM A

The mainboard provides one 9-pin serial port connector COM A. This port is a 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to the connector.

COM A

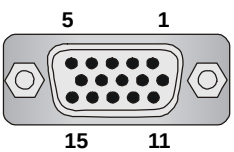


Pin Definition

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

VGA DB 15 Pin Connector

One DB 15-pin VGA connector is provided for connection to a VGA monitor.



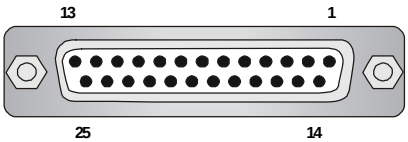
DB 15-Pin Female Connector

Pin Definition

Analog Video Display Connector (DB-15S)	
PIN	SIGNAL DESCRIPTION
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Power
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Parallel Port Connector: LPT1

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



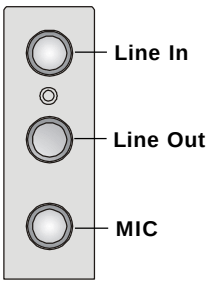
Pin Definition

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	PaperEnd
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

Audio Port Connectors

Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for microphones.

1/8" Stereo Audio Connectors

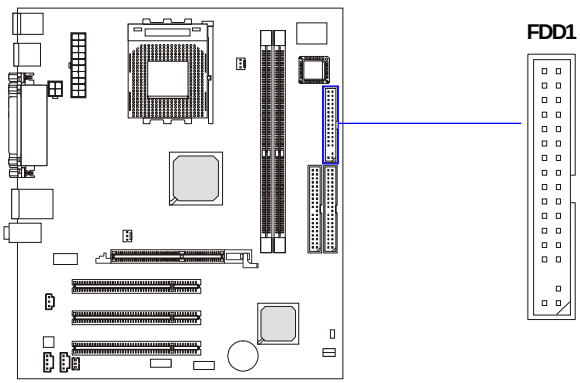


Connectors

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

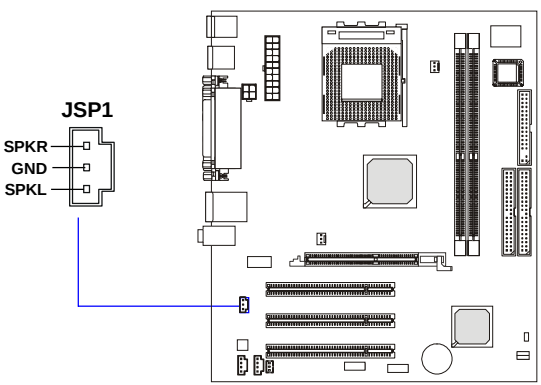
Floppy Disk Drive Connector: FDD1

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



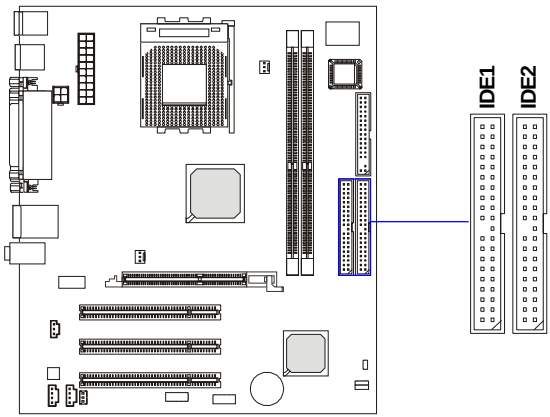
Internal Speaker Connector: JSP1

This connector is used to connect the internal speaker if available.



Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra ATA 66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra ATA 66/100 function. You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices.



IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

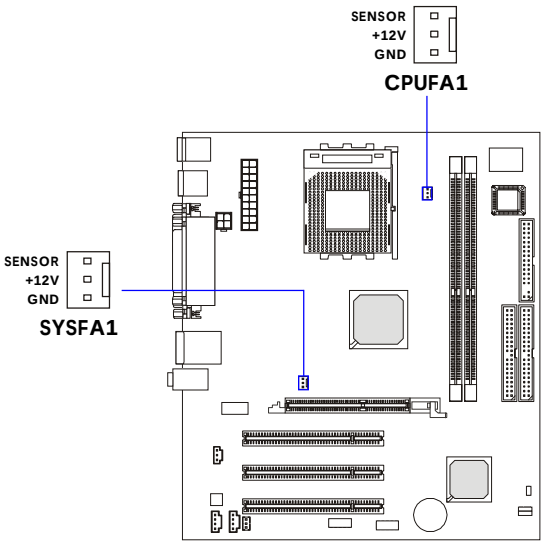
IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

NOTE:
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.

Fan Power Connectors: CPUFA1/SYSFA1

The CPUFA1 (processor fan) and SYSFA1 (system 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.



NOTE:
Always consult the vendors for proper CPU cooling fan.

CD-In Connector: JCD1

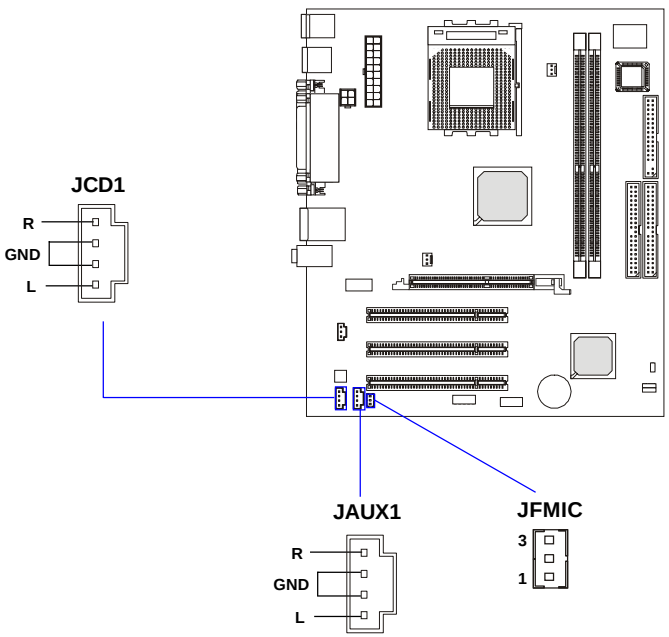
The connector is for CD-ROM audio connector.

Aux Line-In Connector: JAUX1

The connector is for DVD add-on card with Line-in connector.

Front Microphone Connector: JFMIC

This connector is used to connect the front panel microphone if available.

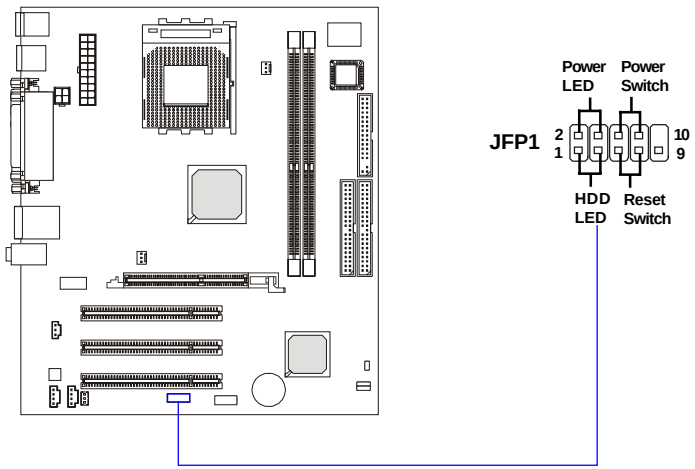


JFMIC Pin Definition

PIN	SIGNAL	DESCRIPTION
1	FMIC	Front Microphone
2	GND	Ground
3	VCC	VCC5V

Front Panel Connector: JFP1

The mainboard provides one front panel connector for electrical connection to the front panel switches and LEDs. The JFP1 is compliant with Intel® Front Panel I/O Connectivity Design Guide.

