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M598, Version 5.0
S5/December 1998

Chapter 1
Introduction

This mainboard is an **100MHz** highly integrated high-performance mainboard based on the advanced Socket7 microprocessor and provides CPU Plug and Play feature for faster and easier CPU installation. The mainboard features highly flexible configurations and is fully IBM PC/AT compatible.

The mainboard uses **SiS 530 super7 chipset with video inside** that built in high performance **64-bit 3D AGP Graphics Accelerator**, supports the PCI/ISA and Green standards, provides the Host/AGP bridge, and integrates all system control functions such as ACPI(Advanced Configuration and Power Interface) that provides more energy saving features for the OSPM function.

The mainboard has an onboard **3D Sound Pro** to meet PC98' specifications for 3D Multimedia systems, and chipset built-in **Hardware Monitor** circuit to monitor CPU/Chasis temperatures, fan speeds and voltages with AMI **Desktop Client Manager** and support Intel **LANDesk Client Manager(LDCM)**. And the mainboard BIOS provides Trend's **ChipAwayVirus** to ensure the entire boot process virus free.

Key Features

The advanced features of this mainboard include:

- Supports Intel P54C/P55C(MMX) and Cyrix/IBM 6x86L/6x86MX/ MII, AMD K6/K6-2, IDT C6 CPUs with Frequency at 60/66/75/ 83/95/100 MHz.
  Provides **CPU Plug and Play** feature for faster and easier CPU installation.

- Provides 3 DIMMs for only 3.3V SDRAM memory modules.
  - supports a maximum size of 768MB system memory.
  - supports ECC(1-bit Error Code Correct) function.
  - onboard 64-bit 1M/2M(optional) L2 cache.

- Provides 3 PCI and 2 ISA slots.

- Onboard 2 IDE ports,
  - supports four IDE devices maximum.
  - supports PIO, Bus Master and Ultra DMA/33,66 operation modes.

- Provides both AT/ATX power connectors and features of ATX power as follows:
  - Power Button/Suspend Switch, **Keyboard Power On**.
  - Alarm, LAN and Modem Wake Up.

- Onboard **64-bit 3D VGA Graphics Accelerator**,
  - AGP Ver1.0 spec. complicant and 66/133MHz support.
  - 64-bit GUI accelerator with excellent video playback capability.
  - maximum 8MB frame buffer share from system memory.
  - high resolution graphic modes up to 1600x1200.

- Onboard **PCI Sound Pro** meets PC98' specifications,
  - full duplex playback and recording, built-in 16-bits CODEC.
  - HRTF 3D positional audio, supports both Direct Sound 3D® & A3D® interfaces, and support four channel speakers mode.

- supports Windows 3.1/95/98 and Windows NT 4.0.
- built-in 32 ohm earphone buffer and 3D surround.
- supports MPU-401 Game/Midi port and legacy audio SB16
- downloadable Wave-table Synthesizer support Direct Music®.
- Digital Audio Interface(SPDIF) IN/OUT up to 24-bit stereo 44KHz sampling rate voice and measured 120dB audio quality.
- Stereo Mixer supports analog mixing from CD-Audio, Line-In, and digital mixing from voice, FM/Wave-table and digital CD-Audio.

- Onboard Multi-I/O and Peripheral interface, include:
  - 1 floppy port with 1 Mb/s transfer rate.
  - 2 serial ports with 16550 compatible Fast UART.
  - 1 parallel port with EPP and ECP capabilities.
  - 2 USB ports & PS/2 keyboard/mouse ports.
  - 1 IR interface.

- Built-in Hardware Monitor circuit,
  - detects CPU temperature/fan speed and current voltages.
  - supports Intel LANDesk Client Manager(LDCM).

- Onboard **2M Flash ROM** supports complete ACPI and Legacy PMU, and is fully compatible with PC97 and PC98.
  BIOS provides Plug & Play function which detects the peripheral devices and expansion cards automatically.
  Supports Trend's **ChipAwayVirus** option to ensure the entire boot process is virus free, no installation and configuration worries.

- Bundled AMI **Desktop Client Manager**, detect abnormal condition and thermal management through the network link or self care.
  Bundled **PC-cillin98** (OEM) provides automatic virus protection for Windows 95/98 and the Internet.

- Dimension: Baby AT Form Factor, 22cm(L) x 22cm(W).

Unpacking the Mainboard & Static Electricity Precautions

This mainboard package contains the following items:

1. The mainboard and the device drivers

2. This User's Manual and AT cables

3. ATX Form Card

4. Sound & Game ribbon cables/bracket and SPDIF IN cable(optional)

5. VGA & Digital Audio ribbon cables/bracket

The mainboard is easily damaged by static electricity. Follow the precautions below while unpacking or installing the mainboard.

1. Do not remove the mainboard from its original package until you are ready to install it.

2. Frequently ground yourself to discharge any static electric charge that may build up in your body while working on installation and/or configuration. For example, you may ground yourself by grasping an unpainted portion of the system's metal chassis.

3. Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.

4. Handle the mainboard by its edges or by the mounting bracket to avoid touching its components.

5. Check the mainboard for damage. If any integrated circuit appears loose, press carefully to seat it firmly in its socket.

6. Do not apply power if the mainboard appears damaged. If there is damage to the board contact your dealer immediately.

Chapter 2
Hardware Configuration

Before you install the mainboard into the system chassis, you may find it convenient to first configure the mainboard's hardware. This chapter describes how to set jumpers and install memory modules, and where to attach components, however, the CMOS jumper is set on the "Clear" position when this mainboard is shipped and you need to set it to the "Normal" position in order for the mainboard perform properly.

