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M599, Version 1.2
December 1998

Contents

Chapter 1
Introduction

This mainboard is a **SiS530 100MHz** highly integrated high-performance mainboard based on the advanced Socket 7 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 a **Super 7 chipset with 3D video inside** which is built with a high performance 64-bit **3D AGP Graphics Accelerator** with 8MB frame buffer. It 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). The ACPI provides more energy saving features for the OSPM(OS Direct Power Management) function.

The mainboard has an onboard **3D Sound Pro** to meet PC98' specifications for 3D Multimedia systems, and built-in **Hardware Monitor** circuit to monitor CPU/Chasis fan speeds/voltages/temperature with SiS System Hardware Monitor. And the mainboard BIOS provides Trend's **ChipAwayVirus** to ensure the entire boot process virus free.

Key Features

The advanced features of the mainboard including:

- ❑ Supports P54C/P55C (MMX) Pentium® CPUs and Cyrix/IBM 6x86L/6x86MX/MII, AMD K6/K6-2, IDT C6 CPUs with Frequency at 60/66/75/83/95/100MHz;
- ❑ Provides **CPU Plug and Play** features for faster and easier CPU installation;
- ❑ Memory:
  - — provides 3 DIMMs for 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
- ❑ Expansion slots:
  - — provides 3 PCI, and 1 ISA slots;
- ❑ Onboard 2 IDE ports:
  - — supports 4 IDE devices maximum
  - — supports PIO, PCI Bus Master and Ultra DMA/33/66 operation modes
- ❑ ATX Power Supply:
  - — provides ATX power connectors and features of ATX power
  - — provides Power Button/Suspend Switch and **Keyboard Power On** functions
  - — Alarm Wake Up and LAN/Modem Wake Up functions
- ❑ Onboard 64-bit 3D VGA Graphics Accelerator:
  - — supports AGP Ver1.0 specification and 66/133MHz
  - — supports high performance 64-bit GUI accelerator with excellent video playback capability

- — maximum 8MB frame buffer share from the system memory
- — high resolution graphic modes up to 1600x1200

❑ Onboard 3D SoundPro Features:

- — supports both Sound Blaster 16/Pro and Windows Sound System
- — supports **HRTF 3D** Positional Audio technology
- — provides drivers for Windows Direct Sound 3D
- — provides drivers for 3D games that use Aureal software interface
- — built-in Digital Audio Interface (**SPDIF**) In/Out
- — built-in software Wave-Table Synthesizer
- — full Duplex 16-bit CODEC with filters
- — 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, including:

- — 1 floppy port with 1 MB/s transferring rate
- — 2 serial ports with 16550 compatible with Fast UART
- — 1 parallel port with EPP and ECP capabilities
- — 2 USB ports and PS/2 keyboard/mouse ports
- — 1 IR interface

❑ Built-in Hardware Monitor circuit:

- — detects CPU/Chasis fan speed and temperature
- — displays actual current voltages

❑ BIOS:

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

- Bundled:
  - **AMI Desktop Client Manager** detects abnormal condition through the network link or self core
  - **PC-cillin98** (OEM) provides automatic virus protection for Windows 95/98 and the Internet

- Dimension:
  - Micro ATX Form Factor, 24.4cm (L) x 22cm (W)

Unpacking the Mainboard & Static Electricity Precautions

This Mainboard package contains the following items:

1. This Mainboard and the Device Driver
2. AT cables
3. This User's Guide
4. SPDIF/IN cable
5. VGA cable/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 JP5 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

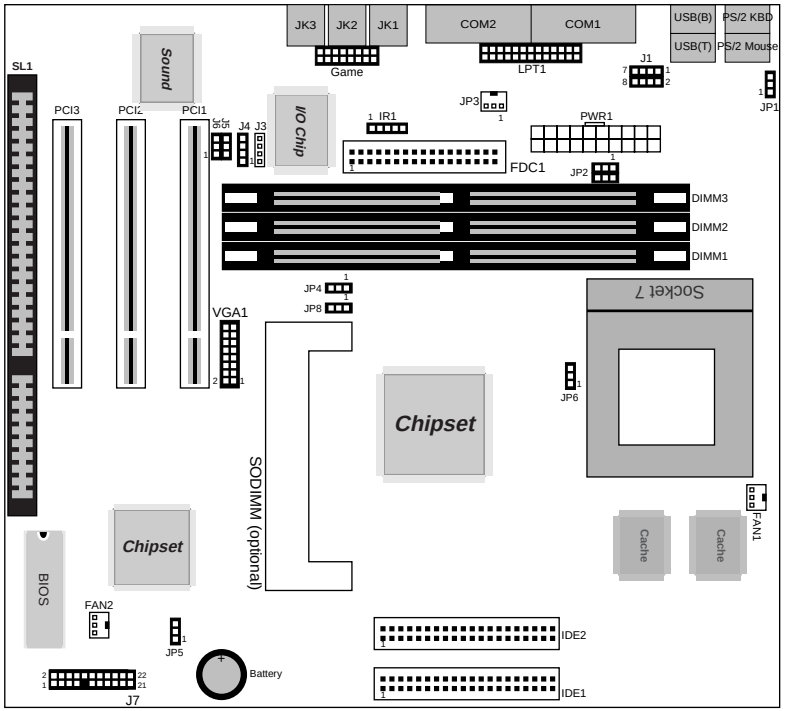


Figure 2–1. Mainboard Component Locations

CPU Installation

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 "CPU Plug and Play Setup". Choose the correct CPU speed to match your CPU 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 Slot1.
3. Clear CMOS RAM (see Jumper Settings) or hold down the <Insert> key then power on the system.
4. After power on the system, then enter the BIOS Setup section to set the new CPU speed.

