Introduction 1

The 694D Pro2 (MS-6321 v2.X) ATX mainboard is a high-performance computer mainboard based on **VIA® Apollo Pro133A** chipset. The 694D Pro2 is designed for Intel® Pentium® III (FC-PGA) processor for cost-effective business/personal desktop and entry-level server markets.

The **Apollo Pro133A** consists of the VT82C694XDP North Bridge and VT82C686B South Bridge. VT82C694XDP is a system controller supporting AGP 4X, 133MHz Front Side Bus and eight banks of PC100/PC133 SDRAMs. With 133MHz Front Side Bus, the north bridge optimizes the performance of Intel® Pentium III. The chipset's asynchronous bus design is also ideal for CPU to run at FSB speeds of 66 and 100MHz.

The VIA® VT82C686B Super I/O PCI integrated Peripheral Controller (PSIPC) includes PCI-to-ISA bridge controller, keyboard controller and USB controller. In addition, it supports dual bus-master IDE with Ultra DMA 33/66/100, four USB ports, system hardware monitoring and enhanced power management capabilities.

This chapter includes the following topics:

Mainboard Specification

CPU

- Supports dual Intel® Pentium III (FC-PGA/FC-PGA2) processor
- Supports 233MHz, 266MHz, 300MHz, 333MHz, 350MHz, 400MHz, 450MHz, 500MHZ, 533MHz, 667MHz, 700MHz, 733MHz, up to 1.13GHz

Chipset

- VIA® 694X chipset (510 BGA)
  - P-III FSB @133MHz
  - AGP 4X and PCI plus Advanced ECC Memory Controller
  - Supports PC100/133 SDRAM & VCM technology
- VIA® VT82C686B chipset (352 BGA)
  - Advanced Power Management Features
  - Dual bus Master IDE Ultra DMA 33/66/100
- 1394 PHY Controller (optional)
  - TI® TSB41LV02 PHY Digital-to-Analog Transceiver
  - Support up to Two 1394/1394A v 2.0 Compatible Data Channels
- 1394 Link Layer Controller (optional)
  - TI® TSB12LV26 1394 Link Layer Host Controller
  - IEEE 1394, 1394 OHCI v1.0 & 1394A v2.0 compatible
  - Supports 100/200/400 Mbps High Throughput
  - 3.3V & 5V Operation for PCI-to-1394 Interface

Clock Generator

- 66.6MHz, 100MHz and 133MHz clocks are supported.

Main Memory

- Supports eight memory banks using four 168-pin unbuffered DIMM
- Supports a maximum memory size of 2GB
  - Pin outs support 8 banks up to 2GB DRAM (256MB DRAM Technology) at 100MHz. However, it is recommended to install a limit of 3 DIMMS or 6 banks at 133MHz for 1.5GB maximum memory.
- Supports ECC (1-bit Error Code Correct) function
- Supports 3.3V SDRAM DIMM

Slots

- One AGP 4X (Accelerated Graphics Port) slot

- AGP specification compliant
- AGP 66/133MHz 3.3V device support

- 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® VT82C686B chipset provides IDE HDD/ CD-ROM with PIO, Bus Master and Ultra DMA 66/100 operation modes.
- Can connect up to four IDE devices

Promise RAID (Optional)

- Supports RAID 0 or 1
- Can connect up to four IDE HDDs (ATA33/66/100)

On-Board Peripherals

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 2 serial ports (COM A + COM B)
  - 1 parallel port supports SPP/EPP/ECP mode
  - 4 USB ports (2 Rear Connectors/ 2 from USB Front Pin Header -- one of the ports supports **USB PC to PC Networking** function)
  - 1 IrDA/HP connector for HPSIR

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.

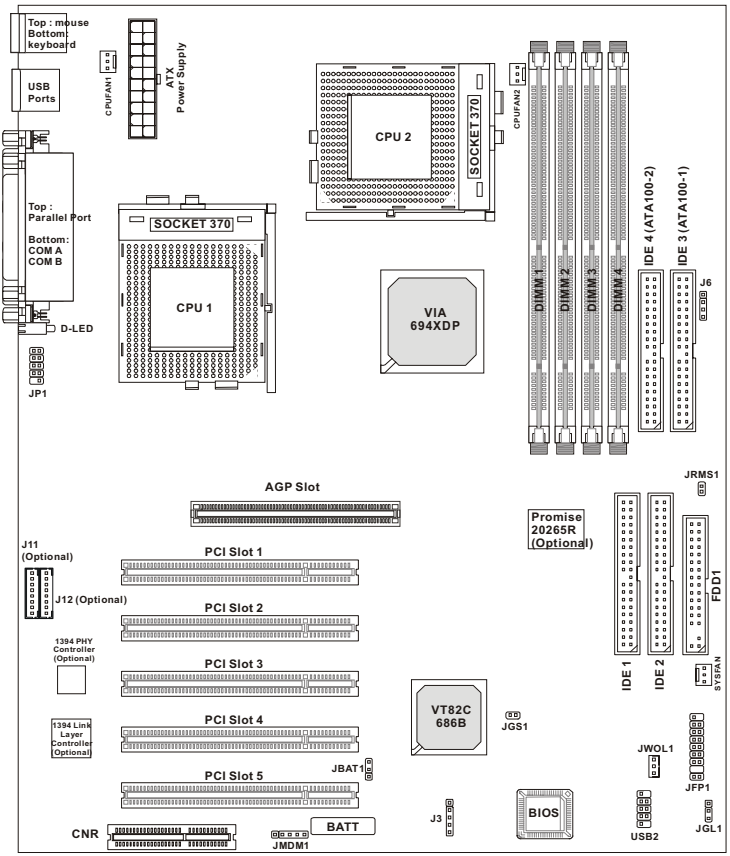
Dimension

- ATX Form Factor: 25.4cm (W) x 30.4cm (L)

Mounting

- 9 mounting holes

Mainboard Layout



694D Pro2 (MS-6321 v2.X) ATX Mainboard

Quick Components Guide

Component	Function	Reference
DIMM1~4	Installing SDRAM modules	See p. 2-5~2-6
Socket 370	Installing CPU(s)	See p. 2-2~2-3
CPUFAN1/2	Connecting to CPUFAN	See p. 2-21
SYSFAN	Connecting to SYSTEM FAN	See p. 2-21
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
USB2	Connecting to USB interface	See p. 2-22~2-24
PCI Slot 1~5	Installing expansion cards	See p. 2-29
AGP Slot	Installing AGP cards	See p. 2-29
CNR Slot	Installing expansion cards	See p. 2-29
JMDM1	Connecting to modem module	See p. 2-19
JWOL1	Connecting to LAN card	See p. 2-19
JBAT1	Clearing CMOS data	See p. 2-28
JFP1	Connecting to case	See p. 2-15
JGS1	Connecting to power saving switch	See p. 2-18
JGL1	Connecting to power saving LED	See p. 2-17
J3	Connecting to IR module	See p. 2-20
JRMS1	Connecting to power switch	See p. 2-18
J6	Connecting to HDD LED	See p. 2-20
J11 & J12	Connecting to IEEE 1394 interface	See p. 2-26~2-27
JP1	Connecting to D-Bracket™	See p. 2-25

Key Features

- ATX Form Factor
- CPU: Socket 370 for **Single/Dual** Intel® Pentium III
- Memory: 4 PC100/PC133 SDRAMs
- Slot: 1 AGP slot, 1 CNR slot, 5 PCI slots
- I/O: 2 serial ports, 1 parallel port, 4 USB ports, 1 floppy port, 1 IrDA connector
- USB Interface: USB 1.1 PC to PC Networking
- Jumperless
- 1394 Interface (optional)
- 2 IDE RAID connectors supporting RAID 0 or 1 (optional)
- T.O.P Tech™ - Thermal Overheat Protection Technology
- PC Alert™ III system hardware monitor
- D-LED™ - 4 LEDs embedded in the mainboard

MSI Special Features

T.O.P Tech™

The T.O.P Tech™ is a extended sensing device that can 100% accurately detect the CPU's temeprature. You can find out the temperature on BIOS setup menu. The PC Alert™ also provides the information.

CPU temperaure on Setup menu

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
PC Health Status

Current CPU1 Temp.	40°C/104°F	Item Help
Current CPU2 Temp.	30°C/86°F	
Current CPUFAN1 Speed	4200Rpm	Menu Level ▸
Current CPUFAN2 Speed	6124Rpm	
CPU1 Vcore	1.64V	
CPU2 Vcore	1.98V	
3.3V	3.31V	
5V	4.95V	
12V	11.64V	

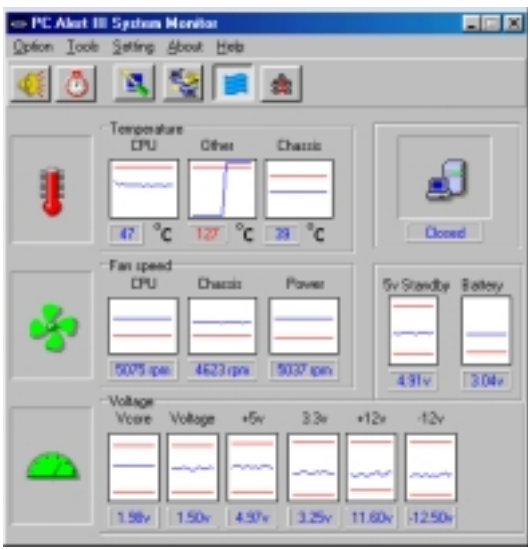
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

PC Alert™ III

The PC Alert™ III is an 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 above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This will continue to be shown,until user disables the warning.



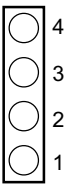
Note: *Items shown on PC Alert III vary depending on your system's status.*

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

D-LED™ & 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.

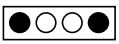
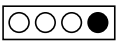
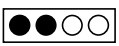
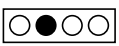
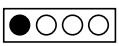


Diagnostic LED

If your motherboard supports and installs D-Bracket™ which also integrates four Diagnostic LEDs, definitions of the LED signals are the same as D-LED™ as shown below.

● **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.

D-LED	D-Bracket	Description
		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

2 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.

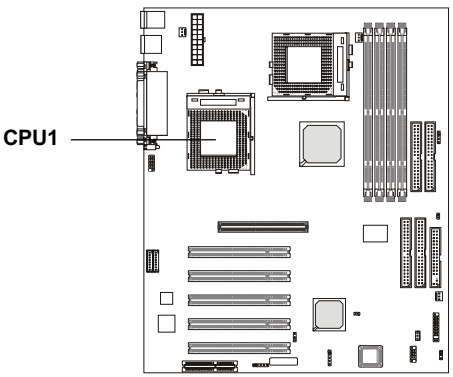
Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

Central Processing Unit: CPU

The mainboard supports **Single/Dual** Intel® Pentium III processor(s). The mainboard uses two CPU sockets called Socket 370 for easy CPU installation. You can install SINGLE or DUAL CPUs on the board to meet your own needs. Keep the following points in mind before installing CPU(s):

1. If **SINGLE** CPU is intended, always install the CPU on the **CPU1** socket.

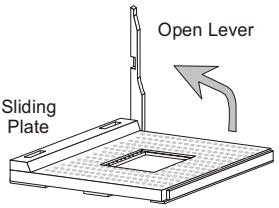


2. To install **DUAL** CPUs on the board, you must use **the same types of CPUs running at the same FSB frequency**.

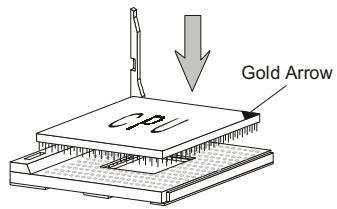
When you are installing the CPU, **make sure the CPU has a Heat Sink and a cooling fan attached on the top to prevent overheating.** If you do not find the Heat Sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

CPU Installation Procedures

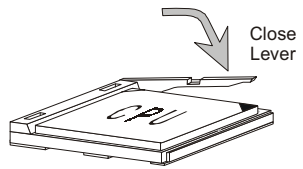
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Look for the gold arrow. The gold arrow should point towards the end of lever. The CPU will only fit in the correct orientation.



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



WARNING!