Warning: ***Set JP3 to "Normal" position before setting other jumpers or memory modules. This mainboard will not function properly if you fail to do so.***

Mainboard Component Locations

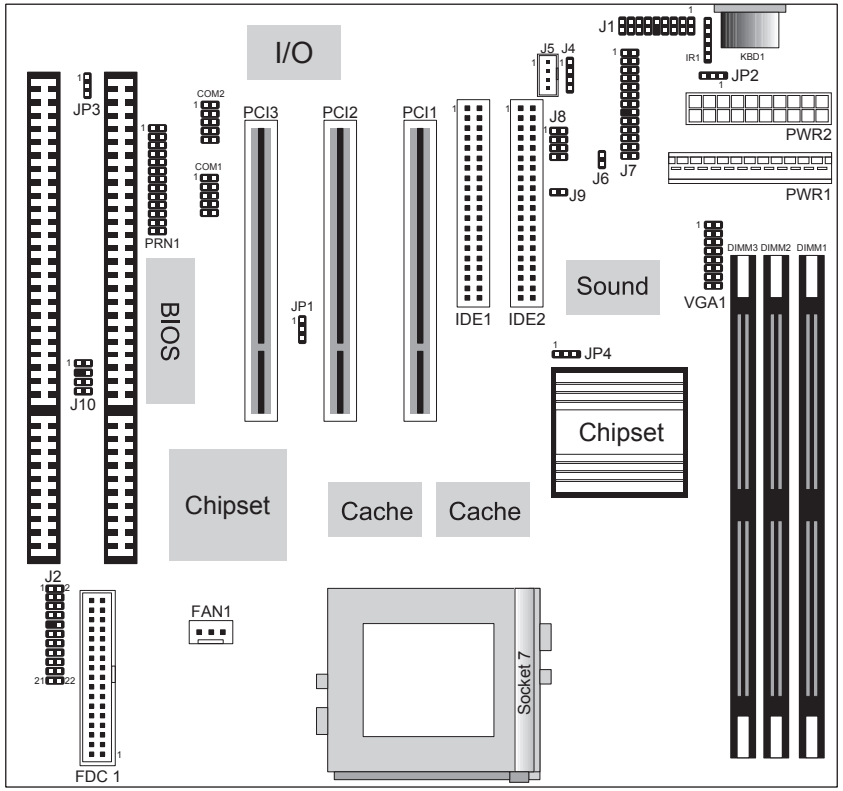


Figure 2-1. Mainboard Component Locations

CPU Speed Setting

This mainboard provides CPU Plug and Play technology, so that there is no need to do the CPU jumper setting. Enter the BIOS Setup and select about “CPU PnPSetup ” to choose the correct CPU speed to match yourCPU installed. However, if you need to change a CPU, follow the below steps:

1. Power off system and unplug the power core.
2. Install a new CPU to Socket 7.
3. Clear CMOS RAM (see Jumper Settings) then power on the system.
4. After power on the system, then enter the BIOSSetup section to set the new CPU speed.

Note: If the CPU speed is set incorrectly and fails to boot upthe system, then repeat steps 1, 3, 4 again.

Memory Installation

The mainboard lets you add up to 768MB of system memory through 3 DIMM sockets on the board, that is divided into 3 banks: Bank 0, Bank 1 and Bank 2, which supports the following memory configurations.

Bank	Memory Module
Bank 0	
DIMM1	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
Bank 1	
DIMM2	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
Bank 2	
DIMM3	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
System Memory =	Bank 0 + Bank 1 + Bank 2

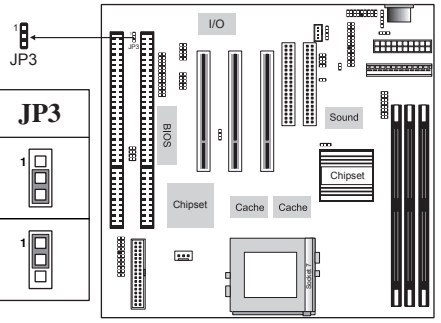
Notes: 1. Supports only 3.3V SDRAM DIMM modules.

2. The SDRAM must be installed in DIMM1 first, if onboard VGA is being used.

Jumper Settings

JP3 - CMOS RAM Clear Selector

The battery on this mainboard is designed to retain the system configuration in CMOS RAM. In order to save the life of the battery, this jumper is set to "Clear CMOS" position when this board is shipped, therefore you need to set this jumper to "Normal" position before setting other system configuration.



Description	JP3
Clear CMOS (while shipping)	1
Normal	1

Note: 1. ***Make sure this jumper is set to Normal mode before use****.*
2. Once you need to clear the CMOS, make sure your system is truned off and the power core is unplugged.

ATX Functions & Connectors

This mainboard supports ATX power and ACPI specification. The ATX functions and connectors are described below, and which work with ATX power supply.

PWR2 – ATX Power Connector

The ATX power supply is a single 20-pin connector. Connect the ATX power supply to this connector which provides all power for the mainboard.

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	3.3V	6	+5V	11	3.3V	16	Ground
2	3.3V	7	Ground	12	–12V	17	Ground
3	Ground	8	Power OK	13	Ground	18	–5V
4	+5V	9	5VSB	14	PS-ON	19	+5V
5	Ground	10	+12V	15	Ground	20	+5V

J2(21,22) – Power Button/SuspendSwitch Connector

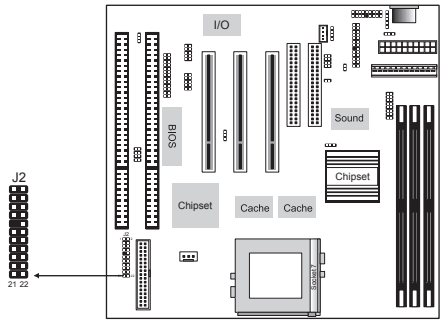
Attach the ATX power button or suspend switch cable to this connector. In the AT power system, this connector will act as a suspend switch; In the ATX power system, this connector will be not only an ATX power button but a suspend switch as well. Details are described below:

When the system is off, turn the system back on by pushing the power button.

When the system is on, pushing the power button allows the system to be switched to the Suspend mode. And, if push and hold the power button for more than 4 seconds, then the system will be turned off completely.

