Chapter 1

Introduction

The K7T Pro 2 ATX VA mainboard is a high-performance computer mainboard based on VIA® KT133 chipset. The K7T Pro 2 is designed for the AMD® Socket processor for inexpensive business/personal desktop markets.

The KT133 chipset consists of the VT8363 system controller (552 pin BGA) and the VT82C686A PCI to ISA bridge (352 pin BGA). The system controller provides superior performance between the CPU, DRAM, AGP bus, and PCI bus with pipelined burst, and concurrent operation.

The VT8363 supports six banks of DRAM's up to 1.5 GB and full AGP v2.0 capability for maximum bus utilization including 1x, 2x and 4x mode transfers, SBA (SideBand Addressing), Flush/Fence commands, and pipelined burst. The chip also supports enhanced PCI bus commands such as Memory-Read-Line, Memory-Read-Multiple and Memory-Write-Invalid commands to minimize snoop overhead.

The VT82C686A integrates all system control functions such as ACPI (Advanced Configuration and Power Interface). The ACPI provides more Energy Saving Features for the OSPM (OS Direct Power Management) function. The VT82C686A chipset also improves the IDE transfer rate by supporting Ultra DMA-33/66 IDE that transfers data at the rate 33/66MB/sec.

This mainboard which supports KT133 chipset coupled with VT8363 and VT82C686A is ideal for high performance, high quality, high energy efficiency and high integration desktop AGP/PCI/ISA computer systems.

Mainboard Features

CPU

- Socket A for AMD® PGA Duron/Athlon processor.
- Support 500MHz, 550MHz, 600MHz, 650MHz to 1.2GHz.

Chipset

- VIA® KT133
  - FSB @200MHz
  - AGP 4x and PCI Advanced high performance memory controller
  - Support PC100/133 SDRAM,
- VIA® VT686A chipset (352 BGA)
  - Enhanced Power Management Features
  - Integrated Super I/O (FDC, LPT, COM 1/2, and IR)
  - Dual bus Master IDE Ultra DMA33/66
  - Integrated Hardware Soundblaster
  - Direct Sound AC97 Audio
  - ACPI

Clock Generator

- 100Mhz clocks are supported (200MHz Internal System Bus)

Main Memory

- Support six memory banks using three 168-pin unbuffered DIMM.
- Support a maximum memory size of 1.5GB (32M x 8).
- Support 3.3v SDRAM DIMM.

Slots

- One AGP (Accelerated Graphics Port) slot.
  - AGP specification compliant
  - Support AGP 2.0 1x/2x/4x
- One CNR (Communication Network Riser) slot.
- Six 32-bit Master PCI bus slots (standard)
  (Five 32-bit Master PCI bus slots and 1 PCI/ISA slot -- option only)
- Supports 3.3v/5v PCI bus Interface.

On-BoardIDE

- An IDE controller on the VIA® VT686A Chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66 operation modes.
- Can connect up to four IDE devices.

On-Board Peripherals

- On-Board Peripherals include:
  - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 2 serial ports (COMA + COM B) or 1 serial port with 1 VGA port
  - 1 parallel port supports SPP/EPP/ECP mode
  - 4 USB ports (2 Rear Connectors/USB Front Pin Header)
  - 1 IrDA connector for SIR/ASKIR/HPSIR.
  - 1 Audio/Game port

Audio

- Chip Integrated
  - Direct Sound AC97 Audio

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.

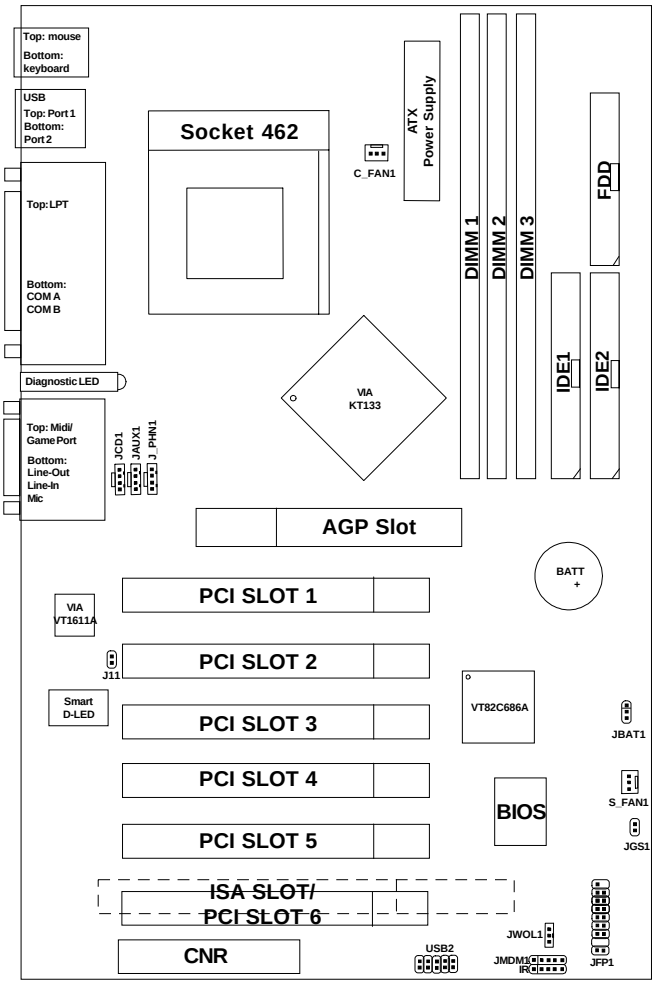
Dimension

- ATX Form Factor: 30.4cm x 20.3cm

Mounting

- 6 mounting holes.

Mainboard Layout



K7T Pro 2 ATX VA Mainboard

Chapter 2

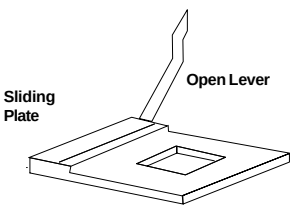
HARDWARE INSTALLATION

Central Processing Unit: CPU

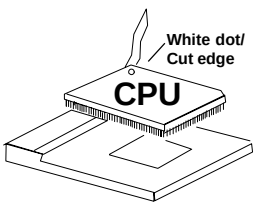
The mainboard operates with **AMD® Duron™/Athlon processor.** The mainboard uses a CPU socket called Socket 462 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

- **CPU Installation Procedures**

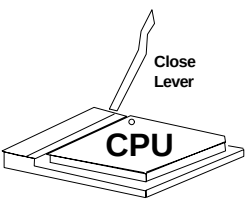
1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.



2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge. Then, insert the CPU. It should insert easily.



3. Press the lever down to complete the installation.



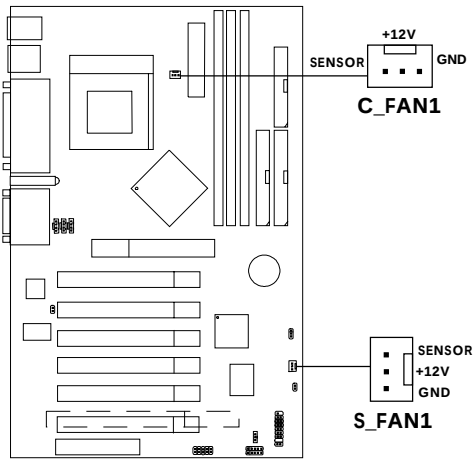
- **CPU Core Speed Derivation Procedure**

The mainboard CPU Bus Frequency can be set through BIOS setup.