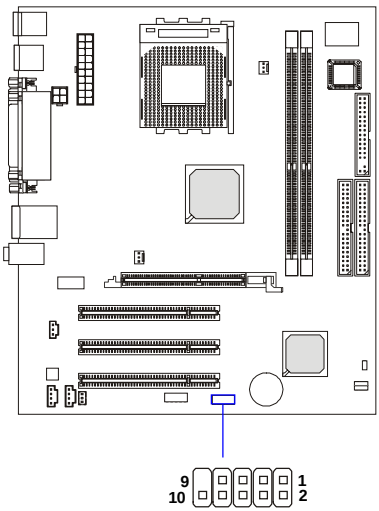


JFP1 Pin Definition

PIN	SIGNAL	DESCRIPTION
1	HD_LED_P	Hard disk LED pull-up
2	FP PWR/SLP	MSG LED pull-up
3	HD_LED_N	Hard disk active LED
4	FP PWR/SLP	MSG LED pull-up
5	RST_SW_N	Reset Switch low reference pull-down to GND
6	PWR_SW_P	Power Switch high reference pull-up
7	RST_SW_P	Reset Switch high reference pull-up
8	PWR_SW_N	Power Switch low reference pull-down to GND
9	RSVD_DNU	Reserved. Do not use.

Front USB Connector: JUSB1

The mainboard provides one USB 2.0 pin header *JUSB1* (optional USB 2.0 bracket available) that is compliant with Intel® I/O Connectivity Design Guide. 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**.



JUSB1

Pin Definition

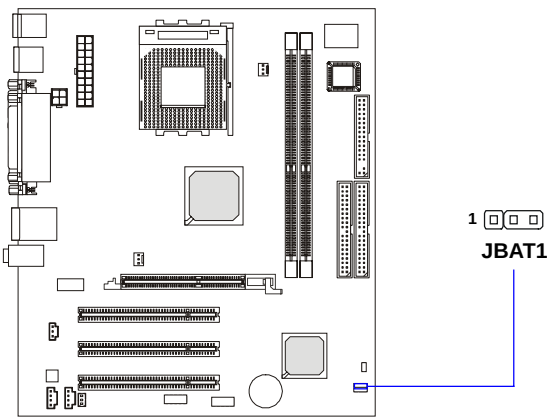
PIN	SIGNAL	PIN	SIGNAL
1	USBPWR	2	USBPWR
3	USBP4-	4	USBP5-
5	USBP4+	6	USBP5+
7	GND	8	GND
9	NC	10	USBOC

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:



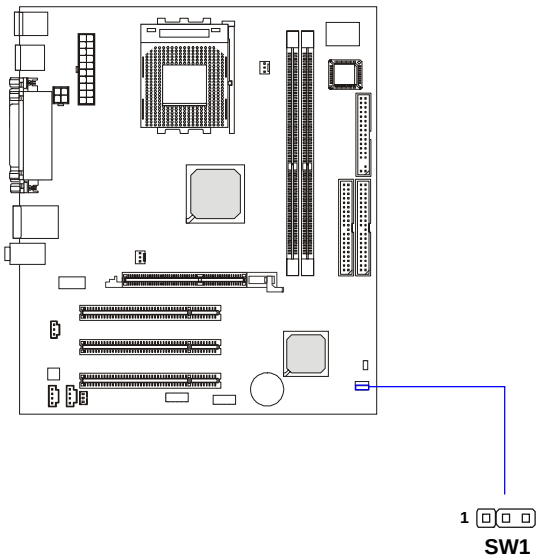
Keep Data

Clear Data

NOTE:
To clear CMOS, first make pin #2-3 short connected after the system is off. And then power on the system and short connect pin #1-2 before entering the BIOS (Standard CMOS Features) to clear data.

FSB Clock Jumper: SW1

These two jumpers provide 100MHz and 133MHz Front Side Bus frequency selection for overclocking purpose.