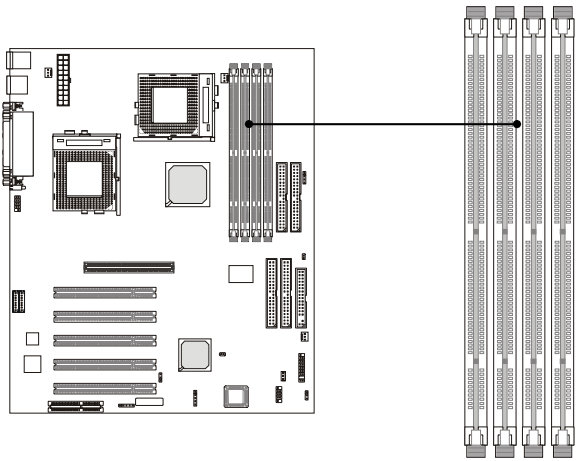
Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

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

Memory Installation

The mainboard provides 4 sockets for 168-pin, 3.3V SDRAM DIMM with 8 memory banks. To operate properly, at least one DIMM module must be installed.



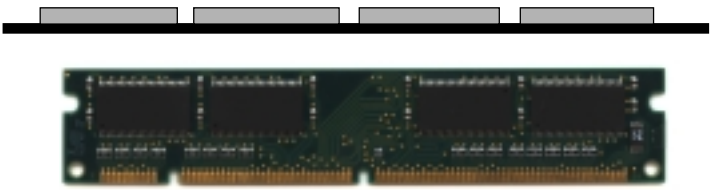
SDRAM DIMM Slots (DIMM 1~4)

The SDRAM Addressing & Size

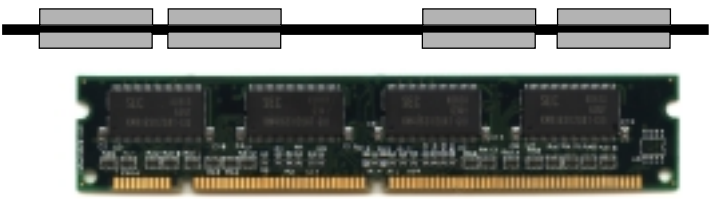
DRAM Tech.	DRAM Density & Width	DRAM Addressing	Address Size		MB/DIMM	
			Row	Column	Single no. Side(S) pcs.	Double no. Side(D) pcs.
16M	1Mx16	ASYM	11	8	8MBx4	16MBx8
	2Mx8	ASYM	11	9	16MBx8	32MBx16
	4Mx4	ASYM	11	10	32MB	64MB
64M	2Mx32	ASYM	11	9	32MBx2	64MBx4
	2Mx32	ASYM	12	8	16MBx2	32MBx4
	4Mx16	ASYM	11	10	32MB	64MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB
64M	2Mx32	ASYM	12	8	16MB	32MB
	4Mx16	ASYM	13	8	32MB	64MB
	8Mx8	ASYM	13	9	64MB	128MB
	16Mx4	ASYM	13	10	128MB	256MB

Module Installation Procedures

You can install single sided or double sided 168-pin DIMMs into DIMM slots according to your needs.



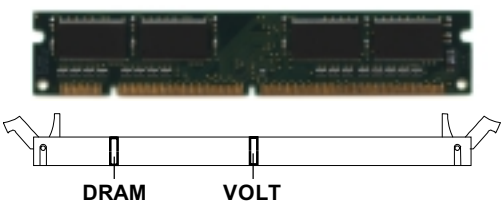
Single Sided DIMM



Double Sided DIMM

1. The DIMM slot has 2 Notch Keys "VOLT and DRAM", so the DIMM memory module can only fit in one direction.

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



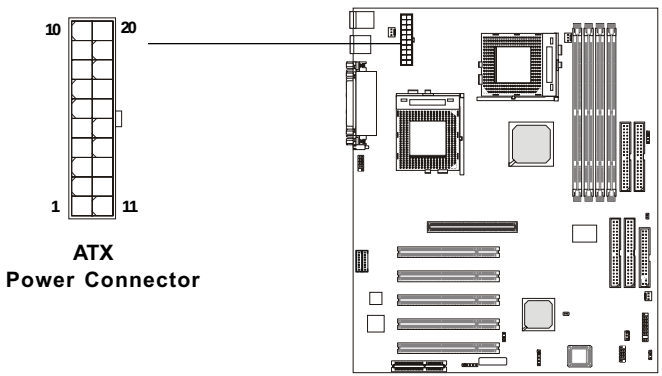
3. The plastic clips at sides of the DIMM slot will automatically close.

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 plugs 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. The power connector supports **instant power on** function which means that system will boot up immediately when the power supply connector is inserted on the board.

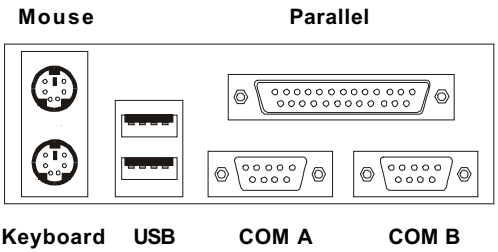


ATX
Power Connector

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

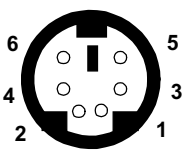
Back Panel

The Back Panel provides the following connectors:



Mouse 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.



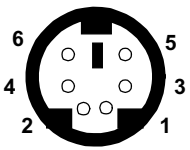
PS/2 Mouse (6-pin Female)

Pin Definition

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.



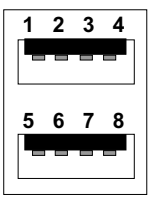
PS/2 Keyboard (6-pin Female)

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

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.



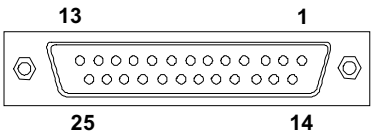
USB Ports

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

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.

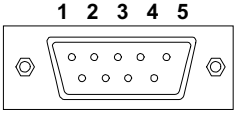


Pin Definition

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	Ground1

Serial Port Connector: 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.



9-Pin Male DIN Connectors

Pin Definition

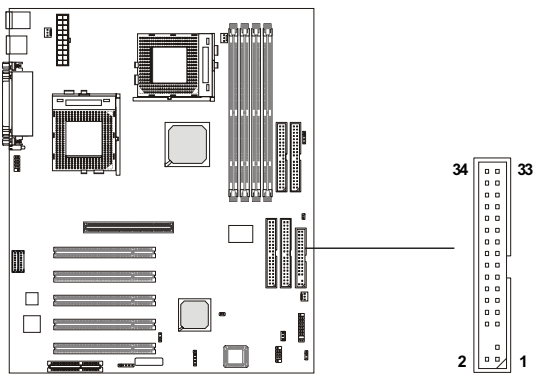
PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready)
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

Connectors

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

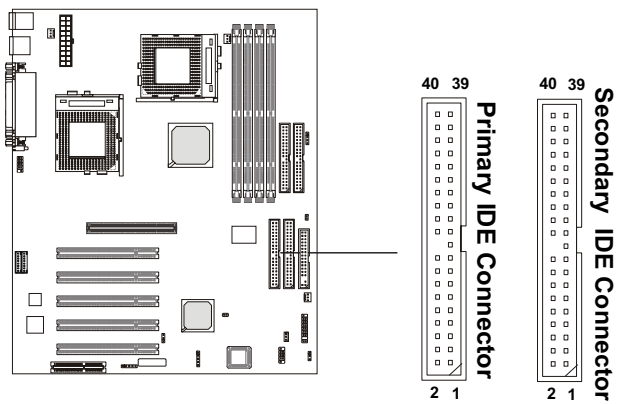
The mainboard uses an IDE controller on the VIA® VT82C686B chipset that provides PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100 modes. It has two HDD connectors IDE1 (Primary) and IDE2 (Secondary). You can connect up to four hard disk drives, CD-ROM or 120MB Floppy to IDE1 and IDE2.

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.



TIP:

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.

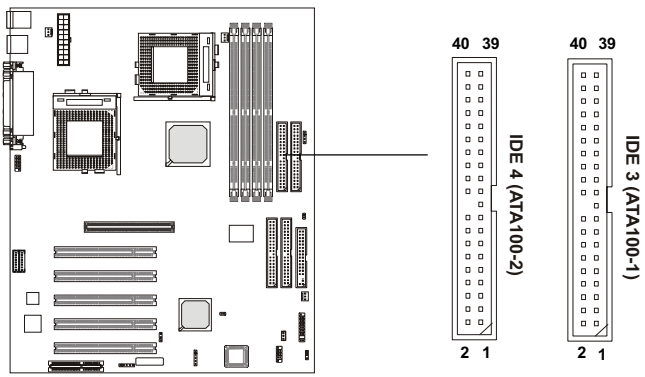
IDE RAID Connectors: IDE3 & IDE4 (Optional)

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) and 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 only two of the hard disk drives will adopt RAID function.)

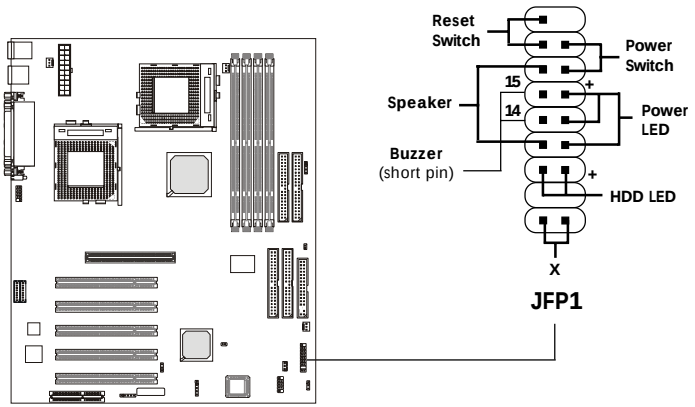


TIP:

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.

Case Connector: JFP1

The case connector block JFP1 allows you to connect to the Power Switch, Reset Swtich, Speaker, Power LED, and HDD LED on the case.



Power Switch

Connect to a 2-pin push button switch. The switch has the same feature as JRMS1.

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. There are two types of LEDs you can connect from the system case to the pin:

> **2-pin single color power LED:** Connected to pin 5 & 6. When the system enters the suspend/sleep mode, the 2-pin power LED blinks.

3-pin dual color power LED (ACPI request): Connected to pin 4, 5 & 6. The 3-pin power LED changes its color to indicate different system states:

GREEN color indicates Full-On mode.
ORANGE color indicates suspend/sleep mode.

Speaker

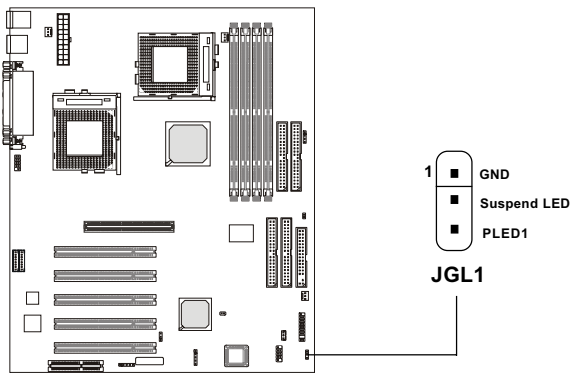
Speaker from the system case is connected to this pin.
If on-board Buzzer is available, then:
Short pin 14-15: On-board Buzzer Enabled.
Open pin 14-15: On-board Buzzer Disabled.

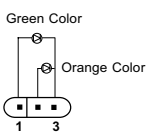
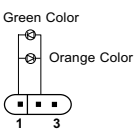
HDD LED

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.

Power Saving LED Connector: JGL1

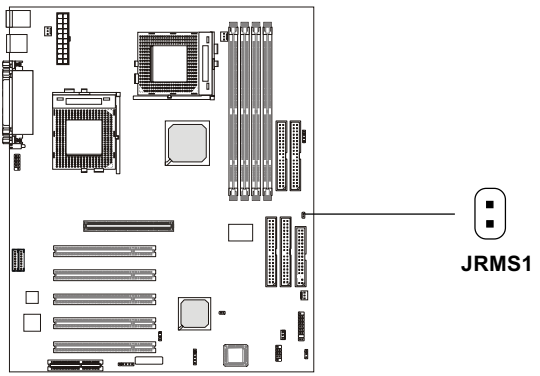
JGL1 is connected to a power saving LED. There are two types of LED that you can use: 3-pin or 2-pin (ACPI request) LED. If connected to a dual color LED, the LED light is green when system in turned on, and turns to orange color while entering the sleep state. For single color LED, the LED is lit when system is on, and blinks during the sleep state.