If the system is already in the Suspend mode, pushing the power button rapidly will turn on the system.

J2(21,22) – Power Button/SuspendSwitch Connector



Software Power-Off

Follow the steps below to use the “Software Power-Off Control” function in Windows 95/98.

1. Click the START button on the Windows 95/98 task bar.
2. Select Shut Down The Computer to turn off the computer. The message “It is now safe to turn off your computer.” will not be shown when using this function.

Alarm Wake On

If you want to autoboot the system at a certain time, set the RTC Alarm time properly and "Enabled" the option of RTC Alarm Power On and refer to BIOS Setup section.

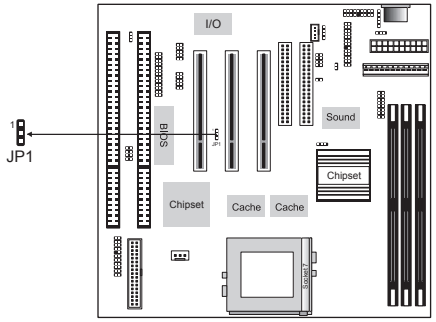
LAN/Modem Ring Wake On

While in soft-off/suspend state, if an external LAN/modem ring-up signal occurs, the system wakes up and can be remotely accessed.
When using Modem Ring Wake On function make sure that the "IRQ3" option is set to *Monitor* and the "Ring On Power On" option is set to *Enabled* and refer to the BIOS Setup section.
When using LAN Wake On function make sure that the ”LAN Card Power On” option is set to *Enabled* and connect LAN card to the following connector.

JP1 - Wake On LAN Connector

Connect this connector to the LAN card that support ACPI specification.

Pin	Description
1	5V Standby
2	Ground
3	Active High

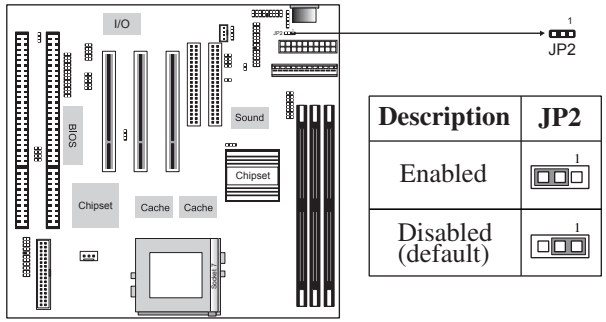


Keyboard Power On

Press the hot key(Ctrl + Alt + Back Space) to power on the system by keyboard. User must enter BIOS Setup to set *Enabled* to the "Keyboard Power On" option in the Advanced Chipset Setup, and set the following jumper.

JP2 – Keyboard Power On Selector

This jumper is designed for the user to select Keyboard Power On function.



Description	JP2
Enabled	
Disabled (default)	

Note: Make sure that the system power can provide 720mA on +5VSB(+5V Standby) signal before using Keyboard Power On function.

Connectors

Attach system components and case devices to the mainboard via the mainboard connectors. A description of each connector follows.

Note: Make sure that the power is turned off before making any connection to the board.

PWR1 – AT Power Connector

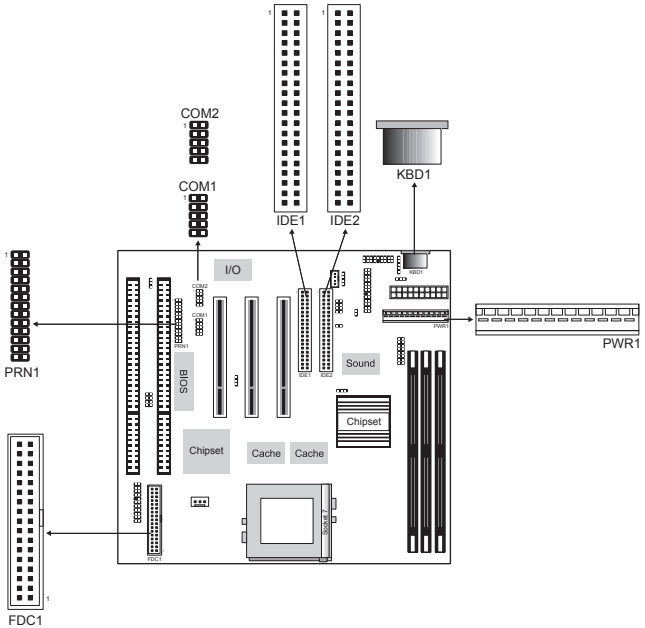
COM1/2 – Serial Port #1/#2

PRN1 – Parallel Printer Connector

FDC1 – Floppy Disk Drive Connector

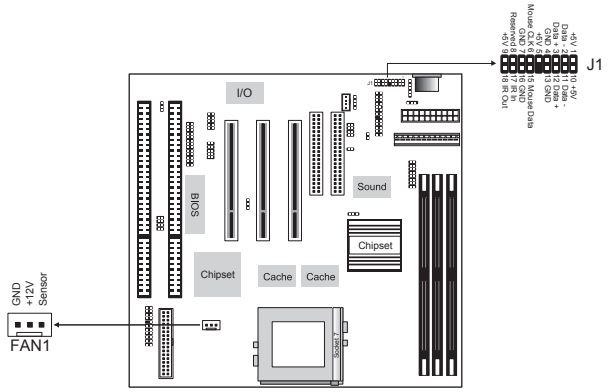
IDE1/IDE2 – Primary/SecondaryIDE Connectors

KBD1 – AT Keyboard Connector



J1 – ATX Form Card Connector

Connect this connector to the ATX Form Card that come with the mainboard package. Which contains 2 USB(pin1-4,pin10-13), PS/2 Mouse(pin5-6,pin15-16) and InfraRed (pin7-9,pin17-18)connectors,

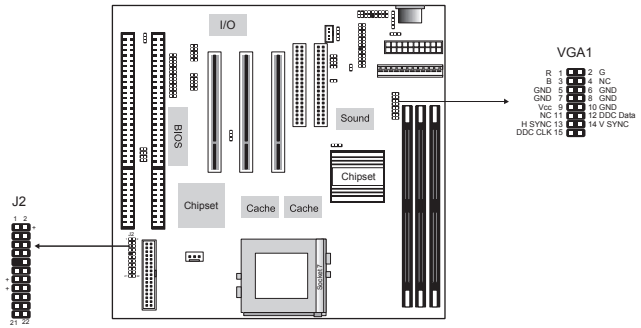


FAN1 – CPU Fan Power Connector

Connect CPU fan cable to FAN1.