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

- **Fan Power Connectors: C_FAN1/S_FAN1**

These connectors support system cooling fan with + 12V. It supports three pin head connector. When connecting the wire to the connector, 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 your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.



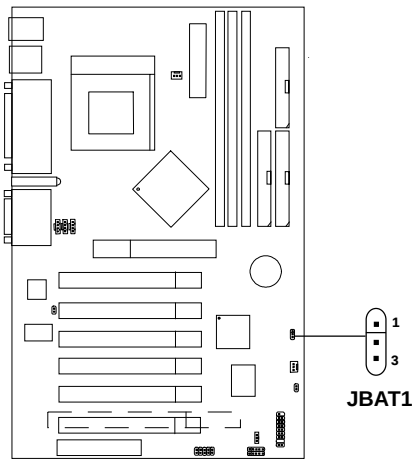
C_FAN1: Processor Fan
S_FAN1: System Fan

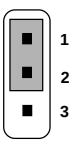
For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

Note: Always consult your reseller for proper CPU cooling fan.

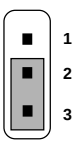
Clear CMOS Jumper: JBAT1

A battery must be used to retain the mainboard configuration in CMOS RAM. Short 1-2 pins of JBAT1 to store the CMOS data.





Keep Data



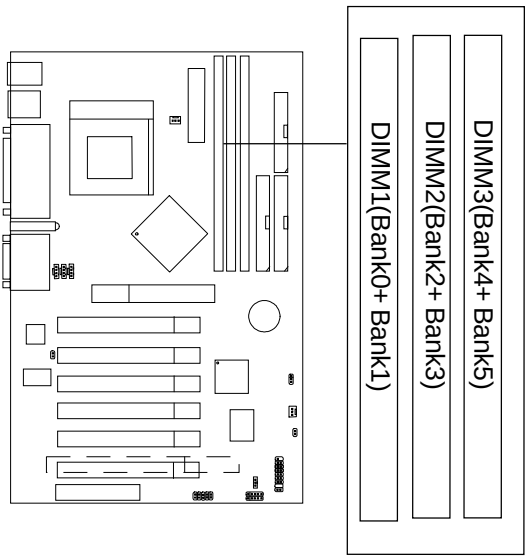
Clear Data

Note: 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. Always unplug the power cord from the wall socket.

Memory Installation

• Memory Bank Configuration

The mainboard supports a maximum memory size of 1.5 GB. It provides three 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets. It supports 8 MB to 512 Mbytes DIMM memory module.

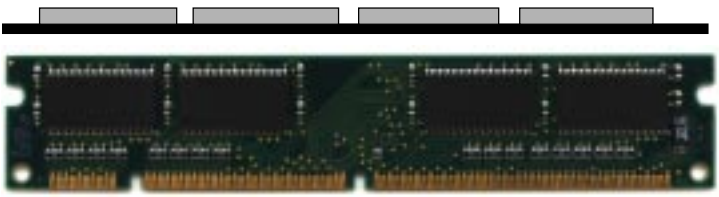


WARNING!

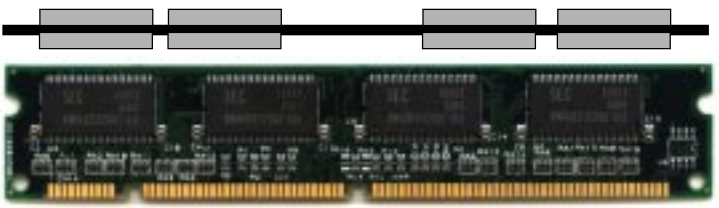
There are three kinds of DIMM specification supported by this mainboard: PC133, PC100 and PC66. If you use 66MHz CPU Bus Frequency, these three DIMM Specs. is supported. If you use 100 MHz CPU Bus Frequency, PC100 and PC133 DIMM Specs. is supported. If you use 133MHz CPU Bus Frequency, only PC133 DIMM Specs. will be supported

- **Memory Installation Procedures**

A. How to install a DIMM Module



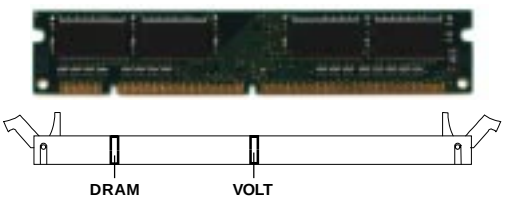
Single Sided DIMM



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 clip at the side of the DIMM slot will automatically close.

• Memory Population Rules

1. Supports only SDRAM DIMM.

2. To operate properly, at least one 168-pin DIMM module must be installed.

3. This mainboard supports Table Free memory, so memory can be installed on DIMM 1 or DIMM 2 or DIMM 3 in any order.

4. Supports 3.3 volt DIMM.

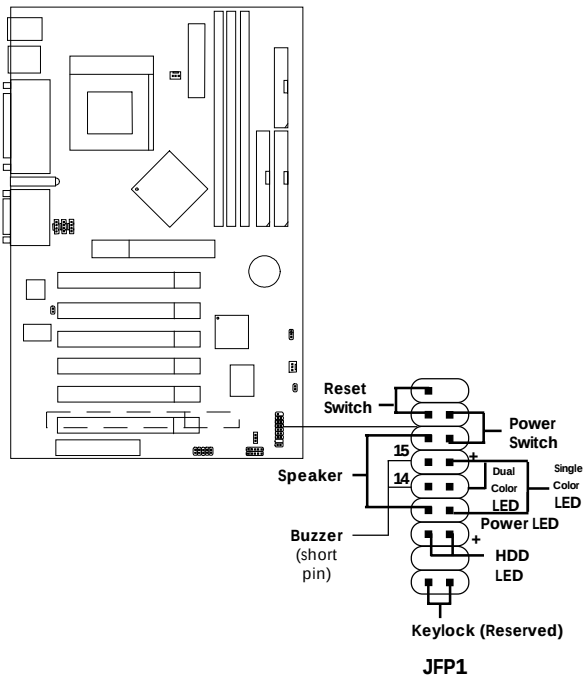
5. The DRAM addressing and the size supported by the mainboard is shown below:

SDRAM Memory Addressing

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
256M	32Mx8	ASYM	14	9	256MB	512MB

Case Connector: JFP1

The Keylock (reserved), Power Switch, Reset Switch, Power LED, Speaker, and HDD LED are all connected to the JFP1 connector block.



Power Switch
Connect to a 2-pin push button switch.

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

Power LED
The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin. There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED (ACPI request).

a. 3 pin single color LED connect to pin 4, 5, & 6. This LED will lit when the system is on.

b. 2 pin dual color LED connect to pin 5 & 6.

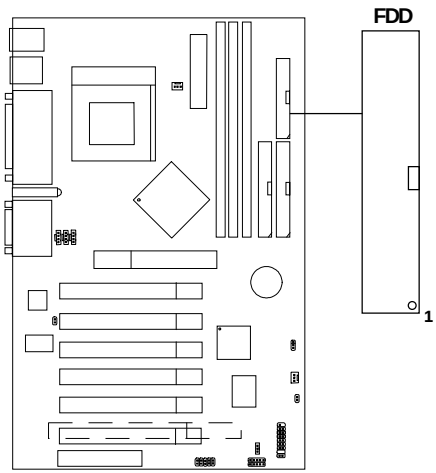
GREEN Color:	Indicate the system is in full on mode.
ORANGE Color:	Indicate the system is in suspend mode.