3-Pin LED	2-Pin LED
	
1-2 Single Color 1-3 Blink	1-2 Dual Color

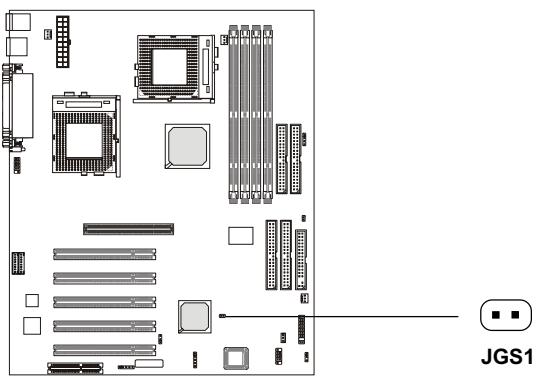
Remote Power On/Off Switch Connector: JRMS1

Connect to a 2-pin push button switch. When OFF, pressing the button can turn the system on. When ON, pressing the button once will make the system enter the sleep/suspend state. If the button is pressed for more than four seconds, the system will be turned off. To change the setup, go to the BIOS Power Management Setup.



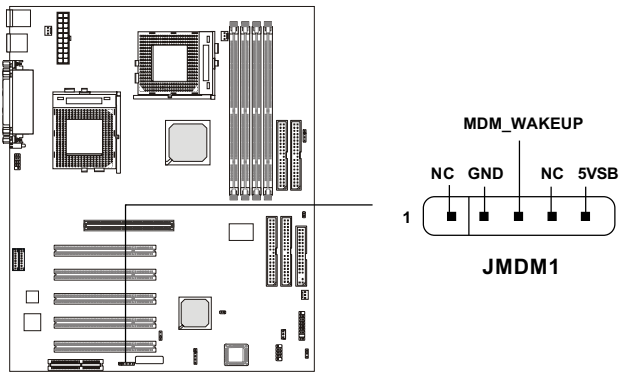
Power Saving Switch Connector: JGS1

Attach a power saving switch to this connector. Pressing the switch once will have the system enter the sleep/suspend state. Press any key to wake up the system.



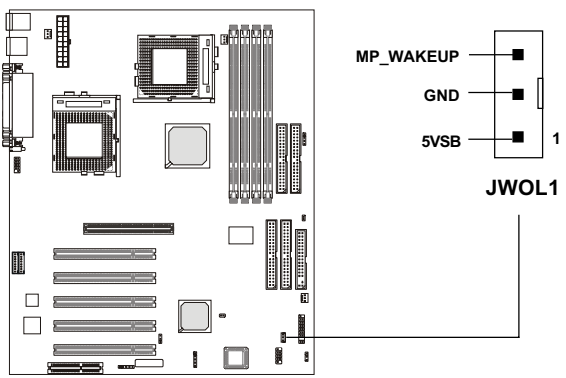
Wake On Ring Connector: JMDM1

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.



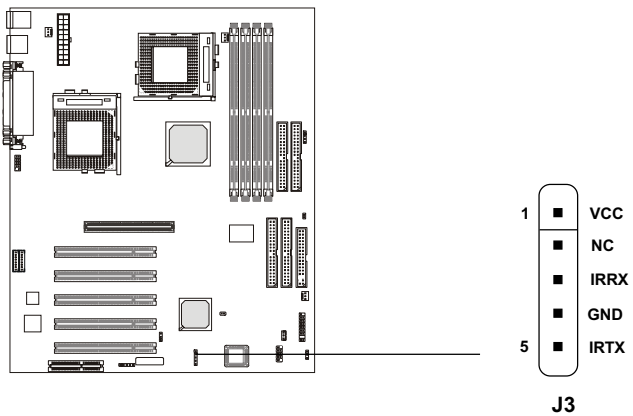
Wake On LAN Connector: JWOL1

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.



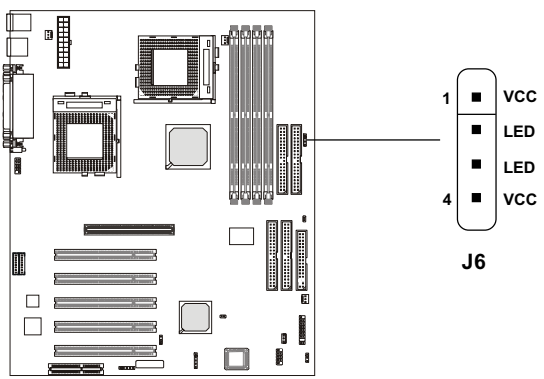
IrDA Infrared Module Connector: J3

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.



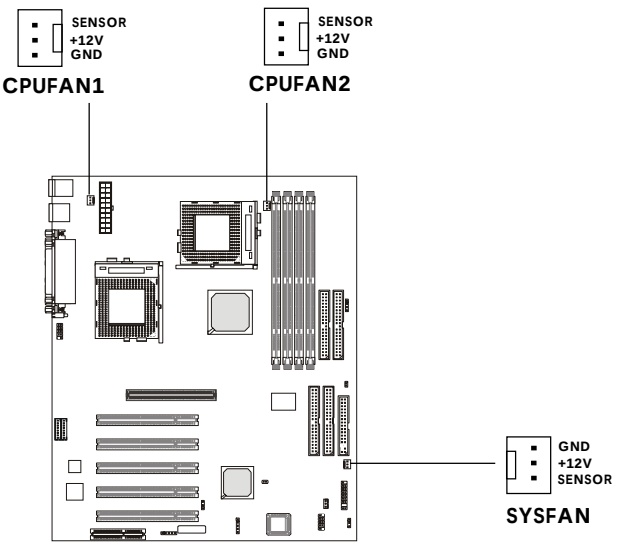
IDE RAID HDD LED Connector: J6

The connector is used to connect to a HDD LED for showing the activity of a hard disk drive attached to the IDE 3 or IDE4 connector.



Fan Power Connectors: CPUFAN1/CPUFAN2/SYSFAN

The CPUFAN1/CPUFAN2 (processor fans) and SYSFAN (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. 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.



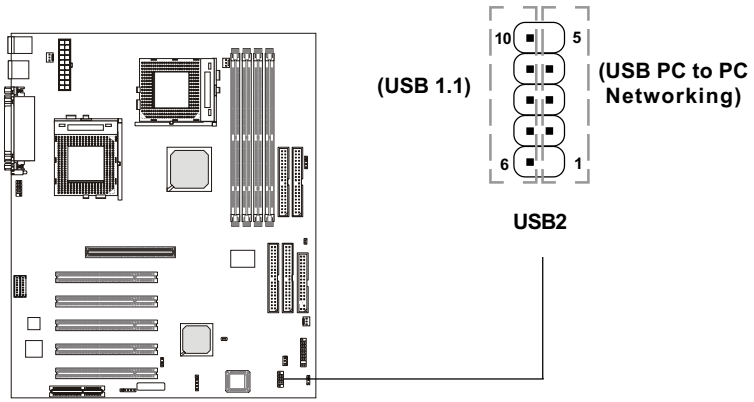
Note:

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 temeperature.

USB PC To PC Connector: USB2

The mainboard provides one USB (Universal Serial Bus) pin header that allows you to connect optional USB ports. One of the USB port is implemented with USB PC to PC Networking function.

The mainboard can offer **three USB 1.1 ports** and **one USB PC2PC port**.



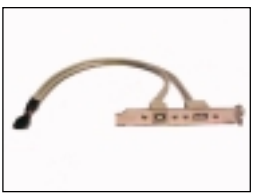
USB2 Pin Definition

Pin	Description	Pin	Description
1	NC	6	GND
2	USB3-	7	GND
3	USB3+	8	USB2+
4	GND	9	USB2-
5	NC	10	VCC

Note: *USB PC to PC Networking feature allows users to transfer and receive data from other computers or share system resources with other computers without using any network adapter. See below for instructions.*

To Attach the USB PC to PC cable

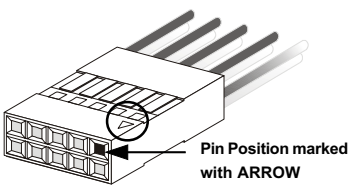
1. Check whether the package includes the following items. If any is missing, contact your dealer.

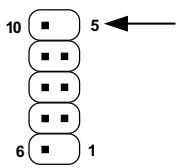


USB PC to PC Bracket

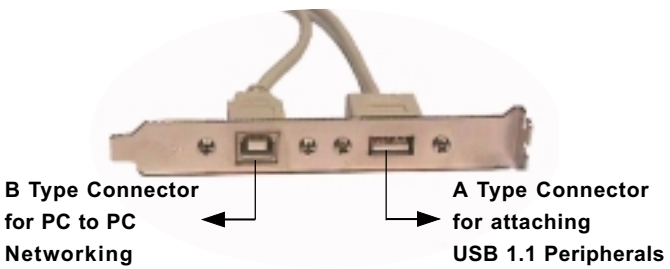
USB PC to PC Cable

2. Connect the USB Bracket cable to the USB2 pin header on the mainboard. Locate the pin position marked with the ARROW on the connector of USB Bracket and Pin# 5 of USB2. Then align the marked pin position with Pin# 5 to attach the USB Bracket.

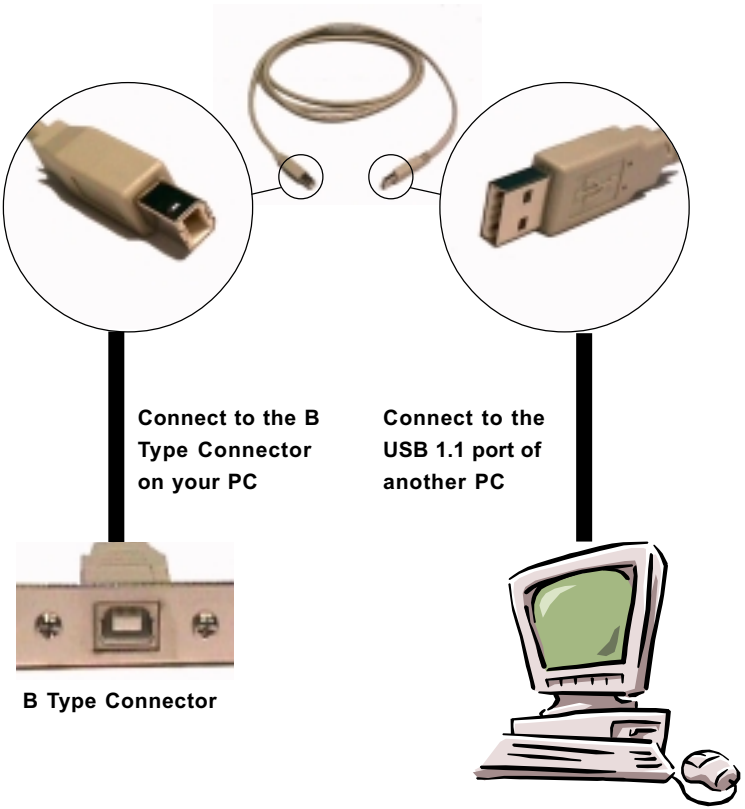




3. Identify the **B Type Connector** on the bracket used for PC to PC Networking function.



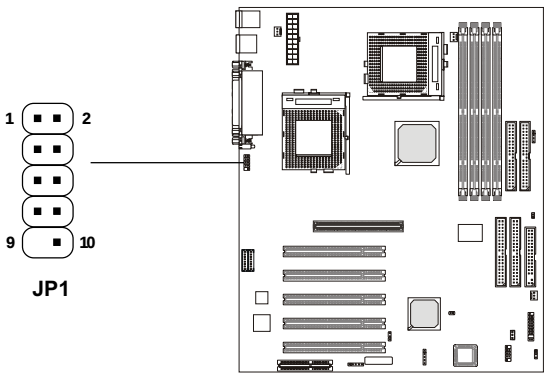
4. Connect your PC to another PC via USB PC to PC cable. The transfer rate will run at USB 1.1 speed (12Mbps/s).

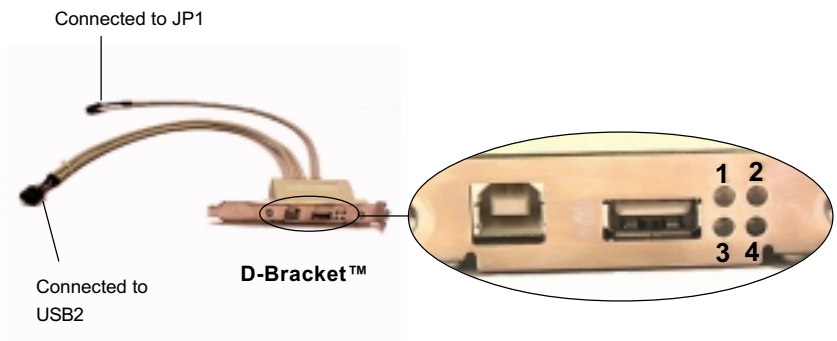


For more information on USB PC to PC Networking function, refer to Appendix A: USB PC to PC Networking Function.