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

Memory Installation

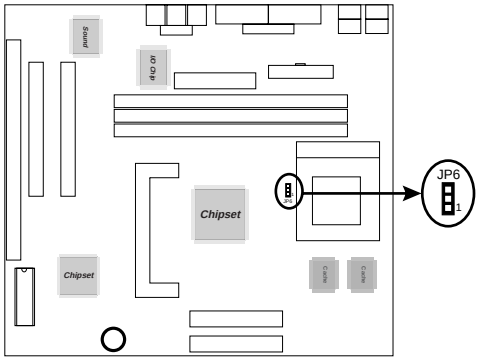
The mainboard lets you add up to 768MB of system memory through 3 DIMM sockets on the board, that is divided into 3 banks: Bank 0, Bank 1, and Bank 2, which supports the following memory configurations.

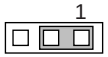
Bank	Memory Module
Bank 0 DIMM1	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
Bank 1 DIMM2	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
Bank 2 DIMM3	4MB, 8MB, 16MB, 32MB, 64MB, 128MB, 256MB
Total System Memory = Bank 0 + Bank 1 + Bank 2	

Notes: 1. Supports only SDRAM DIMM modules.
2. The SDRAM must be installed in DIMM1 first, if onboard VGA is being used.

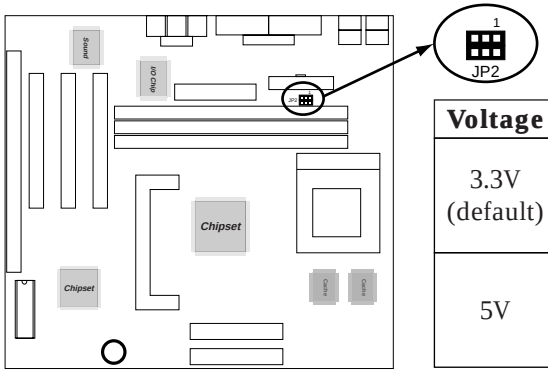
JP6 – SDRAM Type Selector

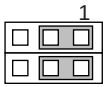
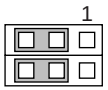
The speed of SDRAM has to be faster than 12ns ("–12" parts). When the speed of SDRAM does not meet the PC 100 specification (slower than 8ns), then user needs to set this jumper to the "PC66" position.



Description	JP6
PC66	
PC100 (default)	

JP2 – DIMM Voltage Selectors

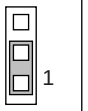
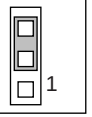


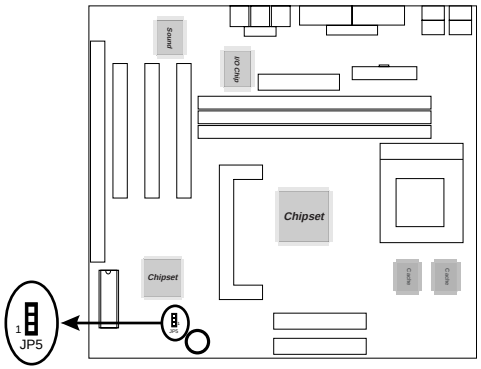
Voltage	JP2
3.3V (default)	
5V	

Jumper Settings

JP5 – 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 jumpers or memory modules.

Description	JP5
Normal	
Clear CMOS (while shipping)	

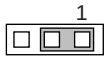


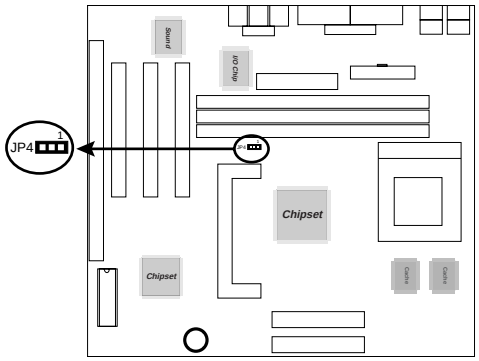
Note: 1. This jumper needs to be set on Normal Mode before using.

2. Turn off the system and unplug the power core when you need to clear the CMOS.

JP4 – VGA Memory Selector

This jumper is designed to select memory type for onboard VGA. The SO-DIMM socket is optional and the SO-DIMM module is needed when the user sets to the SO-DIMM position.