Speaker
Speaker from the system case is connected to this pin.

HDD LED
HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

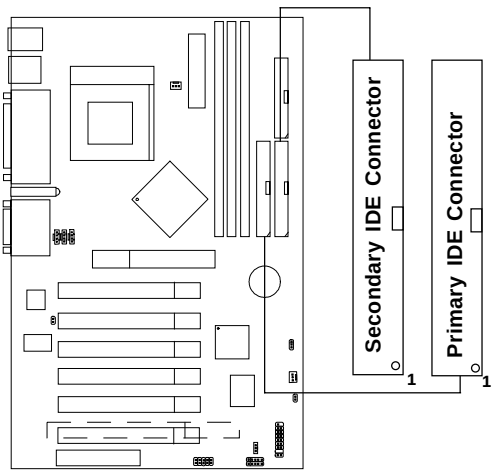
Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector FDD which supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.



Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA/66 Controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66 function. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives and CD-ROM to IDE1 and IDE2. These connectors support the provided IDE hard disk cable.



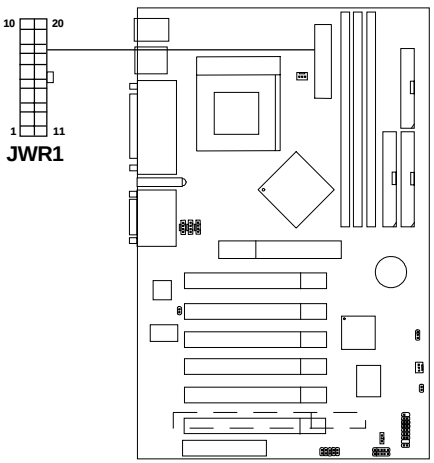
IDE1 (Primary IDE Connector)
The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)
IDE2 can also connect a Master and a Slave drive.

Power Supply

• ATX 20-pin Power Connector: JWR1

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported by this mainboard. This power connector supports instant power on function which means that system will boot up instantly when the power connector is inserted on the board.



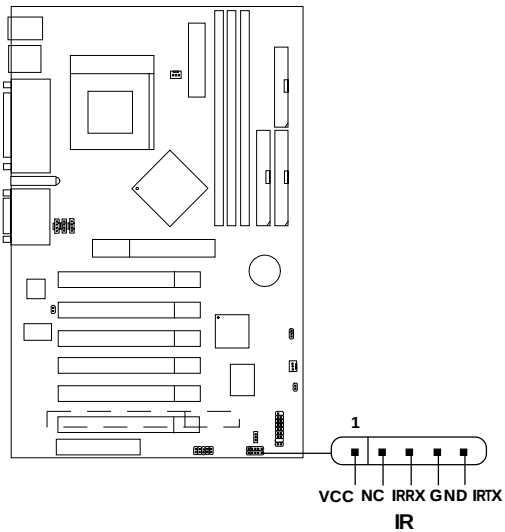
PIN DEFINITION

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

Warning: Since the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power connector to ensure that no damage will be done.

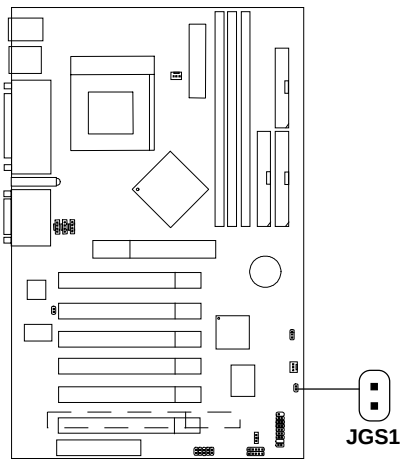
IrDA Infrared Module Connector: IR

The mainboard provides one infrared (IR) connector for IR modules. This connector is for optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



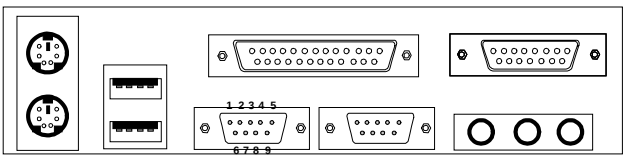
Power Saving Switch Connector: JGS1

Attach a power saving switch to **JGS1**. When the switch is pressed the system immediately goes into suspend mode. Press any key and the system wakes up.



Serial Port Connectors: COM A and COM B

The mainboard provides two 9-pin male DIN connectors for serial port COM A & COM B. These port are 16550A high speed communication port that send/receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly into this connector.



Serial Port (9-pin Male)

PIN DEFINITION

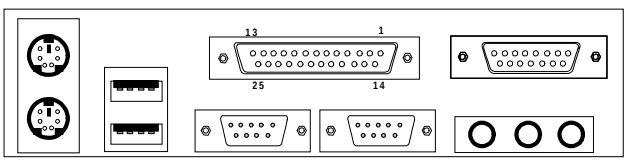
PIN	SIGNAL
1	**DCD** (Data Carry Detect)
2	**SIN** (Serial In or Receive Data)
3	**SOUT** (Serial Out or Transmit Data)
4	**DTR** (Data Terminal Ready)
5	**GND**
6	**DSR** (Data Set Ready)
7	**RTS** (Request To Send)
8	**CTS** (Clear To Send)
9	**RI** (Ring Indicate)

Parallel Port Connector: LPT1

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended capabilities Parallel Port (ECP). See connector and pin definition below:

Parallel Port (25-pin Female)

LPT 1

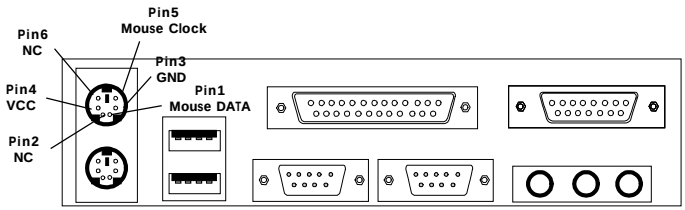


PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	STROBE	14	AUTO FEED#
2	DATA0	15	ERR#
3	DATA1	16	INIT#
4	DATA2	17	SLIN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

Mouse Connector: JKBMS1

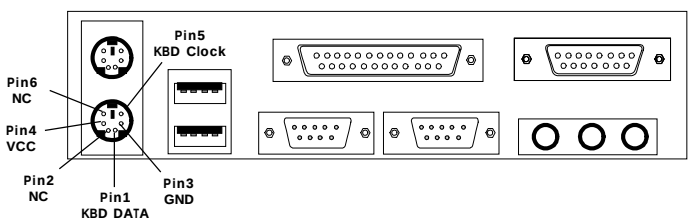
The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin definition are shown below:



PS/2 Mouse (6-pin Female)

Keyboard Connector: JKBMS1

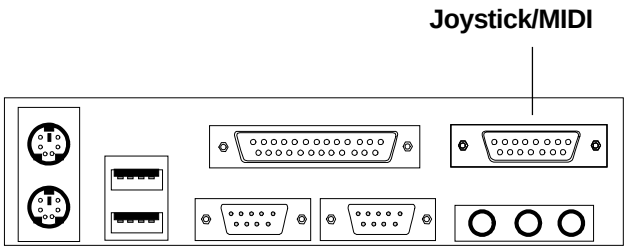
The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.