D-Bracket™ Connector: JP1 (Optional)

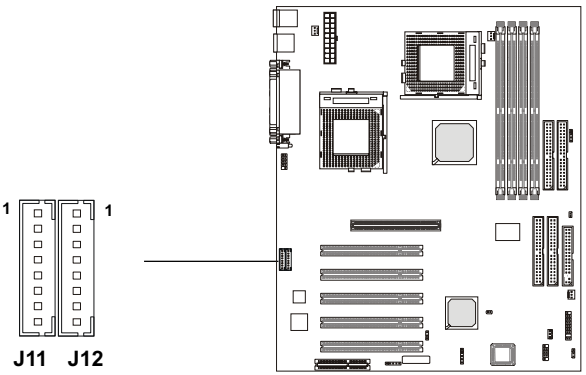
If your motherboard comes with JP1 connector, you can connect a D-Bracket™ to JP1. D-Bracket™ is a USB Bracket integrating four LEDs whose functions are similar to D-LED™ and allows users to identify system problem through 16 various combinations of LED signals. For definitions of 16 signal combinations, refer to page 1-10 *D-LED™ & D-Bracket™*.





IEEE 1394 Connectors: J11 & J12 (Optional)

The mainboard provides two 1394 pin headers that allow you to connect optional IEEE 1394 ports.

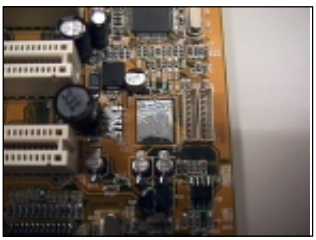


Pin	Signal	Pin	Signal
1	PWR	5	TPA-
2	GND	6	TPA+
3	TPB-	7	SHLD
4	TPB+	8	SHLD

How to attach the IEEE 1394 Port:

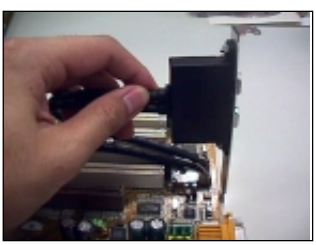
1. Take out the IEEE 1394 Port.

2. Locate the IEEE 1394 connectors (J11 & J12) on the mainboard.



3. Insert the IEEE 1394 Port into the connector.

4. Place the IEEE 1394 Port into the first slot of your system case.

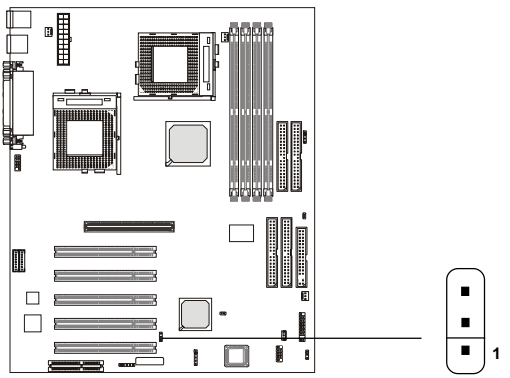


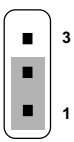
Jumpers

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

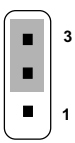
Clear CMOS Jumper: JBAT1

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. That battery has long life time for at least 5 years. 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

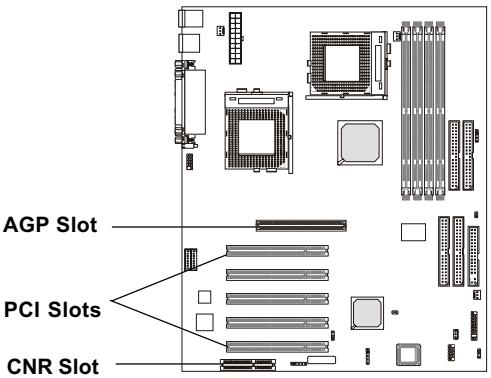


clear data

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.*

Slots

The motherboard provides five 32-bit Master PCI Bus Slots, one AGP 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) Slot

The CNR specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard 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" 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 B#	INT C#	INT D#	INT A#
PCI Slot 2	INT A#	INT B#	INT C#	INT D#
PCI Slot 3	INT B#	INT C#	INT D#	INT A#
PCI Slot 4	INT C#	INT D#	INT A#	INT B#
PCI Slot 5	INT D#	INT A#	INT B#	INT C#

AGP & PCI Slot 2 shared.
PCI Slot 1 & PCI Slot 3 shared.

PCI Slot 1~5: Bus Master

AWARD® BIOS Setup 3

The mainboard uses AWARD® 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.

This chapter provides you with the overview of the BIOS Setup program. It 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.

```
Hit DEL if you want to run SETUP
```

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.

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>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from Fail-Safe default table, only for Option Page Setup Menu
<F7>	Load Optimized defaults
<F10>	Save all the CMOS changes and exit

Getting Help

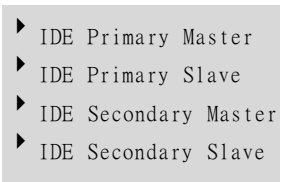
After entering the Setup utility, the first screen you see is the Main Menu.

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.

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields (as shown in the right view), that means a sub-menu containing additional options for the field can be launched from this field. To enter the sub-menu, highlight the field and press <Enter>. Then you can use control keys to move between and change the settings of the sub-menu. To return to the main menu, press <Esc>.

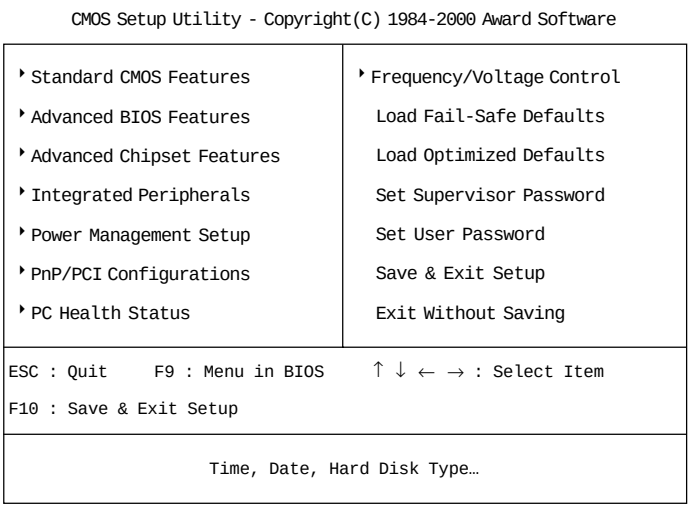


General Help <F1>

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.

The Main Menu

Once you enter AWARD® BIOS CMOS 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 Award® special enhanced features.

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

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

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.

PC Health Status
This entry displays the current status of your PC.

Frequency/Voltage Control
Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults
Use this menu to load the BIOS default values for the minimal/stable performance of your PC.

Load Optimized Defaults
Use this menu to load the default factory settings for BIOS for optimal system performance.

Supervisor Password
Use this menu to set Supervisor Password.

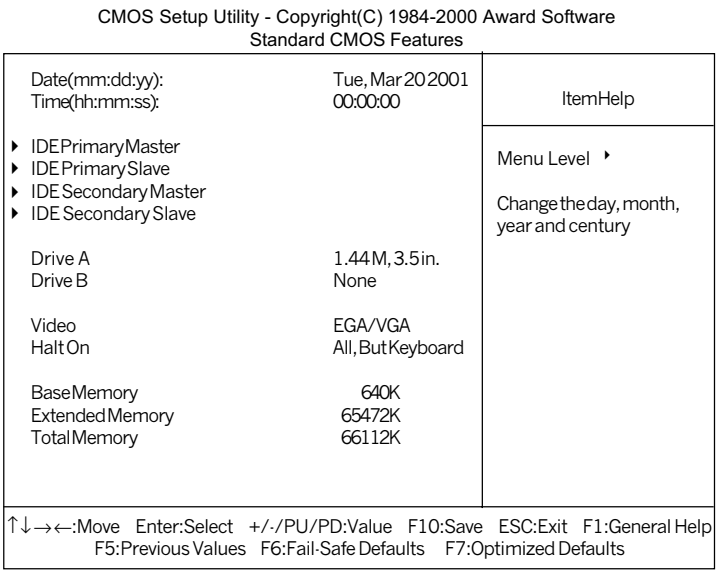
User Password
Use this menu to set User Password.

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 Features menu are divided into 13 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 depends on the year of the BIOS.

Time

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

IDE Primary Master/Primary Slave/Secondary Master/Secondary 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.

IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	
Access Mode	Auto	Menu Level ▸▸
Capacity	15021MB	To auto-detect the HDD's size, head...on this channel
Cylinder	291024	
Head	16	
Precomp	0	
Landing Zone	29103	
Sector	63	

Access Mode	The settings are Auto, CHS, LBA and Large.
Capacity	The formatted size of the storage device.
Cylinder	Number of cylinders.
Head	Number of heads.
Precomp	Write precompensation cylinder.
Landing Zone	Cylinder location of the landing zone.
Sector	Number of sectors.

Drive A/B
This item allows you to set the type of floppy drives installed. Available options are *None*, *360K, 5.25 in.*, *1.2M, 5.25 in.*, *720K*, 3.5 in., *1.44M, 3.5 in.*, *2.88M, 3.5 in.*. The default value for Floppy Drive A is *1.44M, 3.5 in*, and for Floppy Drive B is *None*.

Video
The item sets the type of video adapter used for the primary monitor of the system . Available options are *EGA/VGA* , *CGA 40*, *CGA 80* and *Mono*.

Default value is *EGA/VGA*.

Halt On
The item determines whether the system will stop if an error is detected at boot. Available options are:

All Errors	The system stops when any error is detected.
No Errors	The system doesn't stop for any detected error.
All, But Keyboard	The system doesn't stop for a keyboard error.
All, But Diskette	The system doesn't stop for a disk error.
All, But Disk/Key	The system doesn't stop for either a disk or a keyboard error.

Advanced BIOS Features

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Advanced BIOS Features

	Virus Warning	Disabled
	CPU Internal Cache	Enabled
	External Cache	Enabled
	CPU L2 Cache ECC Checking	Enabled
	Processor Number Feature	Enabled
	Quick Power On Self Test	Disabled
	ATA/100 & SCSI Boot Order	ATA, SCSI
	First Boot Device	Floppy
	Second Boot Device	HDD-0
	Third Boot Device	LS120
	Boot Other Device	Enabled
	Swap Floppy Drive	Disabled
	Boot Up Floppy Seek	Enabled
	Boot Up NumLock Status	On
	Gate A20 Option	Normal
	Typematic Rate Setting	Disabled
x	Typematic Rate(Chars/Sec)	6
x	Typematic Delay(Msec)	250
	Security Option	Setup
	MPS Version Control For OS	1.4
	OS Select For DRAM > 64MB	Non-OS2
	Video BIOS Shadow	Enabled
	C8000-CBFFF Shadow	Disabled
	CC000-CFFFF Shadow	Disabled
	D0000-D3FFF Shadow	Disabled
	D4000-D7FFF Shadow	Disabled
	D8000-DBFFF Shadow	Disabled
	DC000-DFFFF Shadow	Disabled

Item Help

Menu Level ▸

Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Virus Warning

The item is to set the Virus Warning feature for IDE Hard Disk boot sector protection. If the function is enabled and any attempt to write data into this area is made, BIOS will display a warning message on screen and beep. Settings are *Disabled* and *Enabled*. Default value is *Disabled*.

CPU Internal Cache

The item allows you to turn on or off CPU's internal (L1) cache. Settings are *Enabled* (default) and *Disabled*.

External Cache
This allows you to turn on or off L2 (Level 2) cache memory for CPU. Settings are *Enabled* (default) and *Disabled*.

Processor Number Feature
This option is for Pentium® III processor only. During *Enabled*, this will check the CPU Serial number. Disable this option if you don't want the system to know the serial number.

Quick Power On Self Test
The option speeds up Power On Self Test (POST) after you power on the computer. When setting the item to *Enabled*, BIOS will shorten or skip some check items during POST. Settings are *Enabled* and *Disabled*. Default value is *Disabled*.

ATA/100 & SCSI Boot Order
The field allows you to determine the boot priority of the attached SCSI card and Promise IDE RAID device when **First**, **Second** or **Third Boot Device** is set to *SCSI*. Settings are *ATA, SCSI* and *SCSI, ATA*. Default value is *ATA, SCSI*.