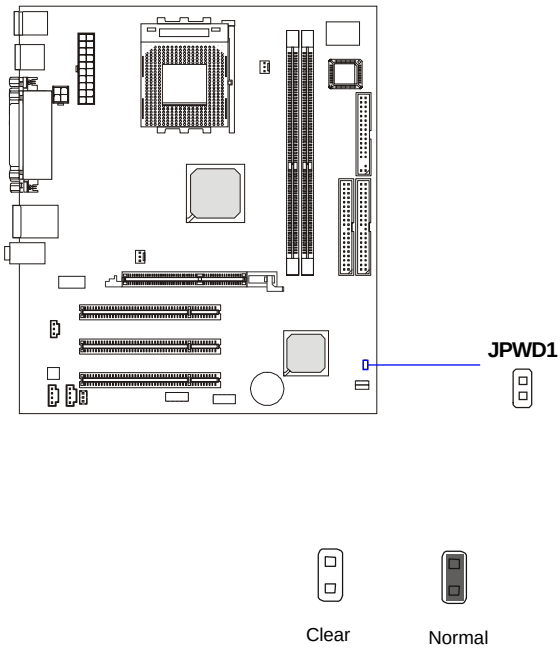


FSB = 100MHz

FSB = 133MHz

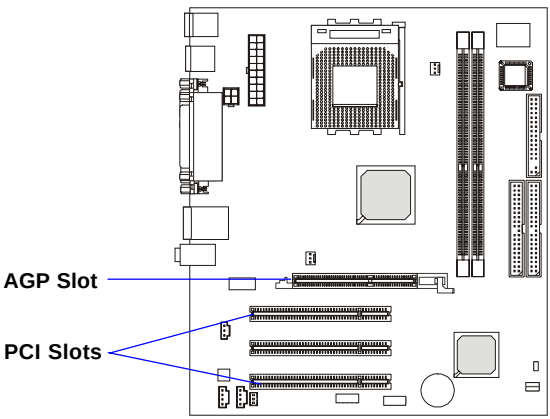
Clear BIOS Password Jumper: JPWD1

The jumper is used to clear the BIOS password. To clear the password, open the jumper and restart your computer.



Slots

The motherboard provides one AGP slot and three 32-bit Master PCI bus slots.



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.

PCI (Peripheral Component Interconnect) Slots

The 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.

PCI Interrupt Request Routing

The IRQ, acronym of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
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#

BIOS Setup

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use. You may need to run the Setup program when:

- An error message appears on the screen during the system booting up, and requests you to run SETUP.
- You want to change the default settings for customized features.

Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. Press <F1> to enter the BIOS Setup. If you fail to press <F1> and the system enters to the Windows OS 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.

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
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F5>	Reload Defaults
<F10>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

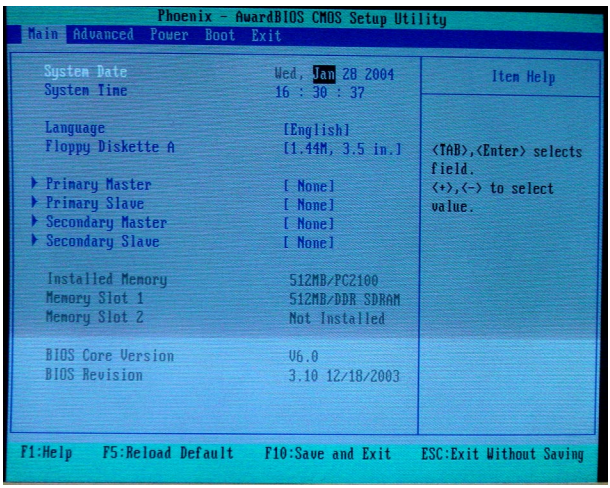
General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

NOTE:
The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.

Main

Once you enter Phoenix-Award® BIOS CMOS Setup Utility, the Main menu will appear on the screen. The Main menu allows you to select some basic information about the system. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



System 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.

System Time

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

Language

This item allows you to select the BIOS language.