VGA1 – VGA Port Connector

Connect VGA cable/bracket to this connector.



pin1, 3, 5, 7 – Speaker pin2, 4, 6 – Power LED
pin8, 10 – Keylock pin13, 14 – Turbo LED
pin15, 16 – HDD LED pin17, 18 – Reset Switch
pin21, 22 – Power Button *(refer to ATX Functions & Connectors section)*

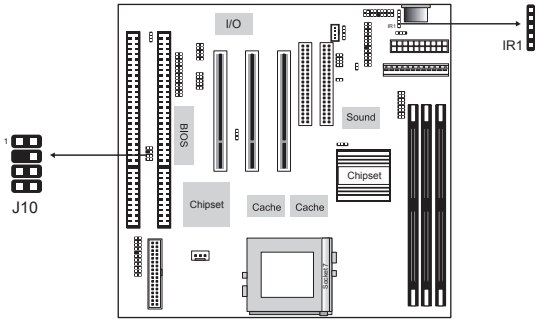
J2 - Case Connectors

The case connectors contains: Speaker, Power LED, Keylock, Turbo LED, HDD LED, Reset Switch, and Power Button as above drawing.

IR1 – InfraRed Connector

The mainboard provides a 5-pin Infrared connector for IR devices. You must configure the setting of IR device through the Peripheral Setup in BIOS Setup section.

Pin	Signals
1	Vcc
2	NC
3	IRRX
4	GND
5	IRTX



J10 – PS/2 Mouse Pin-header Connector

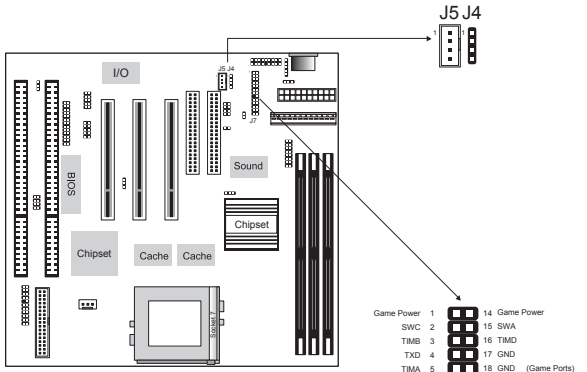
Connect PS/2 mouse pin-header cable to this connector for PS/2 mouse.

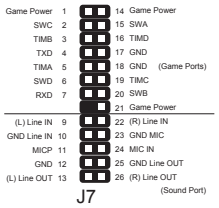
Onboard PCI Sound Pro

There is a PCI Sound Pro on the board for 3D multimedia systems.

J4/J5 – Analog Audio from CD-ROM Connectors

Connect from “AUDIO” output of the CD-ROM driver to these connectors. For Panasonic or compatible type ofCD-ROM, connect to J5 (pin signals assignment is G-L-G-R), and for Sony or compatible type of CD-ROM,connect to J4 (pin signals assignment is L-G-G-R).





J7 – Sound and Game Connector

This connector provides Line-IN/Rear(see following The 4 Speakers System section), MIC (Microphone),Line-Out (Speaker) signals for audio I/O, and Game Port(which is also used as the Joystick/MIDI port) signals.Connect this connector to the Sound & Game ribboncable/bracket.

J8 – Digital Audio Connector

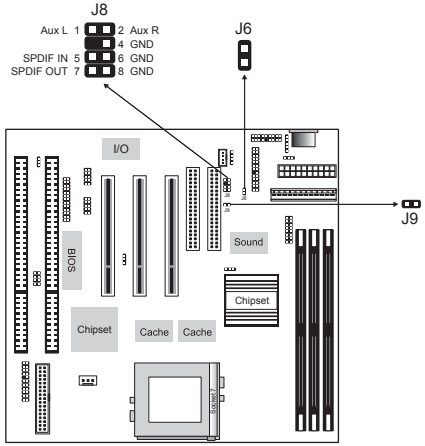
Connect this connector to the Digital Audio ribbon cable/ bracket that contains 3 jacks for Aux IN, SPDIF IN and SPDIF OUT device. Aux IN is called the second Line-in. Connect SPDIF IN to the Mini-Disk to record, and **avoid** this jack to work simultaneously with the internal SPDIF IN connector. Connect SPDIF OUT to the AC3 Audio Amplifier or Mini-Disk to play, and set the following jumper to select 5V or 0.5V signal level for used device.

J6 – SPDIF OUT Signal Level Selector

Description	J6
5V (default)	
0.5V	

J9 – Internal SPDIF IN Connector

Connect to “DIGITAL AUDIO” port of the CD-ROM drive by using the SPDIF/IN cable, which gives you the non-distortion digital audio from CD-ROM. **Avoid** this connector to work simultaneously with the SPDIF IN jack.



Notice for Sound Pro drivers install and application

1. Before you install the Sound Pro drivers, make sure your Operating System has been installed, otherwise the Sound Pro might be detect as "Other Device" by the device manager of your OS.
2. After the drivers install, select MULTIMEDIA icon within CONTROL PANEL. Select WSS(Windows Sound System) as the equipment while playback, and select the SB16(Sound Blaster 16) as the equipment while recording, then click "OK" to confirm, thus ensure the chip to work with full duplex applications.
3. If you wants to use Software Wave-Table drivers as MIDI output device, select MULTIMEDIA icon within CONTROL PANEL. Select MIDI page, and click on "SoftMidi Driver" then click "OK" to confirm.
4. A Windows application named Audio Rack is provided within Sound Pro drivers, which gives you control over all audio functions through a user interface as simple to use a home stereo system, we recommended you to use the System Mixer within Audio Rack to control the volume, recording device select and recording gain.
5. If you using devices that use Midi port as the control interface, you need to enable the "MPU-401 MIDI" through the MIDI device setting of Sound Pro Audio Rack.
6. See details of PCI Sound Pro manual within the CD attached with the mainboard.