PS/2 Keyboard (6-pin Female)

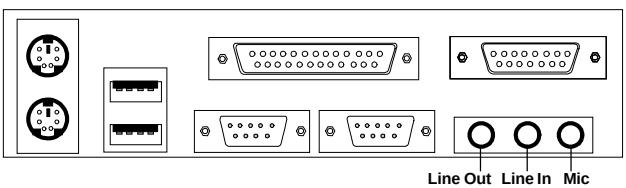
Joystick/Midi Connectors

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



Audio Port Connectors

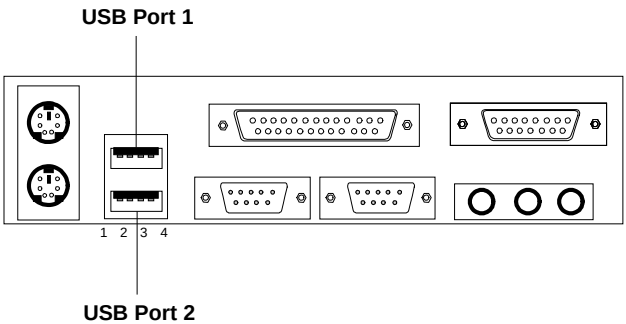
Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for the microphones.



1/8" Stereo Audio Connectors

USB Connectors

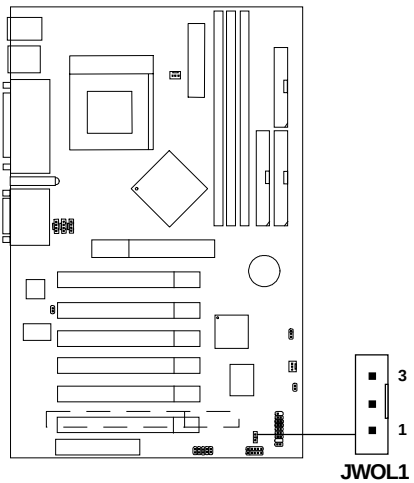
The mainboard provides a **UHCI (Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.



PIN	SIGNAL
1	VCC
2	-Data
3	+Data
4	GND

Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is use for LAN add-on cards that supports Wake Up on LAN function. To use this function, set the "Wake Up on LAN/Ring" to enable located at the BIOS Power Management Setup.



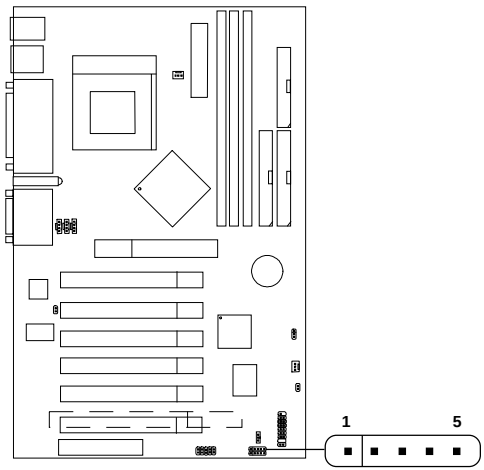
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active "high".

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

Modem Wake Up Connector: JMDM1

The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function. To use this function, you need to set the "Modem Wake Up/Ring" to enable located at the BIOS Power Management Setup.



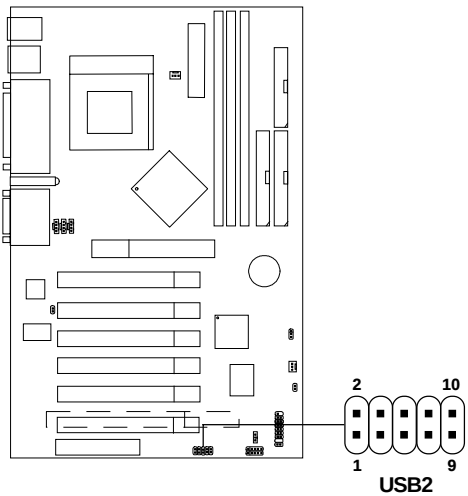
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

Note: Modem wake-up signal is active "low".

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

USB Front Connector: USB2

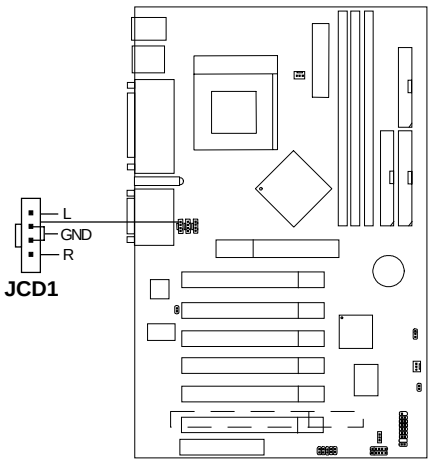
The mainboard provides a **front Universal Serial Bus connector**. This is an optional USB connector for Front Panel.



Pin	Description	Pin	Description
1	VCC	6	USBD2+
2	GND	7	GND
3	USBD3-	8	USBD2-
4	GND	9	GND
5	USBD3+	10	VCC

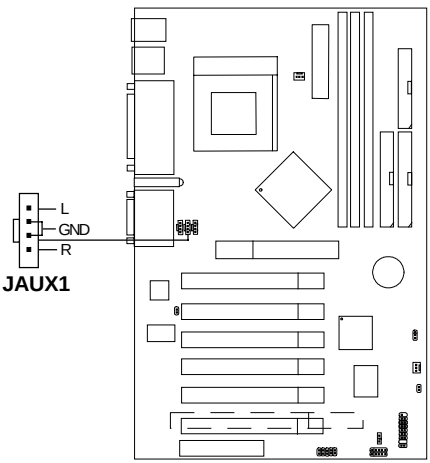
CD-In Connector: JCD1

This connector is for CD-ROM audio connector.



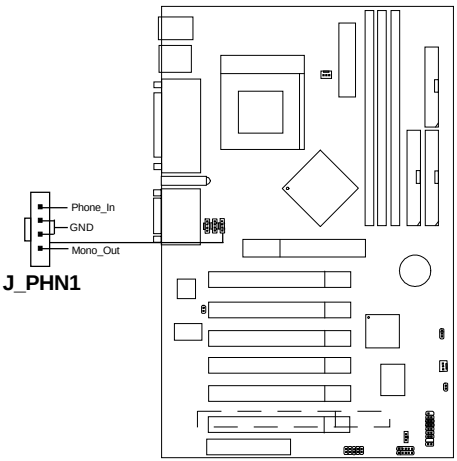
AUX Line In Connector: JAUX1

This connector is for DVD Add on Card with Line In connector.



Modem-In: J_PHN1

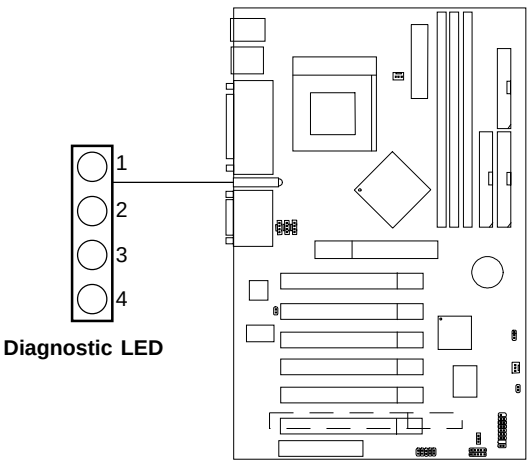
This connector is for Modem with internal voice connector.



Mono_Out is connected to the Modem Speaker Out connector.
Phone_In is connected to the Modem Microphone In connector.