First/Second/Third Boot Device
The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system. The settings are:

HDD-0	The system will boot from the first HDD.
HDD-1	The system will boot from the second HDD.
HDD-2	The system will boot from the third HDD.
HDD-3	The system will boot from the fourth HDD.
Floppy	The system will boot from floppy drive.
ZIP100	The system will boot from ATAPI ZIP drive.
LS120	The system will boot from LS-120 drive.
SCSI	The system will boot from the SCSI.
LAN	The system will boot from the Network drive.
CDROM	The system will boot from the CD-ROM.
Disabled	Disable this sequence.

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

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

Boot Up Floppy Seek
Setting to *Enabled* will make BIOS seek floppy drive A: before booting the system. Settings are *Disabled* and *Enabled*. Default is *Enabled*.

Boot Up Numlock Status
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. Settings are *On* and *Off*. Default is *On*.

Gate A20 Option
This item is to set the Gate A20 status. A20 refers to the first 64KB of extended memory. When *Fast* is selected, the Gate A20 is controlled by Port92 or chipset specific method resulting in faster system performance. When *Normal* is selected, A20 is controlled by a keyboard controller or chipset hardware.

Typematic Rate Setting
This item is used to enable or disable the typematic rate setting including Typematic Rate & Typematic Delay.

Typematic Rate (Chars/Sec)
After Typematic Rate Setting is enabled, this item allows you to set the rate (characters/second) at which the keys are accelerated. Settings are *6*, *8*, *10*, *12*, *15*, *20*, *24* and *30*.

Typematic Delay (Msec)
This item allows you to select the delay between when the key was first pressed and when the acceleration begins. Setting options are *250*, *500*, *750* and *1000*.

Security Option
This specifies the type of BIOS password protection that is implemented. Setting options are described below:

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

MPS Version Control For OS
This field allows you to select which MPS (Multi-Processor Specification) version to be used for the operating system. The MPS is a specification by which PC manufacturers design Intel architecture systems with two or more processors. Most newer server operating systems support MPS 1.4, such as Noverll IntranetWare 4.1 or Microsoft Windows Server NT 4.0. To find out which version to use, consult the vendor of your operating system. Settings are *1.4* and *1.1*.

OS Select For DRAM > 64MB
This allows you to run the OS/2® operating system with DRAM larger than 64MB. When you choose the default value *Non-OS2*, you cannot run the OS/2® operating system with DRAM larger than 64MB. But it is possible if you choose *OS2*. Default value is *Non-OS2*.

Video BIOS Shadow
This items sets if the Video BIOS will be copied to RAM and increase video speed accordingly. Settings are *Enabled* (default) and *Disabled*.

C8000-CBFFF/CC000-CFFFF/D0000-D3FFF/D4000-D7FFF/D8000-DBFFF/DC000-DFFFF Shadow
These items specify whether the contents of the adapter ROM named in the items will be copied into RAM to improve the performance of ROM firmware for adapters. You need to know the address of each adapter ROM occupies to shadow (copy) it into the correct area of RAM. Settings are *Enabled* and *Disabled* (default).

Advanced Chipset Features

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Advanced Chipset Features

SDRAM Cycle Length	3	ItemHelp
DRAM Clock	HostCLK	
Memory Hole	Disabled	
P2C/C2PConcurrency	Enabled	Menu Level ▸
Fast R-W Turn Around	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
AGP Aperture Size	64M	
AGP-4X Mode	Enabled	
AGP Driving Control	Auto	
x AGP Driving Value	DA	
AGP Fast Write	Disabled	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
On Chip Sound	Auto	
OnChip Modem	Auto	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Enabled	
PCI Master 0 WS Write	Enabled	
PCI Delay Transaction	Enabled	
PCI#2 Access #1 Retry	Enabled	
AGP Master 1 WS Write	Disabled	
AGP Master 1 WS Read	Disabled	
Memory Parity/ECC Check	Disabled	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

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

SDRAM Cycle Length

The option controls the CAS latency, which determines the timing delay before SDRAM starts a read command after receiving it. Settings are *2* and *3* (clock cycles). *2* increases system performance while *3* provides more stable system performance.

DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency. Settings are:

Host CLK The DRAM clock will be equal to the Host clock.

HCLK-33M 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 100MHz.

HCLK+33M 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.

Memory Hole
In order to improve performance, certain space in memory can be reserved for ISA peripherals. This memory must be mapped into the memory space below 16MB. When this area is reserved, it cannot be cached. The settings are *15M-16M* and *Disabled* (default).

P2C/C2P Concurrency
This field enables or disables the PCI to CPU and CPU to PCI concurrency feature, which allows synchronous data transmission from PCI to CPU and vice versa. Selecting the default *Enabled* will increase system performance.

Fast R-W Turn Around
This is used to control the fast read/write turn around feature for DRAM timing. Settings are *Enabled* and *Disabled* (default). *Enabled* improves system performance while *Disabled* provides stability.

System BIOS Cacheable
System BIOS ROM at F0000h-FFFFFh is always copied to RAM for faster execution. Selecting *Enabled* allows the contents of F0000h RAM memory segment to be written to and read from cache memory, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are *Enabled* and *Disabled* (default).

Video RAM Cacheable
The field allows the caching of video memory, resulting in increased system performance. Settings are *Enabled* and *Disabled* (default).

AGP Aperture Size
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. Options are *4M*, *8M*, *16M*, *32M*, *64M*, *128M* and *256M*.

AGP-4X Mode
The item enables or disables the support for AGP 4X mode. Select *Enabled* if your AGP card supports AGP 4X.

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

AGP Driving Value
The item specifies the AGP driving force.

AGP Fast Write
The item enables or disables the AGP Fast Write feature. The Fast Write technology allows CPU to write directly into the graphics controller without passing anything through system memory and improves 4X speed accordingly. Select *Enabled* only when your card supports the feature.

OnChip USB
The item is used to enable or disable the USB ports. Settings are *Enabled* and *Disabled*. The default is *Enabled*.

USB Keyboard/Mouse Support
Set to *Enabled* if your need to use an USB keyboard/mouse in the operating system that does not support or have any USB driver installed, such as DOS and SCO Unix. Default is *Disabled*.

OnChip Sound
Auto allows the mainboard to detect whether an audio card is used. If an audio card is detected, the onboard AC'97 audio controller will be enabled; if not, the controller is disabled. Settings are *Auto* (default) and *Disabled*.

OnChip Modem
Auto allows the mainboard to detect whether a modem is used. If a modem is

detected, the onboard MC'97 modem 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 are *Auto* (default) and *Disabled*.

CPU to PCI Write Buffer
When *Enabled*, CPU can write up to four words of data into the PCI write buffer before the CPU must wait for PCI bus cycles to finish. When *Disabled*, the CPU must wait after each write cycle until the PCI bus signals that it is ready to receive more data.

PCI Dynamic Bursting
When *Enabled*, every write transaction goes to the write buffer. Then burstable transactions burst on the PCI bus and nonburstable transactions do not.

PCI Master 0 WS Write
When *Enabled*, writes to the PCI bus are executed with zero wait state. Default is *Enabled*.

PCI Delay Transaction
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. Default is *Enabled*.

PCI #2 Access #1 Retry
When *Disabled*, PCI#2 will not be disconnected until access finishes (default). When *Enabled*, PCI#2 will be disconnected if max retries are attempted without success. Default is *Enabled*.

AGP Master 1 WS Write
When *Enabled*, writes to the AGP bus are executed with one wait state inserted. Default is *Disabled*.

AGP Master 1 WS Read
When *Enabled*, one wait state is inserted in the AGP read cycle. Default is *Disabled*.

Memory Parity/ECC Check
Users can set the field to *Enabled* for memory checking if the type of DRAM installed in your system is Parity or ECC (Error-Correcting Code) DRAM. Default is *Disabled*.

Integrated Peripherals

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Integrated Peripherals

	OnChip IDE Channel0		Enabled	ItemHelp
	OnChip IDE Channel1		Enabled	
	IDE Prefetch Mode		Enabled	
	Primary Master	PIO	Auto	Menu Level ▸
	Primary Slave	PIO	Auto	
	Secondary Master	PIO	Auto	
	Secondary Slave	PIO	Auto	
	Primary Master	UDMA	Auto	
	Primary Slave	UDMA	Auto	
	Secondary Master	UDMA	Auto	
	Secondary Slave	UDMA	Auto	
	Init Display First		PCI Slot	
	IDE HDD Block Mode		Enabled	
	Onboard FDD Controller		Enabled	
	Onboard Serial Port 1		Auto	
	Onboard Serial Port 2		Auto	
	UART 2 Mode		Standard	
x	IR Function Duplex		Half	
x	TX, RX inverting enable		No, Yes	
	Onboard Parallel Port		378/IRQ7	
	Onboard Parallel Mode		Normal	
	ECP Mode Use DMA		3	
	Parallel Port EPP Type		EPP1.9	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

OnChip IDE Channel0/1
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Choose the default value *Enabled* to activate each channel separately.

IDE Prefetch Mode
The onboard IDE drive interface supports prefetching, for faster drive accesses. Set to *Disabled* if your primary and/or secondary add-in IDE interface does not support prefetching.

Primary/Secondary Master/Slave PIO
The four fields allow you to set a PIO (Programmed Input/Output) mode for each of the four IDE devices that the onboard IDE interface supports.

Modes 0~4 provide increased performance. In *Auto* mode, BIOS automatically determines the best mode for each IDE device.

Primary/Secondary Master/Slave UDMA
Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA, select *Auto* (default) to enable BIOS support.

Init Display First
This item specifies which VGA card is your primary graphics adapter. Available options are *PCI Slot* and *AGP*. Default value is *PCI Slot*.

IDE HDD Block Mode
This allows your hard disk controller to use the fast block mode to transfer data to and from the hard disk drive. Block mode is also called block transfer, multiple commands or multiple sector read/write. *Enabled* enables IDE controller to use block mode; *Disabled* allows the controller to use standard mode. Default is *Enabled*.

Onboard FDD Controller
This is to enable or disable the onboard Floppy controller. Set to *Enabled* if you have a floppy disk drive installed on the mainboard and want to use it.

Onboard Serial Port 1/2
The items specify the base I/O port addresses and IRQs for the onboard Serial Port 1 (COM A) and Serial Port 2 (COM B). Selecting *Auto* allows BIOS to automatically determine the correct base I/O port address. Available options are *Auto, 3F8/IRQ4*, *2F8/IRQ3*, *3E8/IRQ4*, *2E8/IRQ3* and *Disabled*. Default is *Auto*.

UART 2 Mode
The item allows you to specify the operation mode for serial port. Settings are:

Standard	RS-232C Serial Port
HPSIR	IrDA-compliant Serial Infrared Port

ASKIR Amplitude Shift Keyed Infrared Port

IR Function Duplex
This field specifies a duplex value for the IR device connected to COM Port. Full-Duplex mode permits simultaneous two-direction transmission. Half-Duplex mode permits transmission in one direction only at a time. Settings are *Half* and *Full*. The default is *Half* .

TX, RX inverting enable
This item allows you to enable the TX, RX inverting which depends on different H/W requirement. It is not recommended to change the default setting to avoid any error in your system. Settings are "*No, Yes*" (default), "*Yes, No*", "*Yes, Yes*" and "*No, No*."

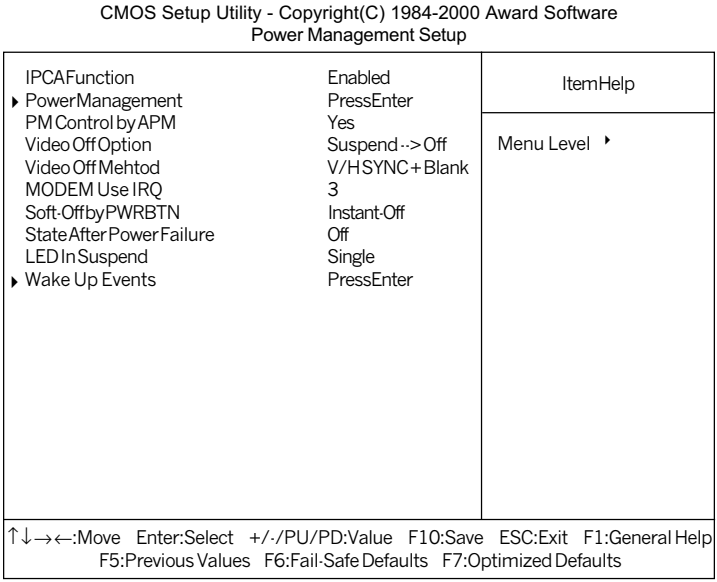
Onboard Parallel Port
This specifies the base I/O port address and IRQ for the onboard Parallel Port. Settings are *378/IRQ7*, *278/IRQ5*, *3BC/IRQ7* and *Disabled*. Default is *378/IRQ7*.