The 4 Speakers System

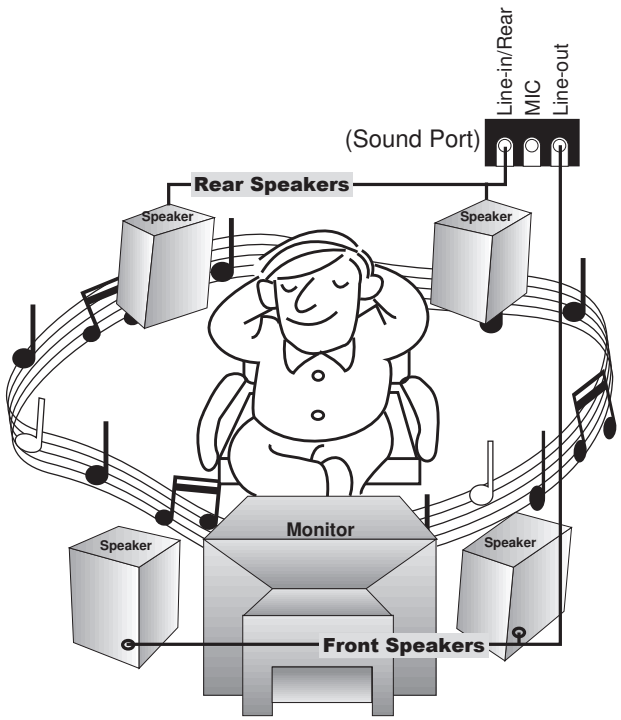
Onboard Sound Pro provides 2 wave channels (front/rear), known as the 4 speakers system. When application programs via DirectSound® 3D or A3D® interface locate the sound sources to the listener's back, the two rear speakers will work to enhance the rear audio positional effect, so as to complement the insufficiency of using only two front speakers to emulate the audio effect. The following is the hardware installation and the software setups:

1. The speaker installation.
Connect the front pair speakers to the Line-out jack on the Sound port, and then connect rear pair speakers to Line-in/ Rear jack. The original Line-in can be moved to Aux-in.

2. The positions of the speakers
Put your speakers the way the following picture suggests, so as to avail yourself to the best audio result.

3. The mixer setup
When user was setup the PCI Audio Application, there is a 4 speakers option in the Volume Control of the Mixer, click 4 SPK icon to enable this option, it means the rear speakers are connected to Line-in/Rear jack. When Line-in/Rear jack is connected to other external Line-in sources, please **DO NOT** enable this option in order to avoid hardware conflicts. Regarding rear speaker option, you can turn on/off the output of the back speakers, and adjust the volume of speakers to the same volume.

4. The demo
Execute the "Helicopter" demo within the C3D HRTF Positional Audio Demos of the PCI Audio Application. When the helicopter flies behind you, the rear speakers will work.



A picture on the 4 speakers application

Chapter 3
BIOS Setup

This chapter explains how to configure the mainboard's BIOS setup program. The setup program provided with the mainboard is the BIOS from AMI.

After you have configured the mainboard and have assembled the components, turn on the computer and run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what type of devices are connected to your system board.

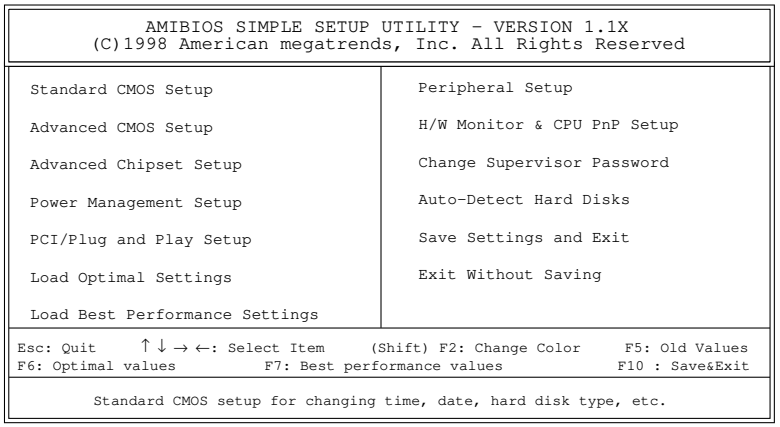
The system setup is also called CMOS setup. Normally, you need to run system setup if either the hardware is not identical with information contained in the CMOS RAM, or if the CMOS RAM has lost power.

Note: Hold down the <End> key then power on to reboot the system when installing newer BIOS into this mainboard .

Entering BIOS Setup

To enter the BIOS Setup program:

1. Turn on or reboot the system. A screen appears with a series of diagnostic checks.
2. When "Hit <DEL> if you want to run SETUP" appears, press the <DEL> key to enter the BIOS setup program. The following screen appears:



3. Use your keyboard to choose options. Modify system parameters to reflect system options. Press Alt-H for Help.

Default

Every option in the BIOS Setup contains two default values: Best default and the Optimal default value.

Load Optimal Settings

The Optimal default values provide optimum system settings for all devices and system features.