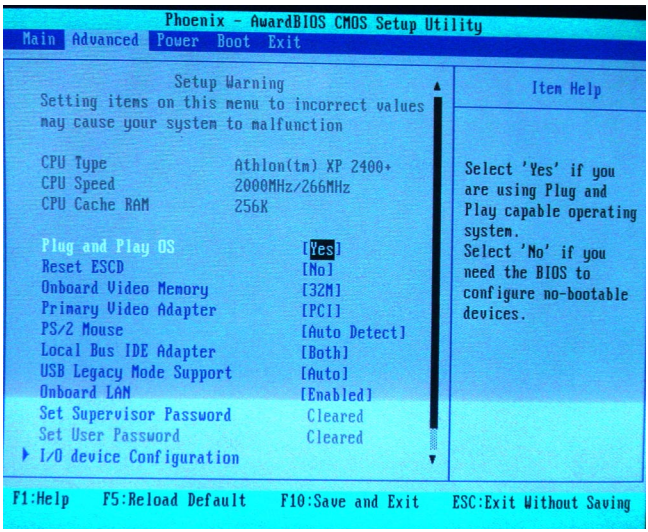
Floppy Diskette A
This item allows you to set the type of floppy drives installed. Available options: *Disabled, 720K, 3.5 in., 1.44M, 3.5 in., 2.88M, 3.5 in.*

Primary/Secondary Master/Slave
Press PgUp/<+> or PgDn/<-> to select *Manual*, *None* or *Auto* type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use *Manual* to define your own drive type manually.

Installed Memory / Memory Slot 1 / Memory Slot 2
These items show the memory status of your system (read only).

BIOS Core Version / BIOS Revision
These items show the BIOS status of your system (read only).

Advanced



CPU Type / CPU Speed / CPU Cache RAM
These items show the related information of CPU. (read-only)

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.

Reset ESCD
Normally, you leave this field *No*. Select *Yes* to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

Onboard Video Memory
The item is to set the onboard video memory. Settings: *8M, 16M, 32M.*

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

PS/2 Mouse
If your system has a PS/2 mouse port and you install a serial pointing device, select *Disabled*. Setting options: *Auto Detected, Disabled, Enabled.*

Local Bus IDE Adapter
The chipset contains a PCI IDE interface with support for two IDE channels. Select *Primary* to activate the only primary IDE interface, if you install an add-in secondary interface. Select *Both* to activate both interfaces, or *Disabled* to deactivate both interfaces, if you install both a primary and a secondary add-in IDE interface. Setting options: *Both, Disabled, Primary, Secondary.*

USB Legacy Mode Support
Set to *Enabled* if your need to use any USB 1.1/2.0 device in the operating system that does not support or have any USB 1.1/2.0 driver installed, such as DOS and SCO Unix. Set to *Disabled* only if you want to use any USB device other than the USB mouse. Setting options: *Disabled, Enabled.*

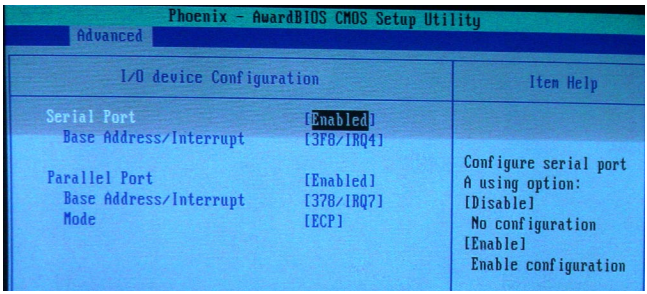
Onboard LAN
This setting controls the onboard LAN controller. Setting options: *Disabled, Enabled*.

Set Supervisor Password
The items allow you to set the password of the supervisor. With this password, one can enter and change the settings of the setup menu. Press <Enter> to change the password, then press <Enter> again if you want to disable the password.

Set User Password
The items allow you to set the password of the user. With this password, one can only enter but do not have the right to change the settings of the setup menu.

I/O device Configuration

Press <Enter> to enter the sub-menu screen.



Serial Port

Setting to *Enabled* to use the serial port. Setting options: *Enabled, Disabled.*

Base Address/Interrupt

This item is to select an address and corresponding address/interrupt for the first and second serial ports, and it is available only when **Serial Port** is set to ***Enabled***. The settings are: *3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto*.