Onboard Parallel Mode
This item selects the operating mode for the parallel port: *Normal*, *EPP*, *ECP* or *ECP/EPP*. Default is *Normal*.

ECP Mode Use DMA
This item specifies a DMA channel 1 or 3 for the Parallel Port when it is set to *ECP* or *ECP/EPP* mode.

Parallel Port EPP Type
The item selects the EPP version used by the parallel port if the port is set to *EPP* or *ECP/EPP* mode. Settings are *EPP1.7* and *EPP1.9*.

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 *Enabled*. Settings are *Enabled* and *Disabled*. Default is *Enabled*.

Power Management

Press <Enter> to enter the sub-menu for power management options.

Power Management

PowerManagement	User Define	ItemHelp
HDD Power Down	Disable	
Doze Mode	Disable	Menu Level ▸ ▸
SuspendMode	Disable	

Power Management
This item is used to select the degree (or type) of power saving and is related to these modes: Doze Mode, Suspend Mode and HDD Power Down. There are three options for power management:

Min Saving	Minimum Power Management. Doze Mode = 1 hour, Suspend Mode = 1 hour, and HDD Power Down = Disable.
Max Saving	Maximum Power Management. Doze Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = Disable.
User Define	Allows end users to configure each mode separately. Each of the ranges are from *1 min.* to *1 hour* except for HDD Power Down which ranges from *1 min.* to *15 min*.

Default value is *User Define*.

HDD Power Down
If HDD activity is not detected for the length of time specified in this field, the hard disk drive will be powered down while all other devices remain active. Settings are *Disable* and *1* through *15* Min.

Doze Mode
If system activity is not detected for the length of time specified in this field, the CPU clock will run at slower speed while other devices still run at full

speed. Settings are *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

Suspend Mode
If system activity is not detected for the length of time specified in this field, all devices except CPU will be shut off. Settings are *Disable*, *1 Min*, *2 Min*, *4 Min*, *6 Min*, *8 Min*, *10 Min*, *20 Min*, *30 Min*, *40 Min* and *1 Hour*.

PM Control by APM
Setting to *Yes* will activate an Advanced Power Management (APM) device to enhance Max Saving mode and stop CPU internal clock. Settings are *Yes* and *No*. Default is *Yes*.

Video Off Option
This option is for choosing the setting in which the monitor will turn off.

Always On	Always turn on.
Suspend --> Off	During Suspend mode, the monitor will be turned off.
All Modes --> Off	The monitor is turned off during Doze, Standby or Suspend mode.

Video Off Method
This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS Support	Initial display power management signaling.

MODEM Use IRQ
Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. Settings are *3*, *4*, *5*, *7*, *9*, *10*, *11* and *NA*.

Soft-Off by PWRBTN

This feature allows users to configure the power button as a normal power-on/-off button or a soft-off button. Settings are:

Instant-Off	The power button functions as a normal power-on/-off button.
Delay 4 Sec.	Pressing the power button for more than 4 seconds forces the system to enter Soft-Off state.

Default is *Instant-Off*.

State After Power Failure

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

Off	Leaves the computer in the power off state.
On	Reboots the computer.
Auto	BIOS automatically determines the best mode.

LED In Suspend

This item sets how the system uses Power LED on the case to indicate the suspend state. Settings are:

Blink	The Power LED blinks to indicate the suspend state.
Single	The Power LED remains the same color.
Dual	The Power LED changes its color to indicate the suspend/sleep state.

Wake Up Events

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

Wake Up Events

	VGA	OFF	ItemHelp
	LPT & COM	LPT/COM	
	HDD & FDD	ON	
	PCIMaster	OFF	Menu Level ▸▸
	PowerOn by PCI Card	Disabled	
	Wake Up On LAN/Ring	Disabled	
	RTCAlarmResume	Disabled	
x	Date(ofMonth)	0	
x	ResumeTime(hh:mm:ss)	0 0 0	
	PrimaryINTR	ON	
▸	IRQsActivityMonitoring	PressEnter	

VGA, LPT & COM, HDD & FDD, PCI Master, PowerOn by PCI Card, Wake Up On LAN/Ring
These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

***Note**: To use the function of Wake Up On LAN/Ring, you need to install a LAN card/modem supporting power on function.*

RTC Alarm Resume
This is to enable or disable the feature of booting up the system on a scheduled time/date. Settings are *Enabled* and *Disabled* (default)

Date (of Month)
Specifies the date for **RTC Alarm Resume**. Settings are *0~31*.

Resume Time (hh:mm:ss)
Specifies the time for **RTC Alarm Resume**. Format is <hour><minute> <second>.

Primary INTR
When this is set to *On*, any event occuring will wake up the system which has been powered down.

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

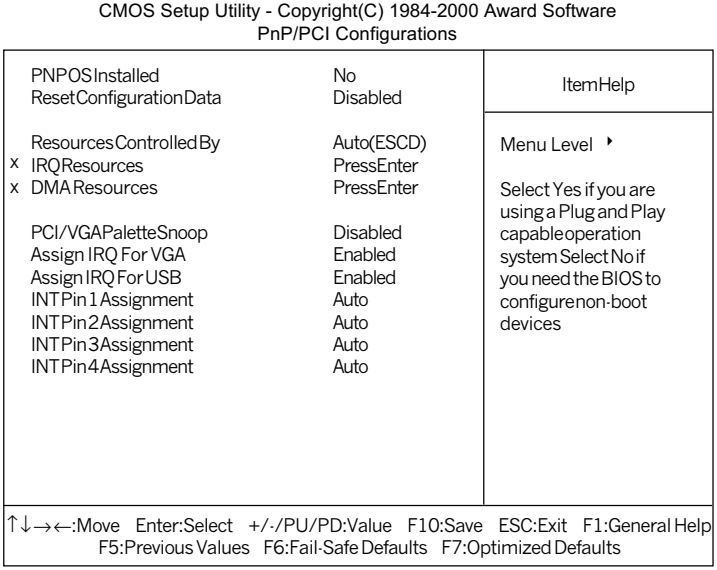
IRQs Activity Monitoring

		ItemHelp
IRQ3 (COM 2)	Enabled	
IRQ4 (COM 1)	Enabled	
IRQ5 (LPT 2)	Enabled	
IRQ6 (Floppy Disk)	Enabled	Menu Level ▸▸▸
IRQ7 (LPT 1)	Enabled	
IRQ8 (RTC Alarm)	Disabled	
IRQ9 (IRQ2 Redir)	Disabled	
IRQ10 (Reserved)	Disabled	
IRQ11 (Reserved)	Disabled	
IRQ12 (PS/2 Mouse)	Enabled	
IRQ13 (Coprocessor)	Enabled	
IRQ14 (Hard Disk)	Enabled	
IRQ15 (Reserved)	Disabled	

IRQ3~IRQ15
Enables or disables the monitoring of the specified IRQ line. If set to *Enabled*, the activity of the specified IRQ line will prevent the system from entering power saving modes or awaken it from power saving modes.

***Note**: IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals 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.*

PnP/PCI Configurations



PNP OS Installed
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® 95 or 98. When set to *NO*, BIOS will initialize all the PnP cards. So, select *Yes* if the operating system is Plug & Play aware.

Reset Configuration Data
The ESCD (Extended System Configuration Data) is a method that the BIOS uses to store resource information for both PNP and non PNP devices in a bit string format. When *Enabled*, the system will rebuild ESCD and you will see the message "ESCD Update Successfully" on boot up.

Resources Controlled By
If select *Auto(ESCD)*, BIOS will automatically configure all the boot and PnP (Plug & Play) compatible devices and assigns system resources like IRQ to these devices. However, this feature means absolutely nothing unless you

are using a Plug and Play operating system such as Windows®95/98. If you want to configure it by yourself, select *Manaul*. Default is *Auto(ESCD)*.

IRQ/DMA Resources
The items are adjustable only when **Resources Controlled By** is set to *Manual*. Press <Enter> and you will enter the sub-menu of the items. **IRQ Resources** & **DMA Resources** list IRQ 3/4/5/7/9/10/11/12/14/15 and DMA 0/1/3/5/6/7 for users to set each IRQ/DMA a type depending on the type of device using the IRQ/DMA. Settings are:

PCI/ISA PnP	For Plug & Play compatible devices designed for PCI or ISA bus architecture.
Legacy ISA	For devices compliant with the PC AT bus specification, requiring a specific interrupt.

PCI/VGA Palette Snoop
When set to *Enabled*, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). For example, if there are two VGA devices in the computer (one PCI and one ISA) and the:

VGA Palette Snoop Bit Setting	Action
Disabled	Data read or written by the CPU is only directed to the PCI VGA device's palette registers.
Enabled	Data read or written by the CPU is directed to both the PCI VGA device's palette registers and the ISA VGA device's palette registers, permitting the palette registers of both VGA devices to be identical.

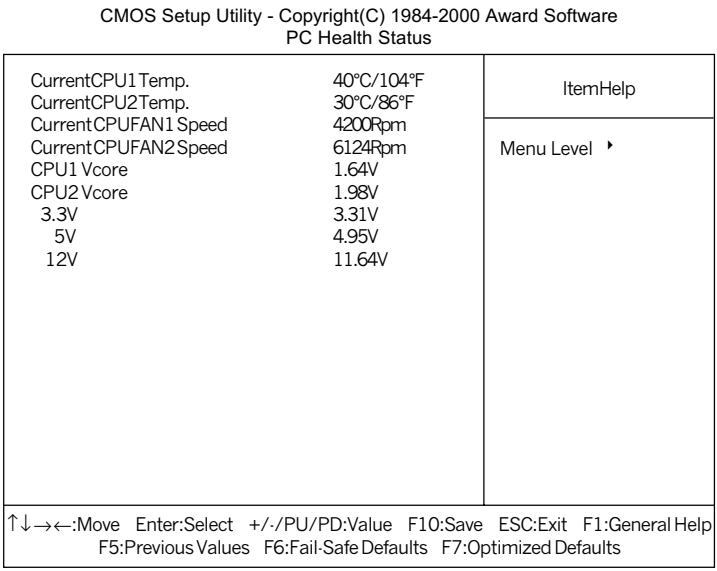
The setting must be set to *Enabled* if any ISA adapter card installed in the system requires VGA palette snooping. The Setup and BIOS default values are *Disabled*.

Assign IRQ For VGA/USB
Selecting *Enabled* allows BIOS to assign an IRQ to VGA card/USB device. Choose *Disabled* if you want to release the IRQ. Default is *Enabled*.

INT Pin 1/2/3/4 Assignment
The items let you assign the IRQ for PCI Routing Pin 1~4 independently. Selecting *Auto* allows BIOS to determine the best IRQ for each pin.

PC Health Status

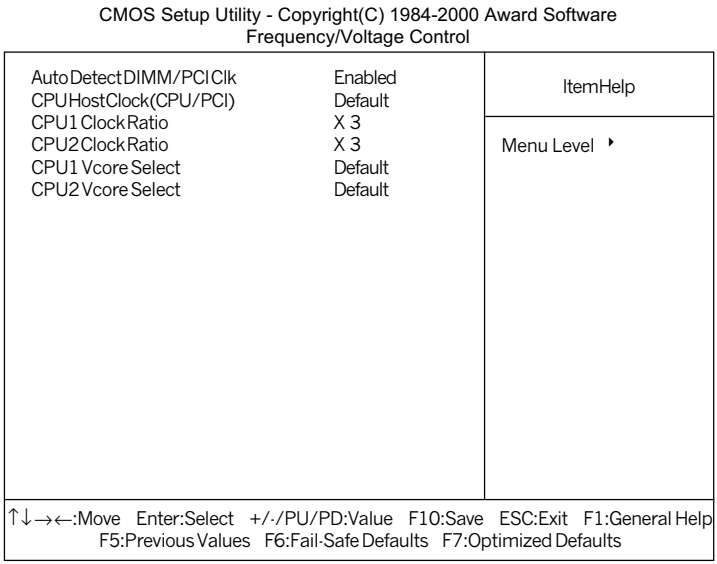
This section is to monitor the current hardware status including CPU temperature, CPU Fan speed, Vcore etc. This is available only if there is hardware monitoring onboard.