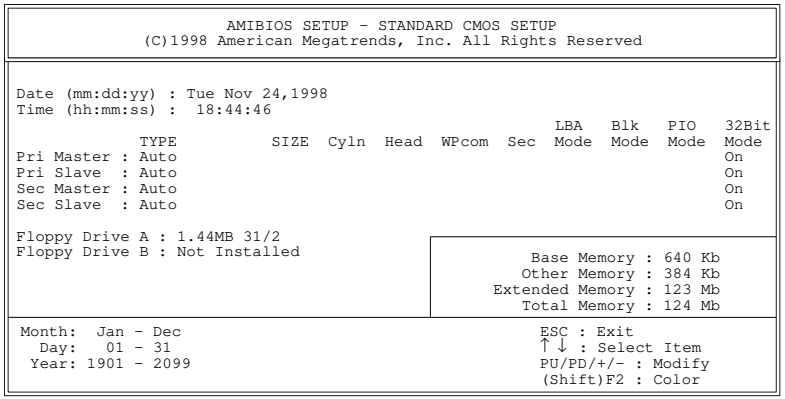
Load Best Performance Settings

The Best default values provide best performance settings for all devices and system features, however depending on the devices used, these settings are not recommend for long hours of work load.

Setup Items

Standard CMOS Setup

Choosing the item from the BIOS Setup main menu. All Standard Setup options are described in this section.



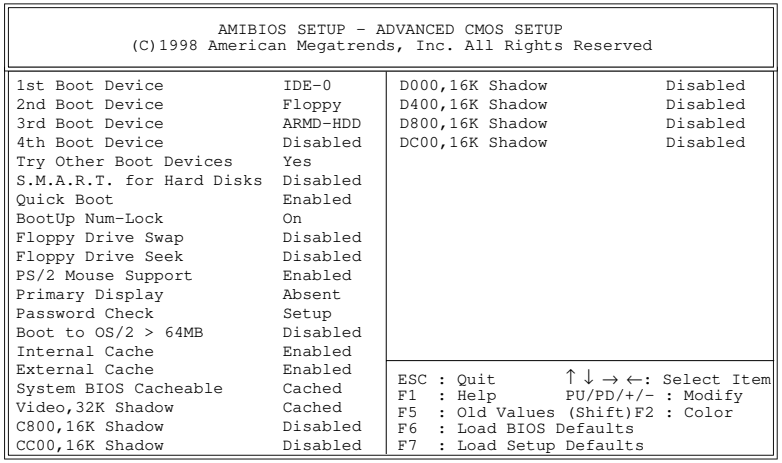
Date/Time Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.

Pri Master; Pri Slave; Sec Master; Sec Slave Choose these icons to configure the hard disk drive named in the option. When you click on an icon, the following parameters are listed: Type, LBA/Large Mode, Block Mode, 32Bit Mode, and PIO Mode. All parameters relate to IDE drives except **Type**. Choose the **Type** parameter and select Auto BIOS automatically detects the IDE drive parameters and displays them. Choose on **LBA Mode** and choose *On* to enable support for IDE drives with capacities greater than 528MB. Click on **Blk Mode** and choose On to support IDE drives that use Blk Mode. Click on **32Bit Mode** and click on *On* to support IDE drives that permit 32-bit accesses.

Floppy Drive A; B Choose the Floppy Drive A or B icon to specify the floppy drive type. The settings are 360KB 5 1/4", 1.2MB 5 1/4", 720KB 3 1/2", 1.44MB 3 1/2", or 2.88MB 3 1/2".

Advanced CMOS Setup

Choosing the item from the BIOS Setup main menu. All Advanced Setup options are described in this section.



1st Boot Device; 2nd Boot Device; 3rd Boot Device; 4th Boot Device Set these options to select the boot sequence from different booting devices.

Try Other Boot Devices Choose *Yes* or *No* to search other boot devices to boot up the system when all the options in the previous function failed.

S.M.A.R.T for Hard Disks Choose Enabled or Disabled. This option allows you to utilize the S.M.A.R.T. function of HDDs.

Quick Boot Set this option to *Enabled* to permit BIOS to boot within 5 seconds.

Boot Up Num-Lock Set this option to turn on *Num Lock* key when the system is powered on.

Floppy Drive Swap This option allows you to swap floppy drives between A: and B:.

Floppy Drive Seek Choose Enabled or Disabled. Disabled provides a faster boot and reduces the possibility of damaging the heads.

PS/2 Mouse Support When this option is set to *Enabled*, BIOS supports a PS/2-type mouse.

Password Check This option specifies the type of BIOS password protection that is implemented. The settings are:

Setup: The password prompt appears only when an end user attempts to run BIOS Setup.

Always: A password prompt appears every time the computer is powered on or rebooted.

The password does not have to be enabled.

Primary Display Set this option to select the primary display subsystem in the computer.

Boot to OS/2 > 64MB You need to set this option to Enabled when using the OS/2 operating system with installed DRAM which is greater than 64MB.

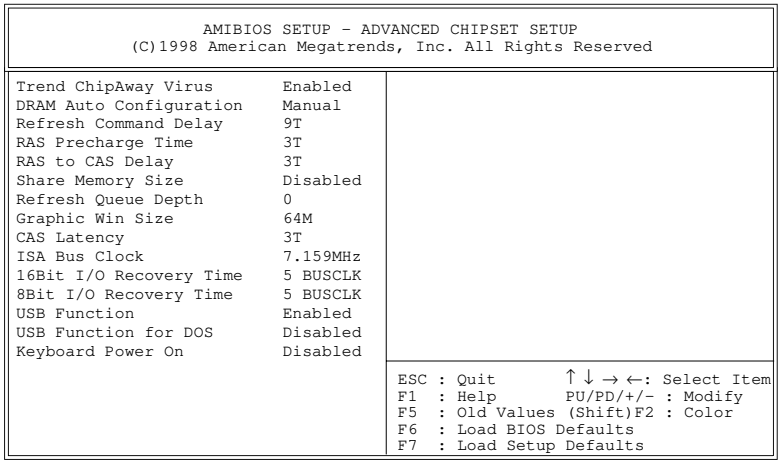
Internal Cache; External Cache Set these two options to enable or disable the internal/external cache.

System BIOS Cacheable BIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to *Enabled* to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory.