Diagnostic LED

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. The LED helps user determine the problem of the mainboard.



Diagnostic LED

Diagnostic LED & Smart D-LED Voice function

D-LED 1 2 3 4	FUNCTION	POSSIBLE PROBLEM/VOICE CONTEXT
0 0 0 0	System Power ON This will start the BIOS Initialization	*The processor might be damaged or not installed properly***
1 0 0 0	Early Chipset Initialization	*Please check your reseller***
0 1 0 0	Memory Detection Test Testing Onboard memory size	*The memory module might be damaged or not installed properly***
1 1 0 0	Decompressing BIOS image to RAM for fast booting	*Please check your reseller***
0 0 1 0	Initializing Keyboard Controller	*The keyboard might be damaged or not plug-in properly***
1 0 1 0	Test shadow memory	*Please check your reseller***
0 1 1 0	Processor Initialization This will show information regarding the processor e.g. brand name, system bus, etc.,	*Please check your reseller***
1 1 1 0	Testing RTC (Real Time Clock)	*Low lithium battery***
0 0 0 1	Initializing Video Interface This will start detecting CPU clock, checking type of video onboard. Then detect and initialize the video adapter	*The VGA card might be damaged or not installed properly***
1 0 0 1	BIOS sign ON This will start showing information about logo, processor, brand name, etc.,	*Please check your reseller***
0 1 0 1	Testing base and Extended memory Testing base memory from 240K to 640K and extended memory above 1MB using various patterns	*Please check your reseller***
1 1 0 1	Assign Resources to all ISA	*Please check your reseller***
0 0 1 1	Initializing Hard Drive Controller This will initialize IDE drive and controller	*Check IDE cable for proper installation***
1 0 1 1	Initializing Floppy Drive Controller This will initialize Floppy Drive and controller	The Floppy Drive Cable might not be installed*
0 1 1 1	Assign IRQs to PCI devices	Stop
1 1 1 1	Operating System Booting	*System Available***

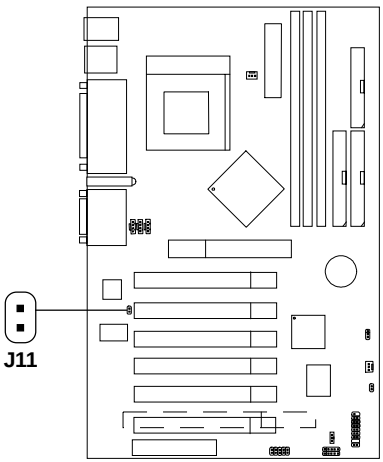
1 = GREEN 0 = RED

**** D-LED voice context**
*** No D-LED voice function**

Note: The system D-LED will hang when problem occurs during operation

Smart D-LED: J11

The Smart D-LED is a voice mode tool, which literally helps the users to identify the cause of any possible failure in English or Chinese language. The recorded voice works through the PC speaker voice.





Chinese Mode

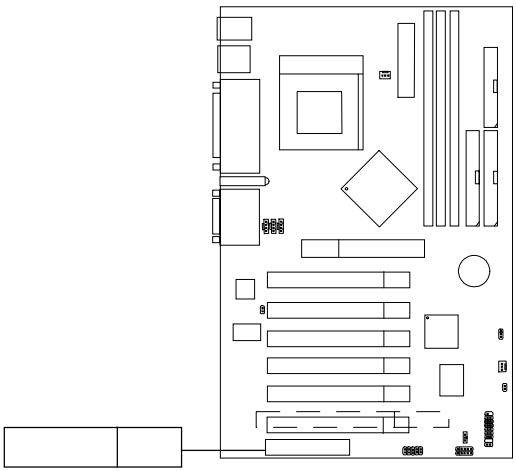


English Mode

Note: Smart D-LED voice tool cannot be Disabled.

CNR (Communication Network Riser)

The Communication Network Riser 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**.



Chapter 3

AWARD® BIOS SETUP

Award® BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM), so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press <Del> immediately to allow you to enter Setup. The other way to enter Setup is to power on the computer. When the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT, PRESS <CTRL-ALT-ESC>
OR <DEL> KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC>
OR <DEL> TO ENTER SETUP

Getting Help

Main Menu

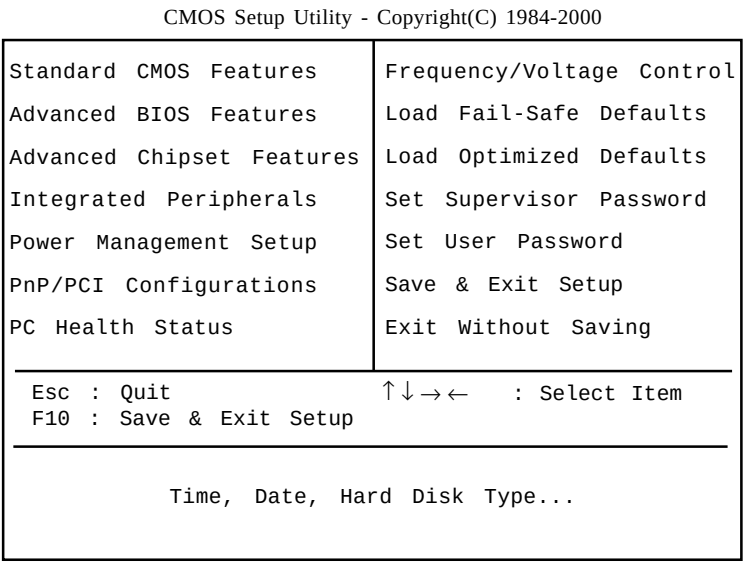
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



Standard CMOS Setup

Use this Menu for basic system configurations.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

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 Configuration

This entry appears if your system supports PnP/PCI.

PC Health Status (Optional)

This entry shows your PC health status.

Frequency/Voltage

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 for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

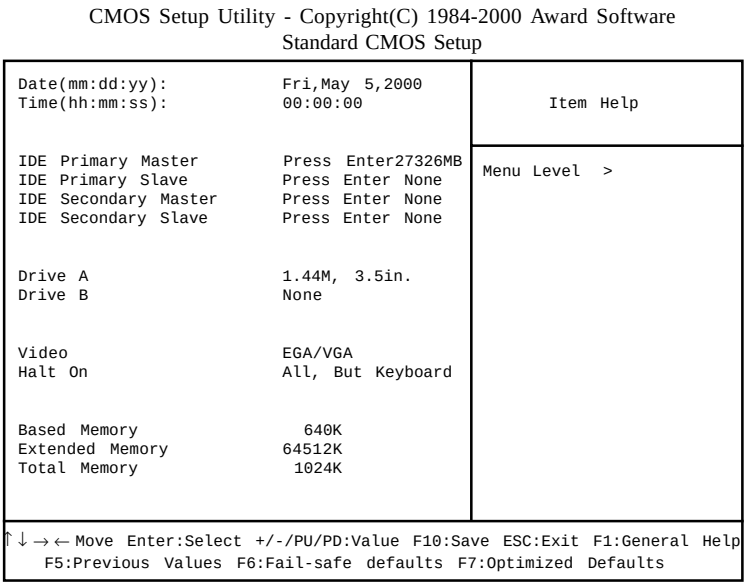
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



Date

The date 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

The time format is <hour> <minute> <second>.

PrimaryMaster/PrimarySlave
SecondaryMaster/Secondary Slave

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

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None".