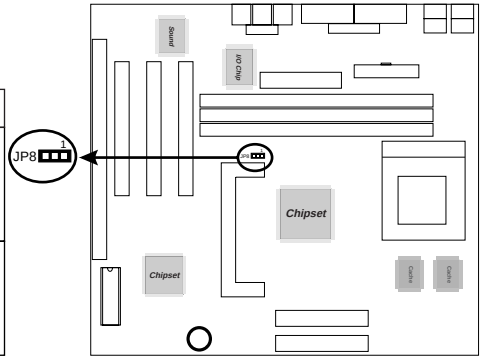
Description	JP4
SO-DIMM (optional)	
Share System (default)	



JP8 – Onboard VGA Selector

This jumper is designed to select onboard VGA.

Description	JP8
Disabled	
Enabled (default)	



ATX Functions & Connectors

This mainboard supports ATX power and ACPI specification. The ATX functions and connectors are described below.

Software Power-Off

Follow the steps below to use the "Software Power-Off Control" function in Windows 95/98 with ATX power supply.

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.

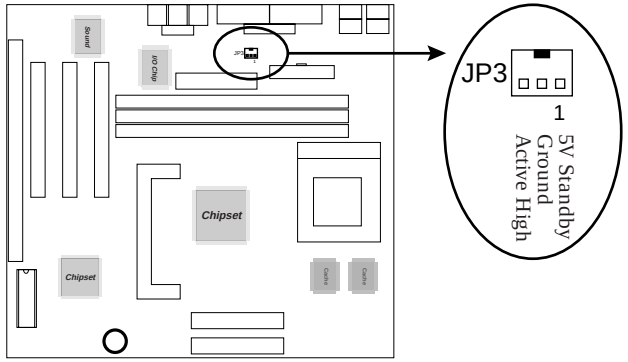
LAN/Modem Ring Wake-On

While in Soft-off/Suspend state, if an external LAN/ modem ring-up signal occurs, the system wakes up and can be remotely accessed. Make sure that the IRQ3 option in the Power Management Setup of the BIOS Setup section is set to "Monitor" and the Ring On Resume From OFF option is set to "Enabled".

User must connect LAN card to the following connector when using LAN Wake-On function.

JP3 – LAN Wake-On Connector

Connect this connector to the LAN card which supports ACPI spec.



Alarm Wake Up

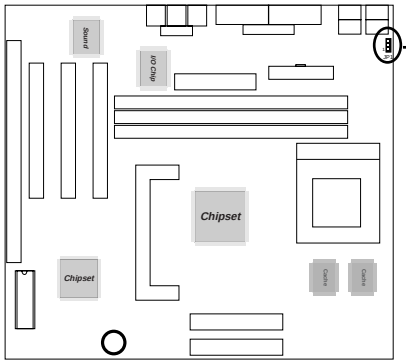
If you want to autoboot the system at a certain time, set the function of RTC Alarm time properly and the function of RTC Resume From Off option in the BIOS Setup section will be set to “Enabled.”

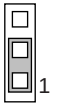
Keyboard Power-On

Press the hot key to power on the system and refer to the following jumper description—JP1—for more information

JP1 – Keyboard Power On Selector

This jumper is designed for the user to turn on the system by using the keyboard, and, the user must enter BIOS Setup to set the "Hot Key Resume From Off" option in the Power Management Setup. The sequence of the hot key of Keyboard Power On is <Ctrl>+<Alt>+<Back Space>.



Description	JP1
Enabled	
Disabled (default)	

Note: Make sure that the system power can provide 800mA on +5VSB(+5V Standby) signal before using Keyboard Power On function.

PWR1 – 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

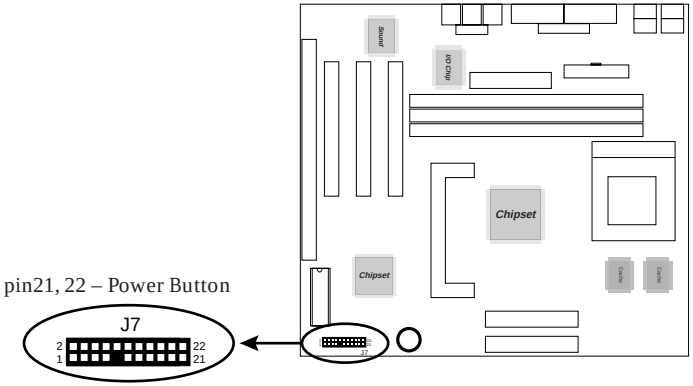
J7 (21, 22) – Power Button and Suspend Switch Connector

Attach the ATX Power Button cable to this connector.

In the AT power system, this connector will act as a suspend switch; and 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:

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

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



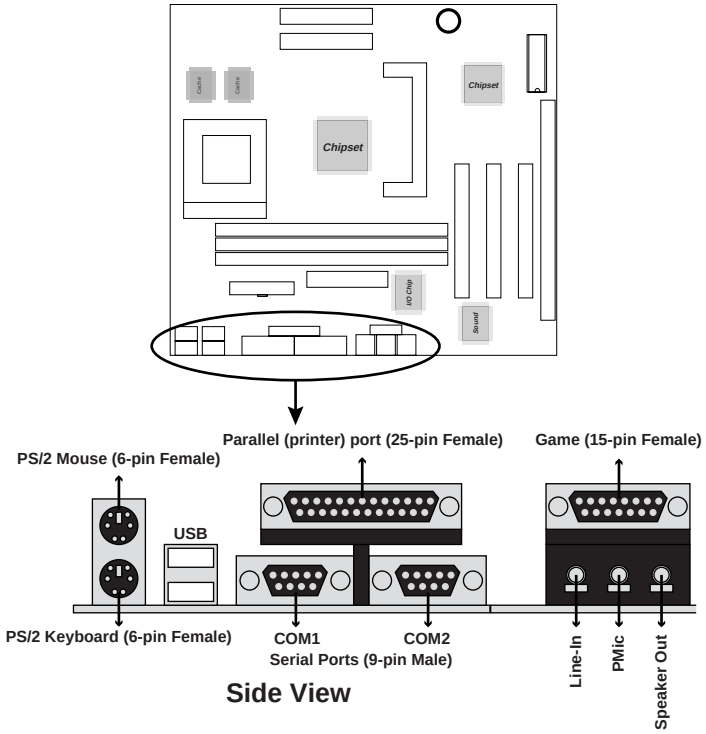
Connectors

Attach system components and case devices to the mainboard via the mainboard connectors. A description of each connector pins follows. See Figure 2–1 for the location of the connectors on the mainboard.

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

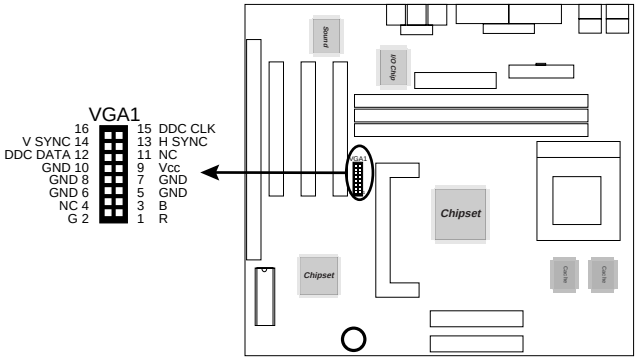
FDC1 – Floppy Disk Drive Connector

IDE1/IDE2 – Primary/Secondary IDE Connectors



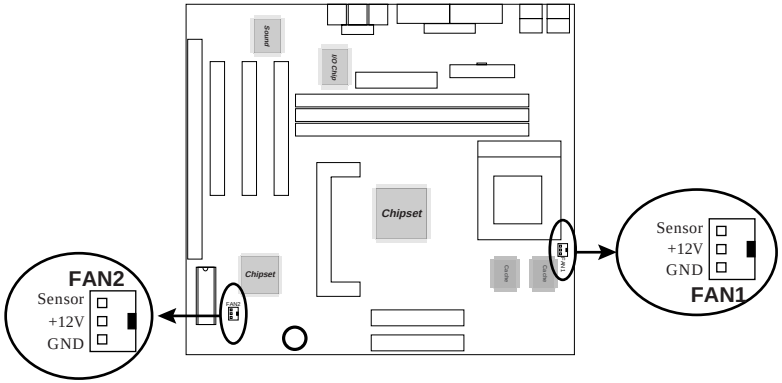
VGA1 – VGA Port Connector

Connect VGA cable/bracket to this connector.

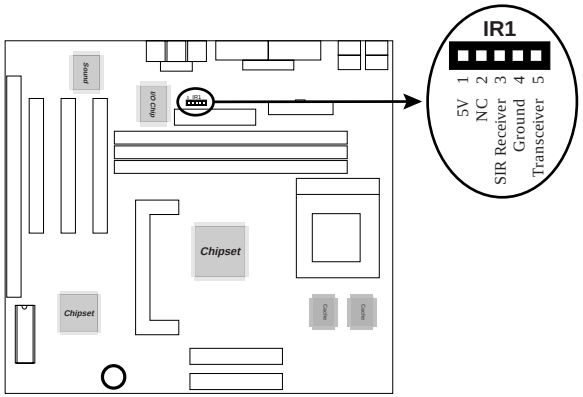


FAN1, FAN2 – CPU, SYS Fan Power Connectors

Connect CPU/System fan cables to FAN1/FAN2. See the following drawing for the locations on the mainboard.



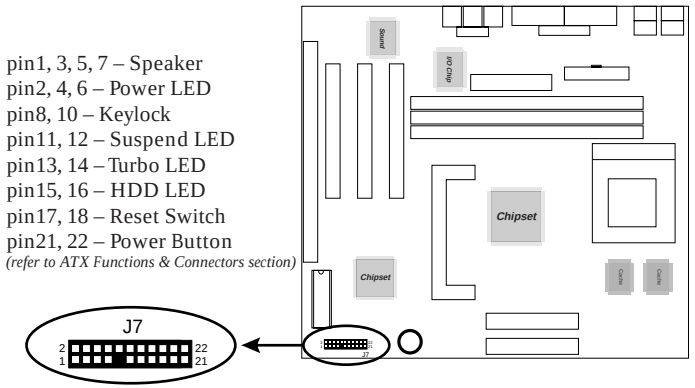
IR1 – Infrared Connector



Case Connectors: J7

This connector contains: Speaker, Power LED, Keylock, Suspend Blinking LED, Turbo LED, HDD LED, Reset Switch, and Power Button. Refer to the following drawing for the location on the mainboard.

pin1, 3, 5, 7 – Speaker
pin2, 4, 6 – Power LED
pin8, 10 – Keylock
pin11, 12 – Suspend LED
pin13, 14 – Turbo LED
pin15, 16 – HDD LED
pin17, 18 – Reset Switch
pin21, 22 – Power Button
(refer to ATX Functions & Connectors section)



J7 (2, 4, 6) – Power LED Connector

Keylock connector enables and disables the keyboard key-in function on the case.