Parallel Port

Setting to *Enabled* to use the parallel port. Setting options: *Enabled, Disabled.*

Base Address/Interrupt

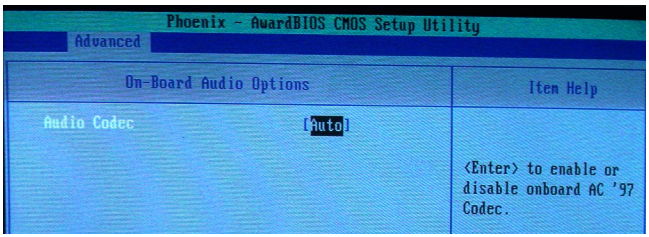
This item is to select an address and corresponding address/interrupt for the onboard parallel port, and it is available only when **Parallel Port** is set to ***Enabled***. The settings are: *378/IRQ7, 278/IRQ5, 3BC/IRQ7*.

Mode

This item selects the operation mode for the onboard parallel port. Settings: *ECP, Bi-directional.*

On-Board Audio Options

Press <Enter> to enter the sub-menu screen.

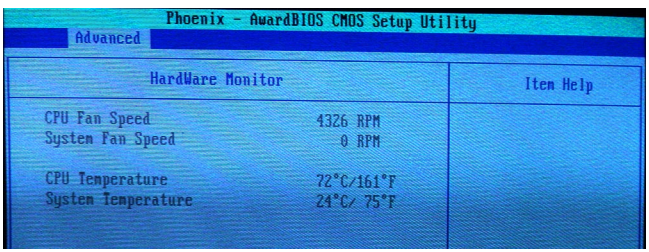


Codec

This item is used to enable or disable the onboard 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: *Enabled*, *Disabled* and *Auto*.

HardWare Monitor

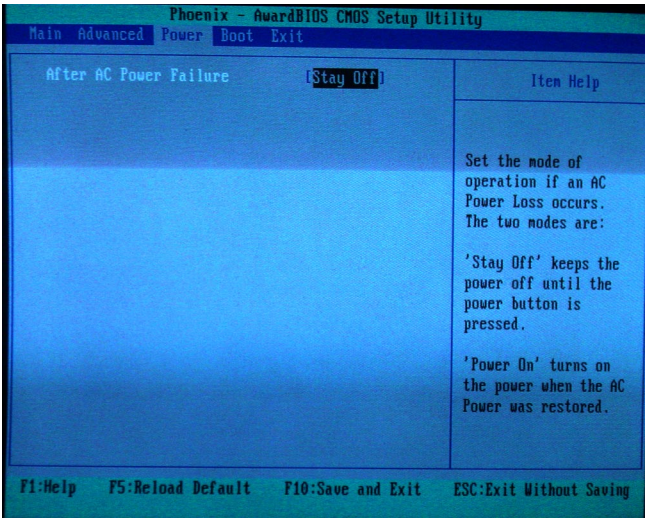
Press <Enter> to enter the sub-menu screen.



CPU/System Fan Speed, CPU/System Temperature

These items display the current status of all of the monitored hardware devices/components such as CPU temperatures and all fans' speeds.

Power

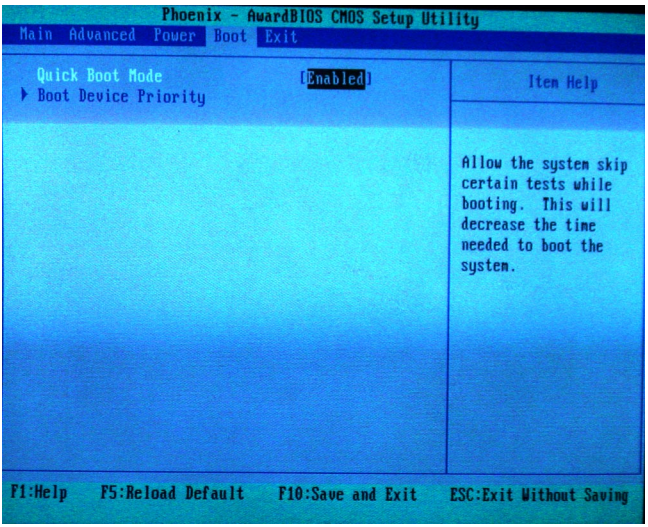


After AC Power Failure

This setting specifies whether your system will reboot after a power failure or interrupt occurs. Available settings are:

Stay Off	Leaves the computer in the power off state.
Power On	Leaves the computer in the power on state.
Auto	Restores the system to the previous status before power failure or interrupt occurred.

Boot

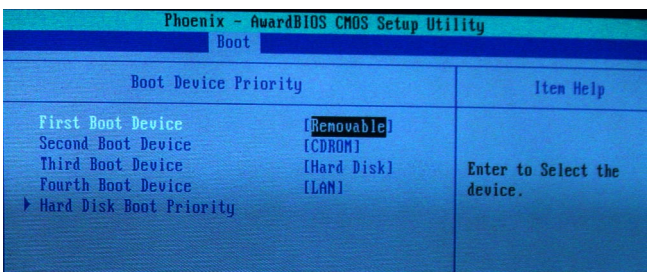


Quick Boot Mode

Setting the item to *Enabled* allows the system to boot within 5 seconds since it will skip some check items. Available options: *Enabled*, *Disabled*.

Boot Device Priority

Press <Enter> to enter the sub-menu and the following screen appears:



Boot Device Priority: 1st/2nd/3rd/4th

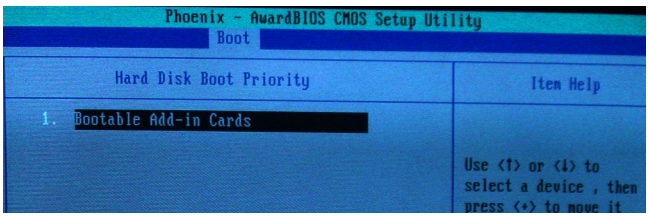
The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system.

MSI Reminds You...

Available settings for "1st/2nd/3rd/4th 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.

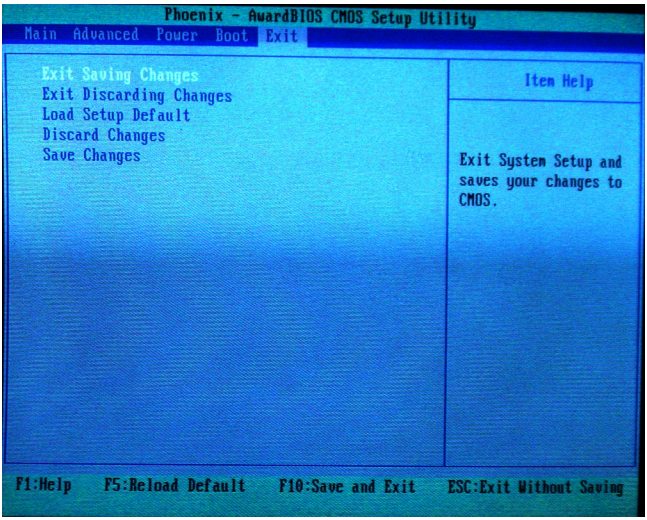
Hark Disk Boot Priority

Press <Enter> to enter the sub-menu and the following screen appears:



Here it shows the bootable add-in cards like IDE cards and SCSI cards... etc. Read-only.

Exit



Exit Saving Changes / Exit Discarding Changes / Load Setup Default / Discard Changes / Save Changes

You may choose one of these options before leaving the BIOS setup utility.

Exit Saving Change	Exit System Setup utility and saves your changes to CMOS.
Exit Discarding Changes	Exit System Setup utility without saving setup data to CMOS.
Load Setup Default	Load the default values for all the setup items.
Discard Changes	Load previous values from CMOS for all setup items.
Save Changes	Save Setup Datas to CMOS.