Access Mode	The settings are Auto, Normal, Large,LBA.
Cylinder	number of cylinders
Head	number of heads
Precomp	write precom
Landing Zone	landing zone
Sector	number of sectors

Advanced BIOS Features

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Advanced BIOS Features

Anti-Virus Protection	Disabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	Menu Level >
Quick Power On Self Test	Enabled	
First Boot device	Floppy	
Second Boot device	HDD-0	
Third Boot device	LS/ZIP	
Boot other device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up Numlock Status	On	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select for DRAM > 64MB	Non-OS2	
Video BIOS Shadow	Enabled	
C8000-CBFF Shadow	Disabled	
CC000-CFFF Shadow	Disabled	
D0000-D3FF Shadow	Disabled	
D4000-D7FF Shadow	Disabled	
D8000-DBFF Shadow	Disabled	
DC000-DFFF Shadow	Disabled	

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

Anti-Virus Protection

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 date into this area, BIOS will show a warning message on screen and alarm beep.

Disabled (default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default) Enable cache
Disabled Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC (Error Check Correction).

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled, BIOS will shorten or skip some check items during POST.

Enabled Enable quick POST
Disabled (default) Normal POST

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default) Keypad is numeric keys.
Off Keypad is arrow keys.

Gate A20 Option

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke The settings are: 250, 500, 750, 1000.

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup(default)The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

OS Selection for DRAM > 64MB

Allows OS2® to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the "ADVANCED CHIPSET FEATURES" from the Main Menu and the following screen will appear.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced Chipset Features

Bank 0/1 DRAM Timing	SDRAM 8/10ns	Item Help
Bank 2/3 DRAM Timing	SDRAM 8/10ns	
Bank 4/5 DRAM Timing	SDRAM 8/10ns	
SDRAM Cycle Length	3	
DRAM Clock	Host CLK	Menu Level >
Memory Hole	Disabled	
P2C/C2P Concurrency	Enabled	
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	
AGP Driving Value	DA	
K7 CLK_CTL Select	Default	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
OnChip 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	Disabled	
AGP Master 1 WS Write	Enabled	
AGP Master 1 WS Read	Enabled	
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.

Bank 0/1 DRAM Timing
Bank 2/3 DRAM Timing
Bank 4/5 DRAM Timing

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

SDRAM Cycle Length

This item allows you to select the SDRAM cycle length. The settings are 2 or 3.

DRAM Clock

The chipset support synchronous and asynchronous mode between the host clock and DIMM clock.

Host CLK (default)	DIMM clock equal to host clock
66MHz	DIMM clock equal to 66MHz

Memory Hole

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled (default)	Memory hole not supported.

P2C/C2P Concurrency

This item allows you to Enable or Disable the PCI to CPU, CPU to PCI concurrency. The default setting is Enabled.

Fast R-W Turn Around

This item controls the DRAM timing. It allows the user to Enable or Disable the fast read, write turn around. The settings are Enabled or Disabled. The default setting is Disabled.

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFFh, 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.

Video RAM Cacheable

Select Enabled allows caching of the video BIOS , 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.

AGP Aperture Size

Select the size of the Accelerated Graphics Port (AGP) aperture. The 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.

AGP-4X Mode

This item is used to Enabled or Disabled the AGP support for AGP 4x mode.

AGP Driving Control

This item allows you to adjust the AGP driving force. Choose Manual to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system. The default setting is Auto.

AGP Driving Value

This item allows you to adjust the AGP driving force.

Onchip USB

Set this option to Enable or Disable the onchip USB controller. The default setting is Enabled.

USB Keyboard Support

Set this option to Enable or Disable the USB keyboard/mouse support. The default setting is Disabled.

OnChip Sound

This item allows you to control the onboard AC 97 audio.

OnChip Modem

This item allows you to control the onboard MC 97 Modem.

CPU to PCI Write Buffer

When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another cycle. The default setting is Enabled.

PCI Dynamic Bursting

This item allows you to Enable or Disable the PCI dynamic bursting function. The settings are Enabled or Disabled.

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. The settings are Enabled or Disabled.

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. The default setting is Enabled.

AGP Master 1 WS Write

When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait states. The default setting is Enabled.

AGP Master 1 WS Read

When Enabled, reads to the AGP (Accelerated Graphics Port) are executed with one wait states. The default setting is Enabled.

Memory Parity/ECC Check

This item when Enabled detects the memory parity and Error Checking & Correction. The settings are Enabled or Disabled.

Integrated Peripherals

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Integrated Peripherals

Onchip IDE Channel0	Enabled	Item Help
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 EEP Type	EEP 1.9	
Onboard Legacy Audio	Enabled	
Sound Blaster	Disabled	
SB I/O Base Address	220H	
SB IRQ Select	IRQ 5	
SB DMA Select	DMA1	
MPU-401	Disabled	
MPU-4-1 I/O Address	330-333H	
Game Port (200-207H)	Enabled	

↑↓→← 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/Onchip IDE Channel1

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

IDE Prefetch Mode

This item is used to Enabled or Disabled the IDE Read/Write Prefetch buffer. This buffer is used to store data for faster performances.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

Init Display First

This item allows you to decide to activate whether PCI Slot or AGP Slot. The settings are: PCI Slot, AGP Slot.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The settings are: Enabled, Disabled.

Onboard FDD Controller

Select Enabled if your system has a floppy disk controller (FDD) installed on the system board and you wish to use it. If you install add-on FDC or the system has no floppy drive, select Disabled in this field. The settings are: Enabled and Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode

This item allows you to select which mode for the Onboard Serial Port 2. The settings are: Standard, HPSIR, ASKIR.

IR Function Duplex

This item allows you to select the IR half/full duplex function.

TX, RX inverting enable

This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.

Onboard Parallel Port

There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

Disable	
3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

Onboard Parallel Mode

SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port

To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the ECP and SPP modes simultaneously, choose "ECP/SPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP/EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" At this time the user can choose between DMA channels 3 or 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode. The settings are 3 or 1. The default setting is 3.

Parallel Port EEP Type

Select EPP port type 1.7 or 1.9.

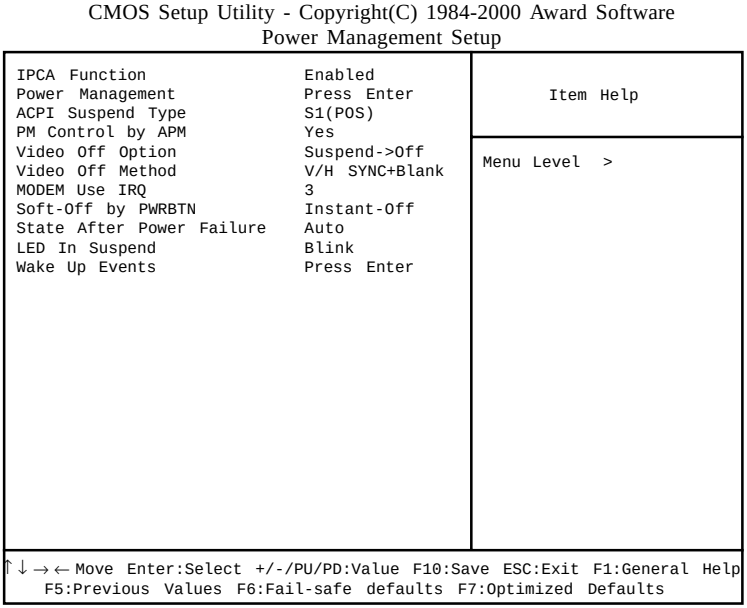
Onboard Legacy Audio

This fields controls the onboard legacy audio.