Pin	Description
2	LED Output
4	N.C.
6	Ground

J7 (8, 10) – KeyLock Switch Connector

Setting	Description
Open	Nomral Mode
Close	Lock K/B

J7 (1, 3, 5, 7) – Speaker Connector

Pin	Description
1	+5V
3	N.C.
5	Ground
7	Data Out

J7 (11, 12) – Suspend Blinking LED Connector

Setting	Description
11	5V StandBy
12	Active Low

J7 (13, 14) – Turbo LED Connector

Pin	Description
13 (+)	Anode
14 (–)	Ground

J7 (15, 16) – HDD LED Connector

Pin	Description
15 (+)	+5V
16 (–)	Active Low

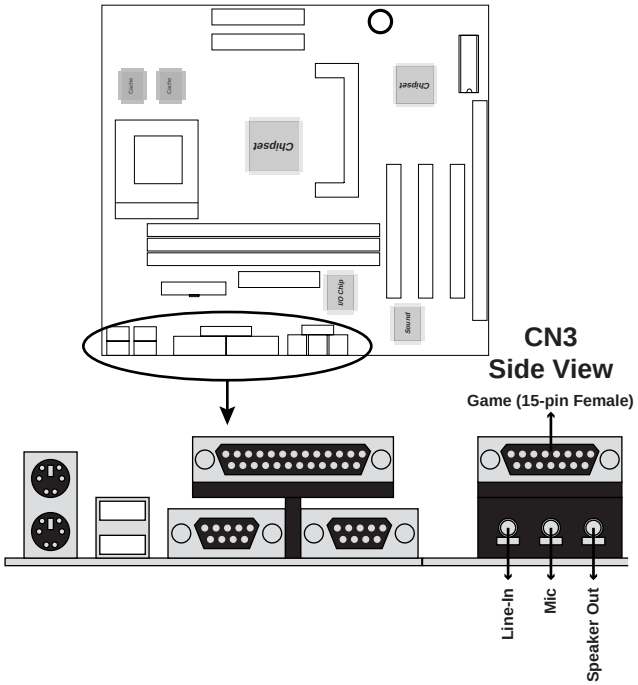
J7 (17, 18) – Reset Switch Connector

Setting	Description
Open	Normal Mode
Close	Reset System

Onboard Sound Pro

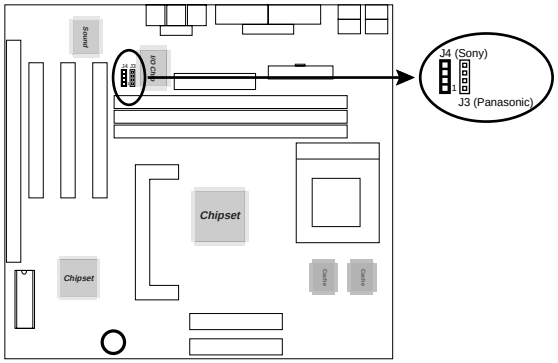
CN3 – Sound and Game

This connector provides Line-IN, MIC (Microphone), Line-Out (Speaker) signals for audio I/O, and Game Port (which is also used as the Joystick/MIDI port) signals.



J3/J4 – Analog Audio from CD-ROM

Connect from "AUDIO" output of the CD-ROM driver to these connectors. For Panasonic or compatible type of CD-ROM, connect to J3 (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).



J6 – Digital Audio OUT

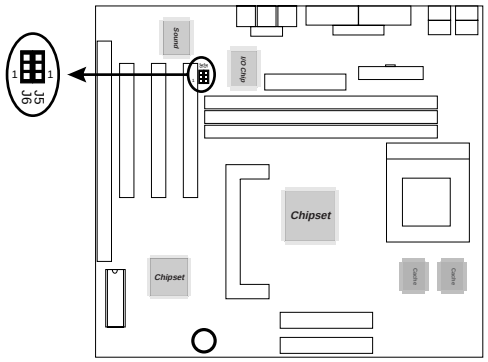
Connect to the external Audio Amplifier or Mini-Disk by using optional SPDIF/OUT bracket/cable set, selectable output signal level depends on the device needed. Connect to pin1 and pin2 for 5V signal level or pin3 and pin2 for 0.5V signal level.

Pin	Signals
1	5V Signal
2	Ground
3	0.5V Signal

J5 – Digital Audio IN

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. Connect to pin1 and pin2 for 5V signal level or pin3 and pin2 for 0.5V signal level.

Pin	Signals
1	5V Signal
2	Ground
3	0.5V Signal



Sound Pro Drivers Installation and Application

This section describes the procedures and proper applications which are recommended for this mainboard.

1. Before installing the Sound Pro drivers, make sure that the operating system has been installed, otherwise the Sound Pro may be detected as "Other Device" by the device manager of the OS.