Video, 32K Shadow;	Disabled:	The specified ROM is not copied to RAM.
C800, 16K Shadow;		
CC00, 16K Shadow;	Enabled:	The contents of the ROM area are not only copied from ROM to RAM for faster execution, the contents of the RAM area can be written to or read from cache memory.
D000, 16K Shadow;		
D400, 16K Shadow;		
D800, 16K Shadow;		
DC00, 16K Shadow		
	Cached:	The contents of the ROM area are copied from ROM to RAM for faster execution.

Advanced Chipset Setup

Choose the item from the BIOS Setup main menu. All Chipset Setup options are then displayed and are described in the following section:



Trend ChipAway Virus Choose *Enabled* to activate the Trend ChipAwayVirus function.

DRAM Auto Configuration Set this option to enable the Auto Configuration of DRAM timing.

Refresh Command Delay Set this option to select the proper refresh command delay.

RAS Precharge Time Set this option to select the proper SDRAM RAS precharge time.

RAS to CAS Delay Set this option to select the proper delay time of SDRAM RAS to CAS.

Share Memory Size Set this option to select the onboard VGA frame buffer size that share from system

queue depth.

Graphics Win Size Set this option to select the memory-mapped. Use the default setting.

CAS Latency This option is designed to select the SDRAM CAS Latency.

ISA Bus Clock Set this option to select the proper ISA bus clock.

16Bit I/O Recovery Time Set this option to select the proper 16-bit bus I/O recovery time clock. Use the default setting.

8Bit I/O Recovery Time Set this option to select the proper 8-bit bus I/O recovery time clock.

USB Function Set this option to enable the system BIOS USB functions.

USB Function for DOS Set this option to enable the passive release on the USB.

Keyboard Power On Set this option to enable the Keyboard Power On function, and needs ATX power supply, refer to "Keyboard Power-On" in the ATX Functions & Connectors section.

Power Management Setup

Choosing the item from BIOS Setup main menu.

```
            AMIBIOS SETUP - POWER MANAGEMENT SETUP
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Power Management/APM       Disabled
Green Monitor Power State  Suspend
Video Power Down Mode      Stand By
Hard Disk Power Down Mode  Suspend
Standby Time Out (Minute)  Disabled
Suspend Time Out (Minute)  Disabled
Modem Use IRQ              N/A
Display Activity           Ignore
IRQ3                       Monitor
IRQ4                       Monitor
IRQ5                       Ignore
IRQ7                       Ignore
IRQ9                       Ignore
IRQ10                      Ignore
IRQ11                      Ignore
IRQ13                      Ignore
IRQ14                      Monitor
IRQ15                      Monitor
LAN Card Power On          Disabled
Ring On Power On           Disabled

ESC : Quit       ↑ ↓ → ←: Select Item
F1  : Help       PU/PD/+/- : Modify
F5  : Old Values (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

Power Management/ APM Set this option to enable power management features and APM (Advanced Power Management).

Green Monitor Power State This option specifies the power state that the green PC-compliant video monitor enters when AMIBIOS places it in a power savings state after the specified period of display inactivity has expired.

Video Power Down Mode This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired.

Hard Disk Power Down Mode This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired.

Standby Time out (Minute)	This option specified the length of system inactivity while in Full power on state. When this length of time expires, the computer enters Standby power state.
Suspend Time Out (Minute)	This option specified the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state.
Display Activity; IRQ3, 4, 5, 7, 9, 10, 11, 13, 14, 15	When set to *Monitor*, these options enable event monitoring on the specified hardware interrupt request line and the computer is in a power saving state, BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.
LAN Card, Ring On Power On	Set these options to enable the signal of LAN/ modem to resume the system with ATX power.
RTC Alarm Power On	Set this option to enable the RTC Alarm to resume the system with ATX power.
RTC Alarm Date; RTC Alarm Hour; RTC Alarm Minute; RTC Alarm Second	Set these options to specify the RTC Alarm time on Date/Hour/Minute/Second.

PCI/Plug and Play Setup

Choose the item from the BIOS Setup main menu.