- Sound Blaster
- SB I/O Base Address
- SB IRQ Select
- SB DMA Select
- MPU-401
- MPU-401 I/O Address
- Game Port (200-207H)

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.



IPCA Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The Settings are Enabled and Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are three selections for Power Management, two of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management — Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (default)	Allows you to set each mode individu ally. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

ACPI Suspend Type

This item will set which ACPI suspend type will be used.

S1 (POS)	The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost(CPU or chip set) and hardware maintains all system context.
S3 (STR)	The S3 state is a low wake-up latency sleeping state where all system context is lost expect system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configura tion context.

PM Control by APM

No	System BIOS will ignore APM when power managing the system.
Yes	System BIOS will wait for APM's prompt before it enter any PM mode

Note: Enable this for O.S. with APM like Windows® 98, Windows® NT, etc.

Video Off Option

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

All-modes →Off	Monitor will be blanked when the system enters any power saving mode.
Always On	Monitor will remain On during power saving mode.
Suspend →Off	Monitor will be blanked when the system enters the 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 (default)	Initial display power management signaling.

Modem Use IRQ

This determines the IRQ in which the MODEM can use. The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

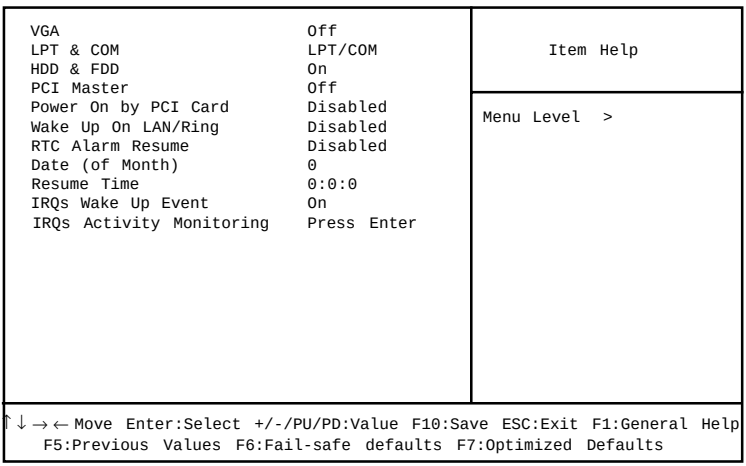
Soft-Off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

State After Power Failure

This option will determine how the system will power on after a power failure.

Wake Up Events



VGA

When Enabled, you can set the VGA to awaken the system.

LPT & COM

When LPT & COM is On, any activity from one of the listed system peripheral devices or IRQs wakes up the system

HDD & FDD

When HDD & FDD is On, any activity from one of the listed system peripheral devices or IRQs wakes up the system

PCI Master

When PCI Master is On, any activity from one of the listed system peripheral devices or IRQs wakes up the system

Wake Up On LAN/Ring

To use this function, you need a LAN add-on card or Modem which supports power on functions. During Disabled, the system cannot be boot up through LAN and ignores any incoming call from the modem. During Enabled, the system can be boot up through LAN and modem.

RTC Alarm Resume

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm You can choose which month the system will boot up. Set to 0, to boot every day.

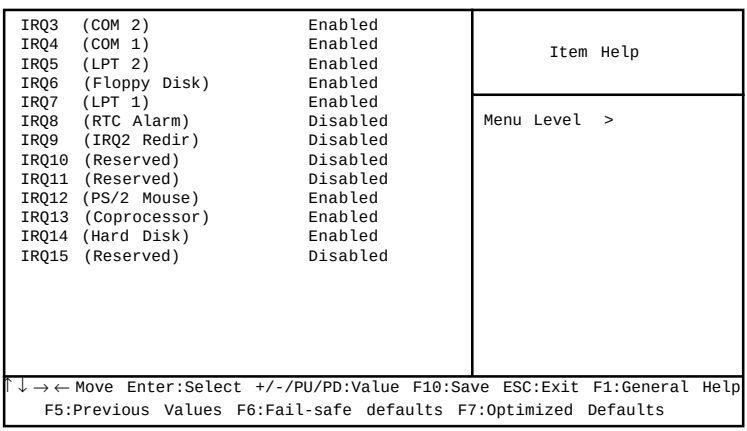
Time(hh:mm:ss) Alarm You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

IRQs Wake Up Event

When this is set to On, any event occuring at will awaken a system which has been powered down.

IRQs Activity Monitoring



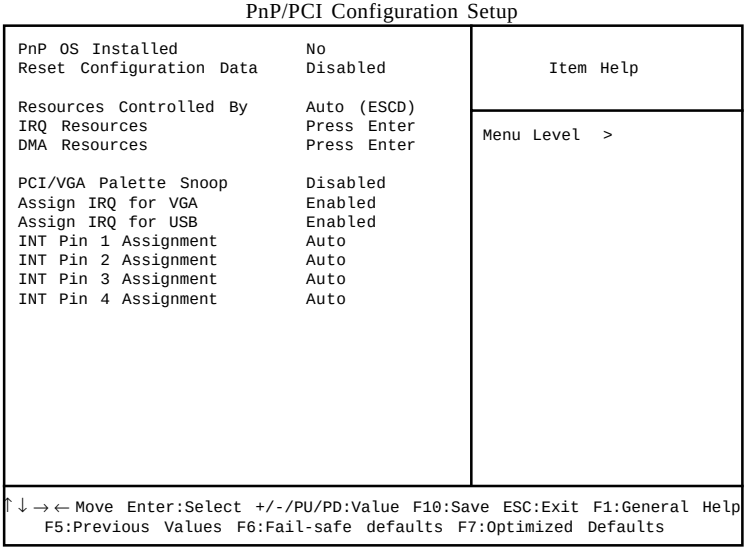
The following is a list of IRQ's, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ3 (COM 2)
- IRQ4 (COM 1)
- IRQ5 (LPT 2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocesssor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



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, for non-PnP operating system (DOS, Netware®), this option must set to Yes.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

The settings are: Enabled and Disabled .

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "➢"). The settings are: Auto(ESCD), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

DMA Resources

This sub menu can let you control the DMA resource.

PCI/VGA Palette Snoop

Leave this field at *Disabled*. The settings are Enabled, Disabled.

Assign IRQ for VGA

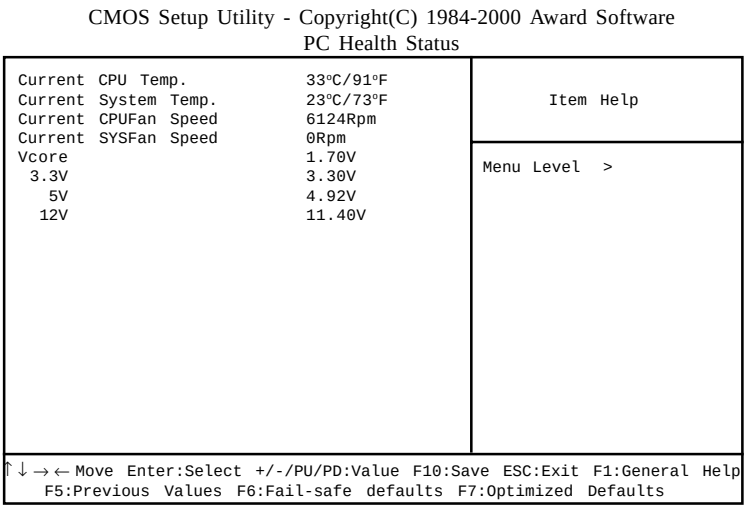
Leave this field at *Enabled*. The settings are Enabled, Disabled.