2. After finishing the driver installation, select the MULTIMEDIA icon in the CONTROL PANEL. Select WSS (Windows Sound System) as the equipment option when playback, and select the SB16 (Sound Blaster 16) as the equipment option while recording, then click "OK" to confirm, to ensure that the chip works with full duplex applications.

3. Select MULTIMEDIA icon in the Control Panel to use Software Wave-Table drivers as MIDI output device. Select MIDI page, click on "SoftMIDI Driver", and click "OK" to confirm it.

4. A Windows application named is provided within Sound Pro drivers, which gives you the control over all audio functions through a user interface which is as simple as using a home stereo system. It is recommended that user uses the System Mixer in the Audio Rack to control the volume, select recording device, and be able to record again.

5. If the MIDI port is used as a control interface, the "MPU-401 MIDI" needs to be enabled through the MIDI device setting of Sound Pro Audio Rack.

6. Refer to the attached CD for more information on Sound Pro.

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.

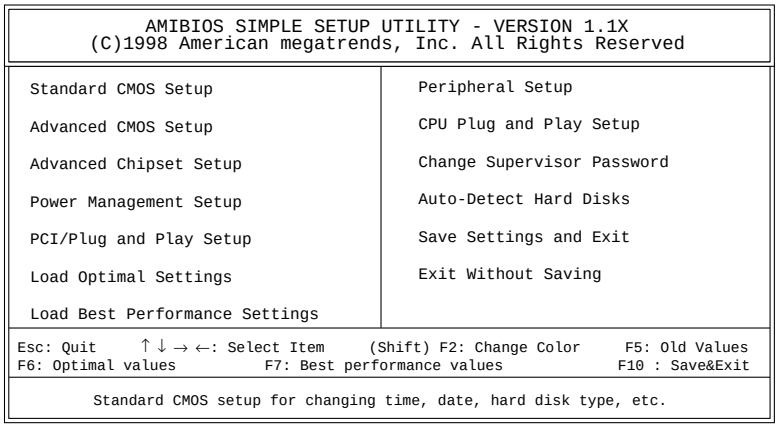
The system setup is also called CMOS setup. Normally, you need to run system setup if either the hardware is not identical with information contained in the CMOS RAM, or if the CMOS RAM has lost power.

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.

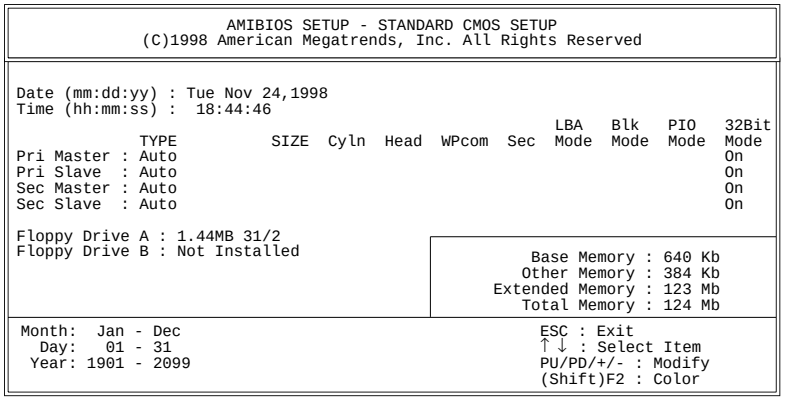
Load Best Performance Settings

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.



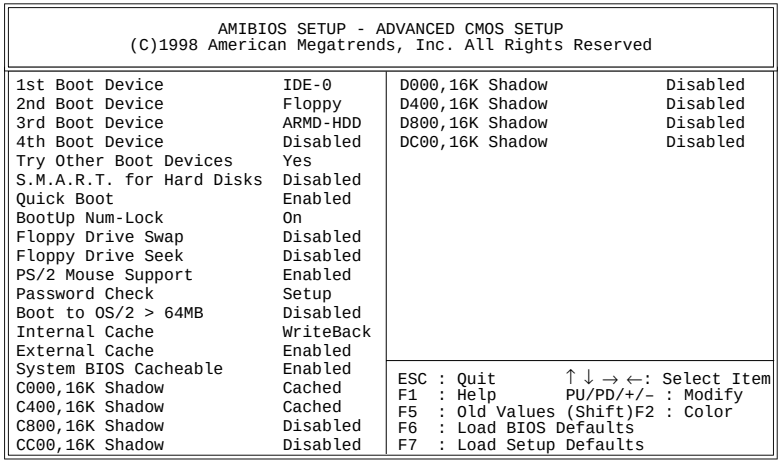
Date/Time Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.

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 WinBIOS Setup.

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

The BIOS password does not have to be enabled. The end user sets the password by choosing the Password icon on the WinBIOS Setup screen.

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.