Current CPU1/2 Temp., Current CPUFAN1/CPUFAN2 Speed, CPU1/2 Vcore, 3.3/5/12V

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

Frequency/Voltage Control



Auto Detect DIMM/PCI Clk
Use this item to enable or disable the feature of auto detecting the clock frequency of the installed DRAM DIMMs and PCI bus. Settings are *Enabled* (default) and *Disabled*.

CPU Host Clock (CPU/PCI)
This item specifies the clock frequency of CPU host bus (FSB) and PCI bus and provides a method for end users to overclock the processor accordingly. If the item shows *Default*, the clock frequency will use the default value for both the CPU host bus and PCI bus.

CPU1/2 Clock Ratio
The items are used to select the CPU frequency multiplier (ratio) for CPU1/ CPU2 and provides a method for overclocking the processor(s). Settings are from *X 3* to *X 8*.

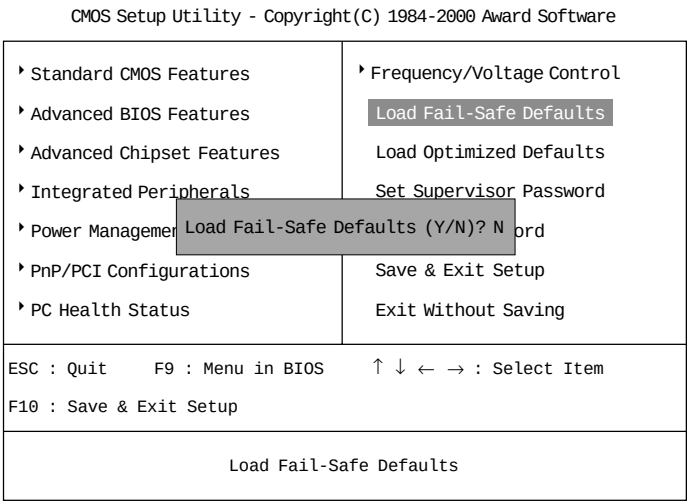
CPU1/2 Vcore Select

The items are used to select the CPU core voltage (Vcore) for CPU1/CPU2. Selecting Default allows CPU(s) to operate at the default Vcore voltage. Settings are *Default*, *+0.05V, +0.1V*, *+0.2V*, *+0.3V*, *+0.4V*, *-0.05V* and *-0.1V*.

Load Fail-Safe/Optimized Defaults

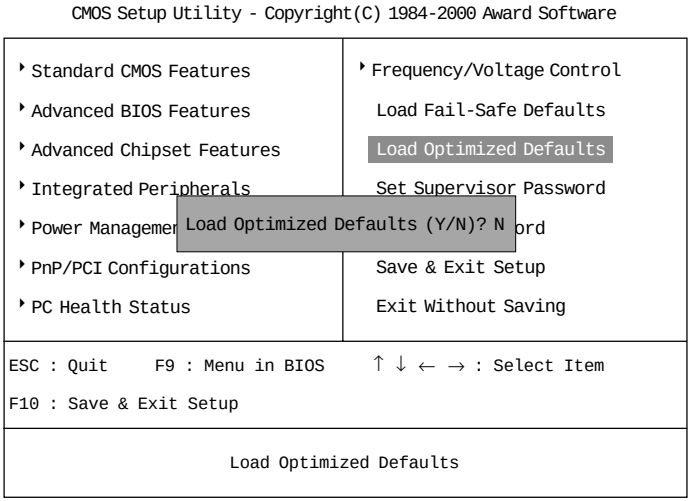
The two options on the main menu allow users to restore all of the BIOS settings to the default Fail-Safe or Optimized values. The Optimized Defaults are the default values set by the mainboard manufacturer specifically for the optimal performance of the mainboard. The Fail-Safe Defaults are the default values set by the BIOS vendor for the stable system performance.

When you select Load Fail-Safe Defaults, a message as below appears:



Pressing *Y* loads the BIOS default values for the most stable, minimal system performance.

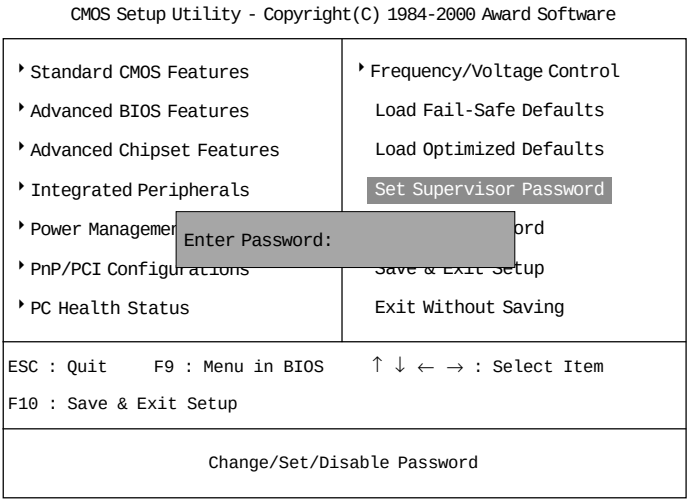
When you select Load Optimized Defaults, a message as below appears:



Pressing *Y* loads the default factory settings for optimal system performance.

Set Supervisor/User Password

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



Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously set password from CMOS memory. You will be prompted to confirm the password. Re-type 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.

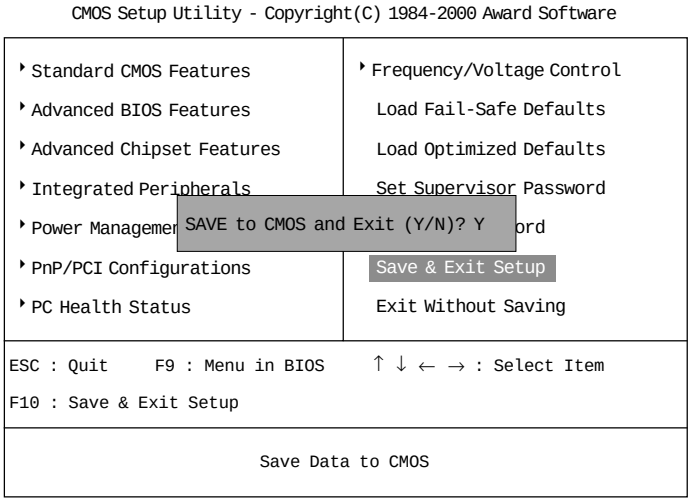
Additionally, when a password is enabled, you can also have BIOS to request a password each time the system is booted. This would prevent unauthorized

use of your computer. The setting to determine when the password prompt is required is the Security Option of the Advanced BIOS Features menu. If the Security Option is set to *System*, the password is required both at boot and at entry to Setup. If set to *Setup*, password prompt only occurs when trying to enter Setup.

About Supervisor Password & User Password:	
Supervisor password :	*Can enter and change the settings of the setup menus.*
User password:	*Can only enter but do not have the right to change the settings of the setup menus*

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:

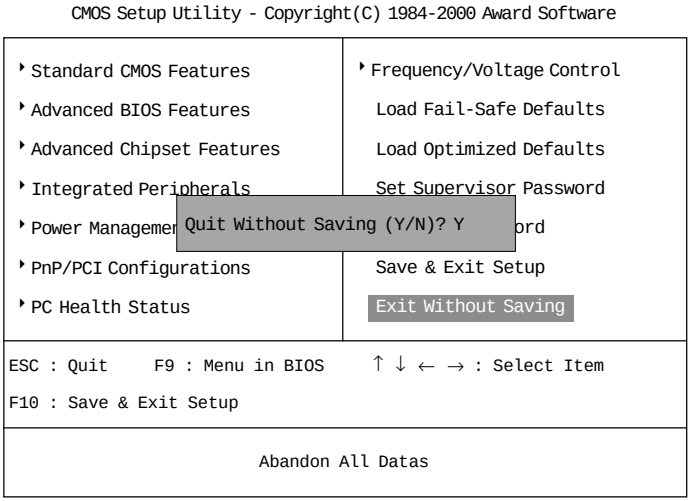


Typing *Y* will allow you to quit the Setup Utility and save the user setup changes to RTC CMOS.

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 VIA Chipset Driver 4

The chapter describes how to install drivers for VIA chipset, and the basic system requirements for driver installation.

This chapter contains the following topics:

Overview

The 694D Pro2 (MS-6321 v2.X) is paired with the VIA® Apollo Pro133A chipset. To enable the functions supported by Apollo Pro133A, you need to install the VIA chipset driver.

System Requirements

This section describes system requirements for the VIA driver installation and usage.

Computer	Intel® Pentium® !!! (FC-PGA/FC-PGA2) processor or higher
Monitor	VGA Support, minimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT3.51 or 4.0, or OS/2®, Windows® 2000, or Windows® ME
CD-ROM	Double Speed or higher
Chipset	VIA®VT82C694XDP/VT82C686B chipset

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 the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Next** and the screen will show four drivers: **VIA Atapi Vendor Support Driver**, **AGP VxD Driver**, **IRQ Routing Miniport Driver** and **VIA INF Driver 1.XX**. Select all four drivers and click on **Next**.
6. The setup program will request you to choose **Install VIA Atapi Vendor Support Driver**. Select **Install** and click **Next** to continue.
7. Select **Click to enable DMA Mode** and click **Next** to continue.
8. The setup program will request you to choose **Install VIA AGP VxD in turbo mode**, **Install VIA AGP VxD in normal mode** or **Uninstall VIA AGP VxD**. Select **Install VIA AGP VxD in turbo mode** and click on **Next**.
9. Select **Install VIA IRQ Routing Miniport Driver** and click on **Next**.
10. The setup program will request you to choose whether to restart the computer or not. Please select "Yes, I want to restart my computer now" and click **Finish**. The computer will restart and complete the VIA Chipset Drivers installation.

Driver Installation for Windows® 2000

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 the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Yes** and the screen will show three drivers: **VIA Bus Master Ultra ATA Driver (Windows 2000)**, **AGP VxD Driver** and **VIA INF Driver 1.XX**. Select all and click **Next** to proceed.
6. The screen will show a **VIA Bus Master Ultra ATA Driver** dialog box. Select **Install** and then click on **Next**.
7. The screen will show a **VIA GART AGP Driver 4.XX** dialog box. Select **Install AGP 4X/133 driver** and click **Next**.
8. There is a **Read Only File Detected** dialog box. Click **Yes**. A dialog box **Digital Signature Not Found** will appear and ask "Do you want to continue the installation of the VIA Bus Master Ultra ATA Controller". Click **Yes** to continue.
9. Select **Yes** and then click **Finish** to restart the system.
10. After restart, the system will find a new hardware device and the **Found New Hardware Wizard** dialog box will appear. Click **Next** to the next screen and a **VIA BM Ultra DMA Channel** device will be found.
11. Click **Next** and the driver search result will be shown on the screen. Click **Next**.
12. A dialog box **Digital Signature Not Found** will appear. Click **Yes**.
13. Click **Finish** and then click **Yes** to restart the system.
14. Repeat **Step 10 through Step 13** again.
15. After restart, the VIA Chipset driver installation will be complete.

One Touch Setup:

In Windows® 2000, you probably will see the ***One Touch Setup*** *button appear on the setup screen. Choosing the button will help you install more than one driver into the system without going through the installation process step by step and save a lot of time. After clicking on One Touch Setup, a window will show up listing 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** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show a **VIA Service Pack 1 README** dialog box.
5. Click **Yes** and the screen will show two drivers: **AGP VxD Driver** and **VIA INF Driver 1.XX**. Select all and click **Next** to proceed.
6. The screen will show a **VIA_GART AGP Driver 4.XX** dialog box. Select **Install VIA AGP VxD in Turbo mode** and click **Next**.
7. The setup program will request you to choose whether to restart the computer or not. Please select "Yes, I want to restart my computer now" and click **Finish**. The computer will restart and finish the VIA Chipset Drivers installation.

One Touch Setup:

*In Windows® ME, you probably will see the **One Touch Setup** button appear on the setup screen. Choosing the button will help you install more than one driver into the system without going through the installation process step by step and save a lot of time. After clicking on One Touch Setup, a window will show up listing 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 installing 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** and the screen will show **VIA Service Pack 4.XX**.
4. Click **Next** and the screen will show the **VIA Service Pack 1 README** dialog box.
5. Click **Yes** to proceed and then select **Install** to enable (Ultra) DMA for IDE Driver.
6. The **Choose Destination Location** dialog box appears. Click **Next**.
7. The **Select Program Folder** dialog box appears. Click **Next**.
8. Click on "Yes, I want to restart my computer" and then click **Finish** to restart your computer and complete installation.