```
            AMIBIOS SETUP - PCI / PLUG AND PLAY SETUP
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Plug and Play Aware O/S     Yes      Reserved Memory Address  C8000
Onboard AGP VGA             PCI
PCI VGA Palette Snoop       Disabled
Assign IRQ for VGA          No
DMA Channel 0               PnP
DMA Channel 1               PnP
DMA Channel 3               PnP
DMA Channel 5               PnP
DMA Channel 6               PnP
DMA Channel 7               PnP
IRQ3                        PCI/PnP
IRQ4                        PCI/PnP
IRQ5                        PCI/PnP
IRQ7                        PCI/PnP
IRQ9                        PCI/PnP
IRQ10                       PCI/PnP   ESC : Quit       ↑ ↓ → ←: Select Item
IRQ11                       PCI/PnP   F1  : Help       PU/PD/+/- : Modify
IRQ14                       PCI/PnP   F5  : Old Values (Shift)F2 : Color
IRQ15                       PCI/PnP   F6  : Load BIOS Defaults
Reserved Memory Size        Disabled  F7  : Load Setup Defaults
```

Plug and Play Aware OS Set this option to *Yes* if the operation system in this computer is aware of and follows the Plug and Play specification. Currently, only Windows 95 is PnP-aware.

Onboard AGP VGA Set this option to select onboard AGP or PCI VGA card for primary graphics adapter.

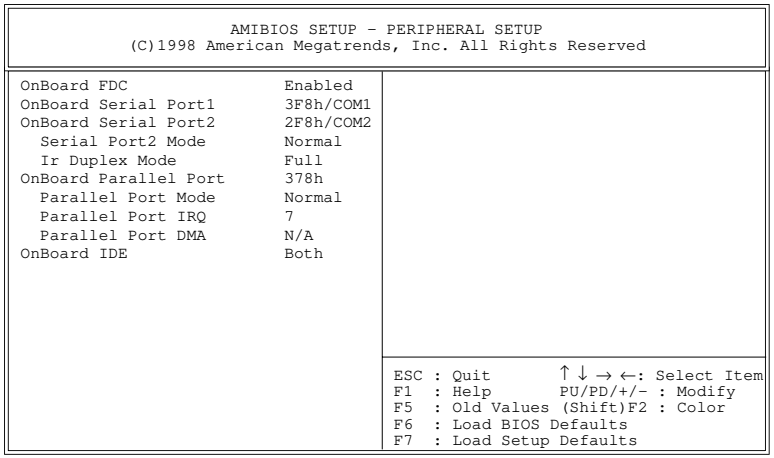
PCI VGA Palette Snoop When this option is set to Enabled, multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit.

Assign IRQ for VGA This option is used to allocate IRQ to PCI VGA. Recommendation is set to *No*.

DMA Channel 0, 1, 3, 5, 6, 7	These options specify the bus that the specified DMA channel is used on.
IRQ3, 4, 5, 7, 9, 10, 11, 14, 15	These options specify the bus that the specified IRQ line is used on. These options allow you to reserve IRQs for legacy ISA adapter cards.
Reserved Memory Size/Address	These options are designed to be used for reserving memory/memory address for the IO card.

Peripheral Setup

Choose the item from the BIOS Setup main menu.



OnBoard FDC This option enables the FDC (Floppy Drive Controller) on the motherboard or auto detects the FDC.

OnBoard Serial Port1 This option specifies the base I/O port address of serial port 1.

OnBoard Serial Port2 This option specifies the base I/O port address of serial port 2.

Serial Port2 Mode This option specifies the serial port2 mode.
Normal: The normal serial port mode is being used.
IrDA/ASKIR: The serial port2 will be redirected to support IR function when this option is set to IrDA or ASKIR.

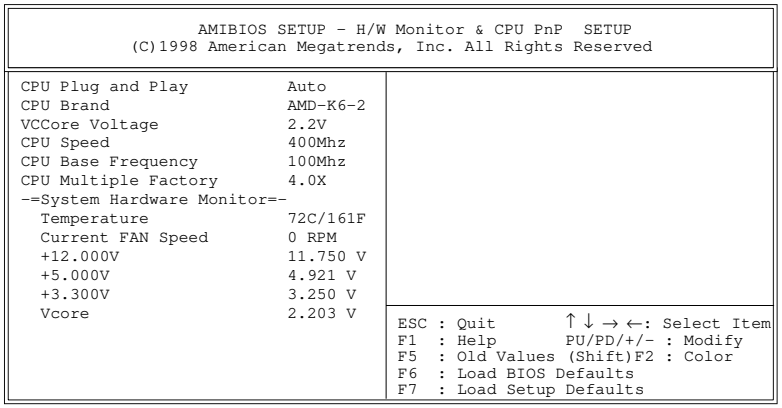
IR Duplex Mode This option is to specify the Duplex mode of Serial Port 2.

OnBoard Parallel Port This option specifies the base I/O port address of the parallel port on the motherboard.

Parallel Port Mode	Depends on the type of your external device which connects to this port to choose Normal, EPP, or ECP mode.
Parallel Port IRQ	This option specifies IRQ to parallel port.
Parallel Port DMA	This option is only available if the setting of the Parallel Port Mode option is EPP/ECP.
OnBoard IDE	This option specifies the channel used by the IDE controller on the motherboard.

H/W Monitor & CPU PnP Setup

Choose this item from the BIOS Setup main menu.



CPU Plug & Play Set this option to *Auto*, then CPU will be able to detect CPU speed automatically; when it is set to *Manual*, then it allows the user to set CPU frequency, ratio, and voltage.

CPU Brand This option is displayed only to show the CPU name.

VCCore Voltage Set this option to select the voltage of CPU core when the previous option (CPU Plug & Play) is set to Manual.

CPU Speed Set this option to select speed of CPU when the previous option (CPU Plug & Play) is set to Auto.

CPU Base Frequency Select a correct CPU Frequency to match your CPU, that includes 60, 66, 75, 83, 95, 100 MHz.

CPU Multiple Factory Select a correct CPU factory to match your CPU, that includes 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5,6, etc.

–= System Hardware Moniotr =–

Temperature;
Current Fan Speed;
+12.000V; +5.000V;
+3.300V; Vcore

These options are displayed only to show the status of the system hardware.

Change Supervisor Password

This item lets you configure the system password which is required every time when the system boots up or an attempt is made to enter the Setup program. The password cannot be longer than six characters.

Note: Keep a safe record of the new password. If you forget or lose the password, the only way to access the system is to clear CMOS memory by holding down the **<End>** *key then powering on to reboot the system.*

Auto-Detect Hard Disks

If your system has an IDE hard drive, you can use this utility to detect its parameters and automatically enter them into the Standard CMOS Setup. This utility will autodetect up to four IDE devices.

Save Settings and Exit

Select this item to save the values entered during the current session and then exit the BIOS setup program.

Exit Without Saving

Select this item to exit the BIOS setup program without saving the values which has been entered during the current session.

Chapter 4
SoftWare Driver

The CD came with the package is free of charge and includes all our products' drivers and the path of this mainboard's drivers and utilities are listed below:

- ❑ IDE Driver for Windows 95/98
  (CD-ROM): \IDE\M598\Win95&98\Setup.exe
- ❑ VGA Driver Path
  (CD-ROM): \VGA\M598vga
- ❑ USB Driver for Windows 95
  (CD-ROM): \USB\Eusbsupp\Usbsupp.exe
  (CD-ROM): \USB\Cusbsupp\Cusbsupp.exe (for Chinese Windows95)
- ❑ PCI Sound Driver Path
  (CD-ROM): \SOUND\PCISoundPro\
- ❑ BIOS Update Utility
  (CD-ROM): \UTILITY\AMIF806a.exe
- ❑ Bundled PC-cillin Path
  (CD-ROM): \PC-cillin\