Assign IRQ for USB

Leave this field at *Enabled*. The settings are Enabled, Disabled.

PC Health Status (Optional)

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.



Current CPU Temp.

This item shows the current CPU temperature.

Current System Temp.

This item shows the current system temperature.

Current CPUFAN1 Temp.

This item shows the current CPUFAN1 speed.

Current CPUFAN2 Temp.

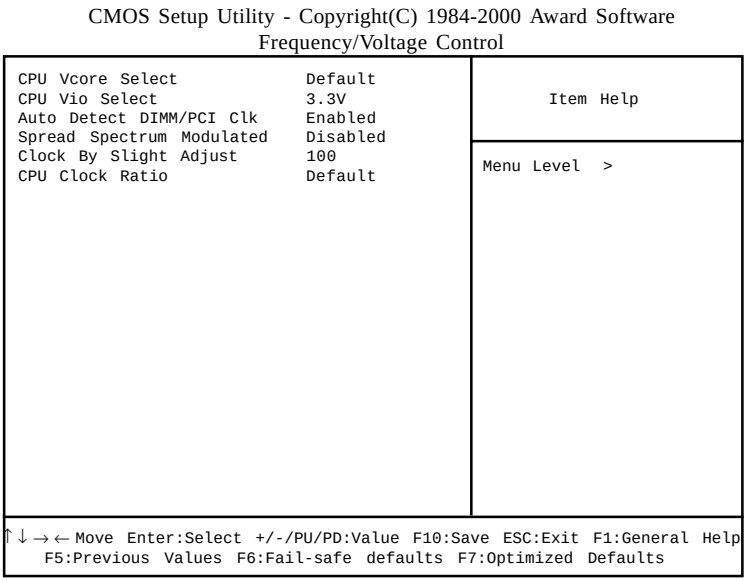
This item shows the current CPUFAN2 speed.

Vcore

This item shows the current system voltage.

Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.



Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI Clock.

The settings are: Enabled, Disabled.

Spread Spectrum Modulated

This item allows you to set the Spread Spectrum.

Clock By Slight Adjust

This item allows the user to increment the clock by 1(MHz) per clock adjustment. During OverClocking, if the system hangs up. The Watch Dog Timer will automatically reboot the system and set the Clock by Slight Adjust to its default setting (100MHz).

CPU Clock Ratio

This item allows you to select the CPU Clock Ratio.

Default	CPU Clock Ratio default setting.
5.5 to 12.5	Allows user to over ratio the CPU.

Note: We do not guarantee that the Motherboard or other components will work properly after overclocking.

Load Fail-Safe/Optimized Defaults

Load Fail-Safe Defaults
When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

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

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password: Can enter and change the options of the setup menus.

User password: Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, 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 require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Chapter 4

VIA CHIPSET DRIVER

Overview

The K7T PRO 2 is paired with the VIA VT82C686A south bridge. Highly advanced, the south bridge combines an integrated 2D/3D engine with DVD hardware acceleration, AC-97 audio support for SoundBlaster Pro and FM synthesis legacy audio.

Audio Features

- AC'97 audio support for SoundBlaster Pro
- FM synthesis legacy audio

System Requirements

This section describes system requirements for the VIA Chipset Driver installation and Usage.

Computer	AMD® Duron™/Athlon® processor or higher
Monitor	VGA Support, mimimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	VIA®K T133/VT82C686A chipset

Driver Setup & Usage Procedures for Windows® 98

Insert the CD-title into your CD-ROM drive. The CD will auto-run and will display the four icons in the monitor "VIA Chipset Drivers", "VIA AC97 PCI Sound Drivers" and "Download VIA Drivers". In order to install the drivers correctly, you must install the "Via Chipset Drivers" first, and then install the "VIA AC97 PCI Sound Drivers".

VIA Chipset Drivers installation procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "Via Chipset Drivers" icon and the screen will show "VIA Service Pack".
Step 4: Click "Next" and the screen will show four drivers "VIA Atapi Vendor Support Driver", "AGP VxD Driver", "VIA Chipset Function's Registry" and "IRQ Routing Miniport Driver". Select all four drivers and click on "Next".
Step 5: The setup program will request you to choose "Install VIA Atapi Vendor Support Driver". Please select "Install" and click "Next" to continue.
Step 6: Click to enabled DMA Mode, Please select "Install" and click "Next" to continue.
Step 7: 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". Please select "Install VIA AGP VxD in turbo mode" and click on "Next".

Step 8: The setup program will let you choose between "Install VIA Chipset Functions Registry" or "Uninstall VIA Chipset Functions Registry". Please select "Install VIA Chipset Functions Registry" and then click "Next".

Step 9: The setup program will let you choose between "Install VIA IRQ Routing Miniport Driver" or "Uninstall VIA IRQ Routing Miniport Driver". Please select "Install VIA IRQ Routing Miniport Driver"

Step 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 finish the VIA Chipset Drivers installation.

VIA AC97 PCI Sound Drivers installation procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "VIA AC97 PCI Sound Drivers" icon and the screen will show "VIA AC97 PCI Sound Drivers".
Step 4: Click "Next" to proceed and the screen will show "Install", or "Remove". Select "Install" and then click on "Next".
Step 5: 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 AC97 Audio Drivers Installation.

Windows® NT 4.0

Install Windows® NT 4.0 Service Pack 3 or the latest version before installing the VIA drivers.

Insert the CD-title in the CD-ROM drive. The CD will auto-run and will display four icons on the screen "VIA Chipset Drivers", "VIA AC97 PCI Sound Drivers"and "Download VIA Drivers". In order to install the drivers properly, install the "VIA Chip Drivers" first and then install the "VIA AC97 PCI Sound Drivers".

VIA Chipset Drivers Installation Procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "VIA Chipset Drivers" icon and the screen will show "VIA Service Pack".
Step 4: Click "Next" to proceed and the screen will show "Install", "Uninstall" or "Enable/Disable Ultra DMA for IDE Driver". Select "Install" and then click on "Next".
Step 5: Please click on "Yes, I want to restart my computer".

VIA AC97 PCI Sound Drivers Installation Procedure:

Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "VIA AC97 PCI Sound Drivers" icon and the screen will show the "VIA PCI Audio Drivers" setup screen. Click "Next" to continue
Step 4: The setup program will show "Install" or "Remove" in the screen. Select "Install" and click "Next"
Step 5: The setup program will show the following on the screen:

> Please choose "Add" from the next window and add the following device:
> VIA AC97 PCI Audio Device
> VIA MIDI External Port

Then click "OK".
Step 6: Follow the steps shown in **Step 5** to finish the VIA AC97 PCI Audio Drivers Installation.

Chapter 5

AGP Retention Module Procedure

AGP Retention Module



1. Locate the AGP slot.



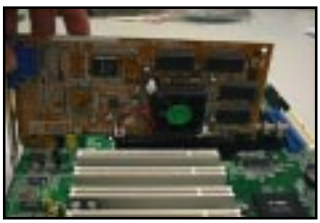
2. Insert the AGP Retention Module into the AGP slot.



3. **Check for a perfect fit.**



4. **Insert the AGP card into AGP slot.**



How To Uninstall AGP Card From AGP slot

1. **Pull the lever to release the AGP card.**



2. **Remove AGP card from AGP slot.**