USB PC to PC Networking Function

A

USB PC to PC is the best solution for providing the easiest network connection service to you. By connecting multiple PCs through USB PC to PC port, you can build up a local area network without any network adapter. We give this Ethernet emulation environment a name — USB PC to PC. USB PC to PC supports TCP/IP, NetBEUI and IPX protocols. These features make your PCs able to share their resources such as files or printers to each other. Furthermore, USB PC to PC also gives you the ability of connecting to your existing Home or Office LAN for network resource or Internet sharing.

The section includes the following topics:

Installing GeneLink™ LAN Driver

Before you use the function, you need to install the GeneLink™ LAN Driver to all PCs connected via USB PC to PC cables.

Step 1. Installing driver

1. Insert the driver CD and click "USB PC to PC" button to install the driver.
2. The welcome dialog box appears and click Next > button.
3. Choose the destination folder and click Next > button.
4. Select components that you want to install and then click Next > button. (GeneLink™ LAN Driver is used only for those PCs connected via USB PC to PC port so that resources are shared between these PCs; GeneLink™ Software Router allows your PC to connect to another existing Home/Office LAN for network resource or Internet sharing.)
5. The Setup Program will install all necessary components automatically.
6. Setup completes. Then select 'Yes, I want to restart my computer now' and click "FInish" button to reboot your computer for updating your driver configuration.

After you complete the installation procedures, you'll find Setup Program has installed GeneLink™ network driver in your computer. It binds TCP/IP, NetBEUI and IPX protocols to GeneLink™ device.

Step 2 – Connect your PCs via the USB PC to PC cable

Step 3 - Network Login

When you restart your computer, you will be prompted for a user name and password to login your network. Please enter an unique name for your PC.

Step 4 – Sharing your resources and Connecting to Internet

You need to manually share your resources (files, folders, drives and printers) to make them accessible for other computers. For Internet accessing, you must define which computer (That has already been connected to Internet) should install GeneLink™ Software Router. And all clients accessing Internet resources through GeneLink™ USB port should have installed GeneLink™ LAN driver.

Notice:

1. *You should use the same network protocol (TCP/IP, NetBEUI or IPX) for connecting GeneLink™ LAN to existing Home/Office LAN.*
2. *If you've already configured your [IPX/SPX] and [Client for Netware Networks] before installing GeneLink™ driver, we strongly recommend that you should also install* ***Software Router*** *while installing GeneLink™ driver into your system.*

Using USB PC to PC Networking Function

How to share your files, folders, drives and printers

a. Go to the file, folder, drive or printer that you want to share.
b. Right click your mouse pointer on the resource you want to share, you'll see a POP-UP Menu.

c. Select " Sharing" and you'll see another POP-UP Menu.

d. In "Sharing" tag, select "Share As".
e. Enter a name to help others recognize your sharing file or device (optional).
f. Select "Access Type". If you select " Depend on Password", your need to assign an access password for this device.
g. Click "OK" button.

How to check if you have already shared your resources

Go to the resource and check if Windows had added a hand on its icon or not. If yes, it means you've successfully shared your resource and others can access it through USB PC to PC; if not, you need to repeat the steps described in "**How to share your files, folders, drives and printers"** to complete your sharing processes.

Connecting to your existing Home or Office LAN

To connect your USB PC to PC to another existing Home of Office LAN via USB PC to PC port, you need to install **GeneLink™ Software Router** in addition to GeneLink™ LAN driver. GeneLink™ Software Router is responsible for handling all network packets between USB PC to PC and your Home/Office LAN. So only the computer that is physically connected to both LANs needs to install GeneLink™ Software Router (i.e., this computer should install both GeneLink™ LAN and one network adapter for Home/Office LAN). For those computers on USB PC to PC, you only need to follow installation procedures on the manual to install GeneLink™ LAN driver. The following procedures will show you how to install drivers to the computer that will link both PC and your existing Home/Office LAN:

Notice: If you want to connect your GeneLink™ LAN to your existing Home/Office LAN, you should use the same protocol for the two LANs. For example, if your Home/Office LAN uses TCP/IP protocol, you should also use TCP/IP protocol for your GeneLink™ LAN. Otherwise, these two LANs cannot communicate to each other. The Setup Program installs TCP/IP, NetBEUI and IPX protocols for GeneLink™ LAN by default. If your Home/Office LAN uses other protocol, please install the same protocol for those computers within GeneLink™ LAN.

Connecting to Internet through USB PC to PC & Office/Home LAN

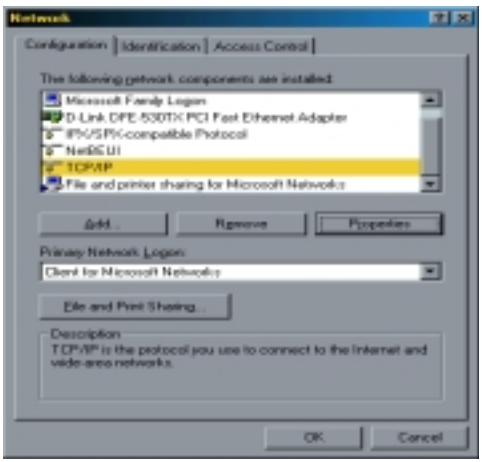
If you would like to access Internet resources through USB PC to PC, here are some things you should notice:

a. You must define which computer should install GeneLink™ Software Router.
b. The computer which has installed GeneLink™ Software Router should have already been connected to internet.
c. All clients which would like to access Internet resources through USB cable should have installed GeneLink™ driver.

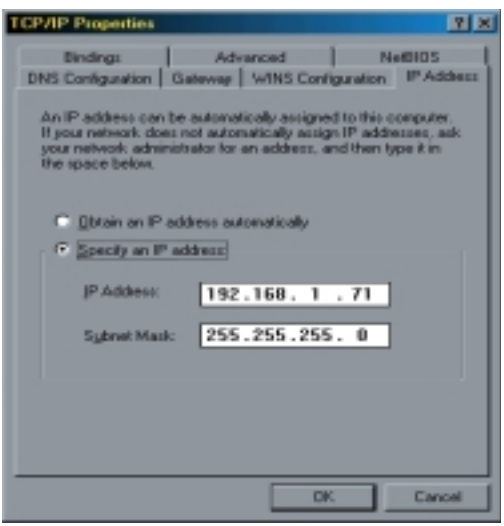
Now we need to make some network configurations on the Desktop/ Notebook which connect to GeneLink™ Software Router to make your Internet access possible (maybe you need to consult you Network Administrator for doing that):

a. If your existing home/office network is NOT using DHCP to assign client's IP address, your need to:
- Move your mouse pointer on Network Neighborhood icon and right click on it. You'll see a pop-up menu.

- Click on “Properties”, you’ll see another menu.



- Choose TCP/IP in Configuration tag, and then press “Properties” button. You’ll see “TCP/IP Properties” menu.



- Now you need to navigate between “IP Address”, “Gateway”, and “DNS Configuration” tags to specify “IP Address”, “Subnet Mask”, “Gateway” and “DNS Server”. If you don’t know their values, pleases consult your Network Administrator.

- Press “OK” button to go back to “Network” pop-up menu. Choose “Identification” tag. Specify an unique name for your computer if it doesn’t have and fill in the name of your workgroup. If you are not sure what’s the name of your computer or Workgroup, please consult your Network Administrator.

- Press “OK” to complete your network configuration. Restart your computer and you’ll be ready to connect to Internet.

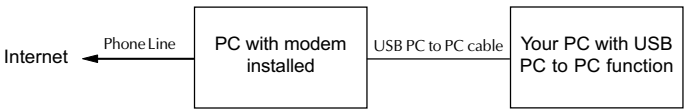
b. If your existing HOME/OFFICE network is using DHCP to assign client’s IP address, your Network Sever will configure your network configuration automatically. So you can skip those procedures described in the previous session.

SPECIAL NOTICE for those users who have already installed Network Adapter in their system:

If you've already configured your [IPX/SPX] and [Client for Netware Networks] before installing GeneLink™ driver, we strongly recommend that you should also install ***Software Router*** when you install GeneLink™ driver into your system. If you decide not to install ***Software Router***, then the OS will not allow two IPX/SPX configurations co-exist in the same system. This will cause GeneLink™ Driver Install Program overwrite your original IPX/SPX configuration and make your original network configuration malfunction.

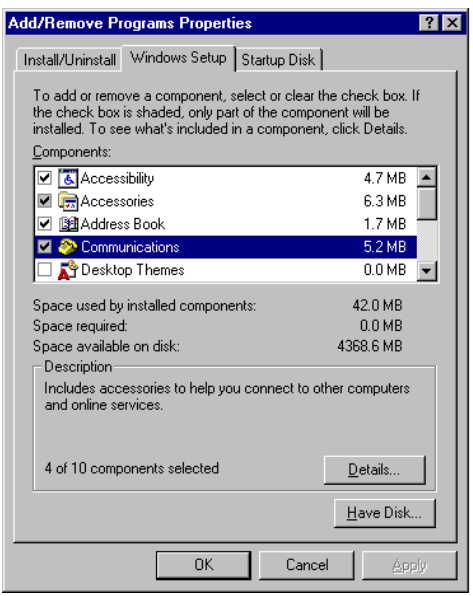
Connecting to internet through USB PC to PC & another PC with modem

If there is no existing Office/Home LAN and your computer does not have a modem, you still can connect USB PC to PC to internet through another computer with a modem installed. **The function is available in Windows® 98SE and ME.**



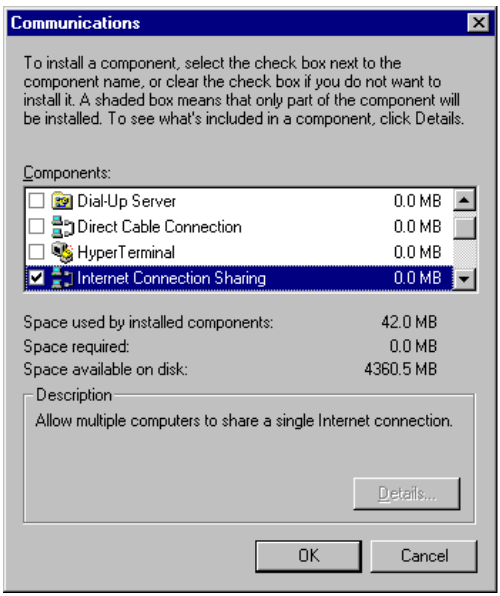
To access internet through another computer with modem, you need to setup "Internet Connection Sharing" on all computers connected via USB PC to PC cables. Instructions are as follows:

a. Go to "Control Panel".
b. Double click "Add/Remove Programs" and the "Add/Remove Programs Properties" window appears.
c. Select "Windows Setup" tag and double click



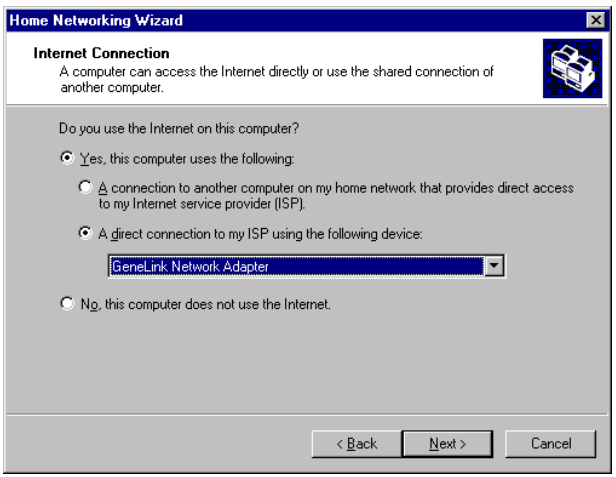
"Communications". The "Communications" window appears.

d. Check "Internet Connection Sharing" and click "OK".



e. The "Home Networking Wizard" starts. Click "Next".

f. Click “Adirect connection to my ISP using the following device”, and select “GeneLink Network Adapter” from the pull-down menu. Click “Next”.



Note: For the computer with a modem installed, you need to select “**My Connection**” instead of “GeneLink Network Adapter” on the step, and after finishing installation of “My Connection”, select “GeneLink Network Adapter” when the

above window returns.

g. Continue to click “Next”.

h. Click “Finish.”

i. Restart the computer.

Note: In Windows® 98SE, you can access internet through the shared connection of another computer, but it is unable for you to control the remote modem. However, in *Windows® ME*, you are allowed to dial the remote modem of another computer using the dialing program built in Windows® ME.