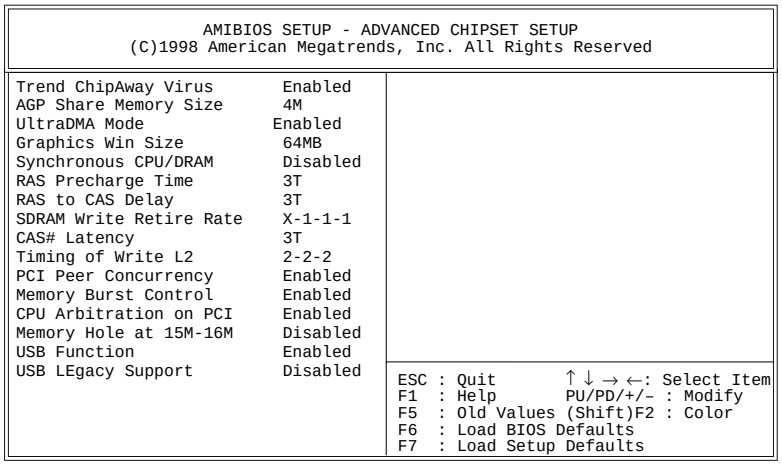
Internal Cache; External Cache Set these two options to enable or disable the internal/external cache.

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.

C000, 16K Shadow; **C400, 16K Shadow;** **C800, 16K Shadow;** **CC00, 16K Shadow;** **D000, 16K Shadow;** **D400, 16K Shadow;** **D800, 16K Shadow;** **DC00, 16K Shadow**	Disabled:	The specified ROM is not copied to RAM.
	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.
	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.

AGP Share Memory Size Set this option to select VGA frame buffer size that share from system memory.

UltraDMA Mode Set this option to enable the IDE transfer mode setting to UltraDMA mode.

Graphics Win Size Set this option to select the memory-mapped. Graphics data structures can reside in the Graphics Aperture. Use the default setting.

Synchronous CPU/DRAM Set this option to enable synchronous CPU with SDRAM or not. If synchronous mean that the frequancy speed of CPU & SDRAM is same. When CPU external Frequancy is 100MHz, then the speed of SDRAM should meet the PC100 spec. (8ns).

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.
SDRAM Write Retire Rate	Set this option to select the proper Write retire rate for SDRAM in burst mode/burst mode cycle.
CAS Latency	This option is designed to select the SDRAM CAS Latency.
Timing of Write L2	Set this option to select the proper timing of L2 Write.
PCI Peer Concurrency	When this option is enabled, the CPU to L2/DRAM accesses are allowed to perform concurrency with PCI to PCI accesses.
Memory Burst Control	Set this option to enable the Host bridge to generate memory burst cycles.
CPU Arbitration on PCI	When this option is disabled, allow the Host bridge to stop the CPU operation from program in not longer than the specified predefined timer then to serve PCI masters, and the minimum access time for CPU is not guaranteed.
Memory Hole at 15M–16M	Set this option to enable Memory Hole at 15MB~16MB memory address, that will be permit the memory management program under legacy operating system (ex. DOS) to control the block memory at 15MB~16MB.
USB Function	Set this option to enable the system BIOS USB (Universal serial Bus) functions.
USB Legacy Support	Set this option to enable the passive release on the USB (Universal Serial Bus).

Power Management Setup

Choosing the item from BIOS Setup main menu.

```
              AMIBIOS SETUP - POWER MANAGEMENT SETUP
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ACPI Aware O/S              Yes          RTC Alarm Minute          30
Power Management/APM        Enabled      RTC Alarm Second          30
Suspend Time Out (Minute)   Disabled
Display Activity            Ignore
IRQ3                        Both
IRQ4                        Both
IRQ5                        Ignore
IRQ7                        Both
IRQ9                        Ignore
IRQ10                       Ignore
IRQ11                       Ignore
IRQ13                       Ignore
IRQ14                       Ignore
IRQ15                       Ignore
Power Button Function       Suspend
Hot Key Resume From Off     Disabled     ESC : Quit       ↑ ↓ → ←: Select Item
Ring On Resume From Off     Disabled     F1  : Help       PU/PD/+/- : Modify
RTC Alarm Resume From Off   Disabled     F5  : Old Values (Shift)F2 : Color
 RTC Alarm Date             15           F6  : Load BIOS Defaults
 RTC Alarm Hour             12           F7  : Load Setup Defaults
```

ACPI Aware O/S — Set this option to *Yes* to enable the ACPI specifications for OS.

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

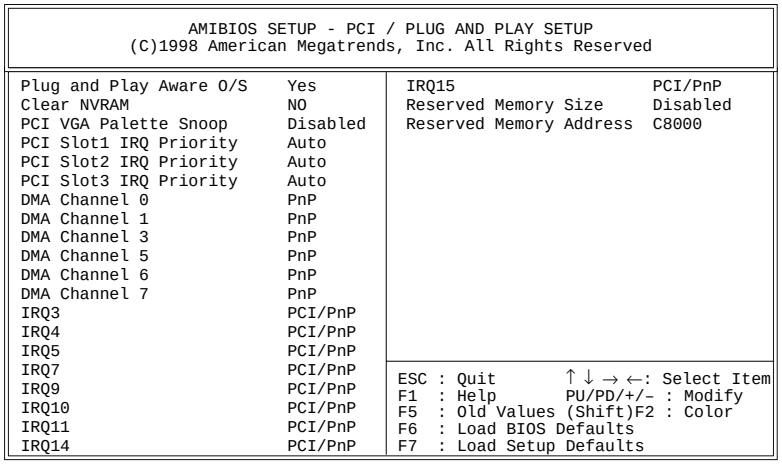
Suspend Time Out (Minute) — This option specified the length of system inactivity while in Full power on state. When this length of time expires, the computer enters the suspend mode.

Display Activity; IRQ [3~15] — When set to Yes or Both, 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.

Power Button Function	Set this option to specify the operation of Soft-Off by the Power Button.
Hot Key Resume From OFF	Set this option to enable the Keyboard Power On function, and the hot key combination is <Ctrl>+<Alt>+<Back Space>.
Ring On Resume From OFF	Set this option to enable the signals of Modem Ring/LAN to wake up the system from the Soft-Off/Suspend state.
RTC Alarm Resume From OFF	Set this option to enable the RTC Alarm to wake up the system which is Soft Off.
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.



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.

Clear NVRAM Set this option to *Yes* to clear NVRAM.

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.

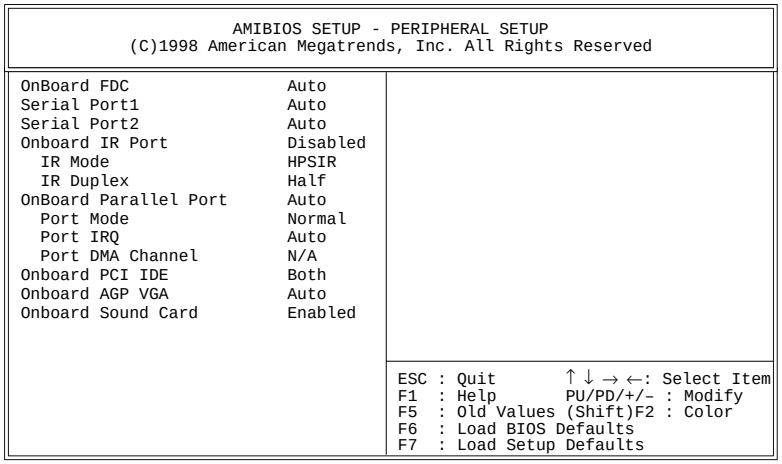
PCI Slot1/2/3 IRQ Priority Set these options to specify the priority IRQ to be used for any PCI devices installed in PCI expansion slots 1 through 3.

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	This option is designed to be used for reserving memory for the IO card.
Reserved Memory Address	This option is designed to be used for reserving 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.

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

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

OnBoard IR Port Set this option to enable the serial port2 redirected to support IR function.

IR Mode Set this option to select type of IR mode.

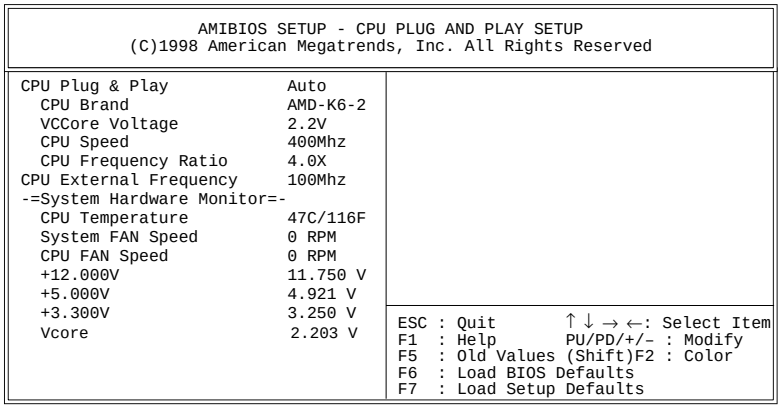
IR Duplex This option is to specify the Duplex mode for Infra Red interface.

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

Port Mode	Depends on the type of your external device which connects to this port to choose Normal, EPP, or ECP mode.
Port IRQ	This option specifies IRQ to parallel port.
Port DMA Channel	This option is only available if the setting of the Parallel Port Mode option is EPP/ECP.
Onboard PCI IDE	This option specifies the channel used by the IDE controller on the motherboard.
Onboard AGP VGA	Set this option to enable the onboard AGP VGA.
Onboard Sound Card	Set this option to enable the onboard Sound Pro.

CPU Plug and Play 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 external frequencies 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 Frequency Ratio Select a correct CPU ratio to match your CPU. The ratio includes 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, etc.

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

–= System Hardware Monitor =–

CPU Temperature, These options are displayed only to show the
System Fan Speed; status of the system hardware.
+12.000V; +5.000V;
+3.300V; Vcore

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
  (CD-ROM): \IDE\M599\Win95\Setup.exe
- ❑ VGA Driver Path
  (CD-ROM): \VGA\M599vga
- ❑ USB Driver for Windows 95
  (CD-ROM): \USB\Eusbsupp\Usbsupp.exe;
  (CD-ROM): \USB\Cusbsupp\Cusbsupp.exe (for Chinese Windows95)
- ❑ Sound Driver Path
  (CD-ROM): \SOUND\SOUNDPRO\New\
- ❑ BIOS Update Utility
  (CD-ROM): \UTILITY\AMIFL807.exe
- ❑ Bundled PC-cillin Path
  (CD-ROM): \PC-cillin\