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# Chapter 1

## Introduction

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This mainboard is a high-performance mainboard based on the advanced Pentium™ microprocessor and featuring PCI Local Bus and the high-end chipset. The mainboard offers a high degree of flexibility in configuration and is fully IBM PC/AT compatible.

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## Key Features

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The advanced features of this mainboard include:

- 66MHz Advanced Graphic Port
- Supports either P54C/P55C Pentium™ (MMX) CPUs with 321-pin ZIF socket and Cyrix/IBM 6x86L/6x86MX (M2), AMD K6, IDT C6 Processors with External Clock Speed at 50/55/60/66/75 MHz;
- Supports 3 banks of FP/EDO SIMM/DIMM and SDRAM DIMM expandable memory up to 384MB;
- Four 72-pin SIMM sockets and two 168-pin DIMM sockets;
- Supports 64M-bit (16Mx4, 8Mx8, 4Mx16) technology DRAM/SDRAM;
- Supports onboard 64-bit 512KB L2 cache;
- Provides dual 20-pin ATX power connector and AT 12-pin power connector, and ATX power support Modem Ring On & Suspend Switch;
- Supports both ACPI and Legacy PMU;
- 4 PCI Local Bus slots and 3 16-bits ISA Bus slots, all 4 PCI slots support master mode;
- Supports Ultra DMA/33, PCI Bus Master IDE interface onboard with 2 connectors which support 4 IDE devices in 2 channels; the PCI IDE controller supports PIO Mode 0 to Mode 4 and Ultra DMA/33 at maximum transfer rate of 33MB/s and Bus Master IDE DMA Mode 2;
- System BIOS supports 4 IDE hard disk drives which do not need device driver for S/W application and the capacity of each hard disk can be larger than 528MB and up to 8.4 GB;

- Onboard super Multi-I/O chip supports 2 serial ports with 16550 fast UART compatible, 1 parallel port with EPP and ECP capabilities, and one floppy disk drive interface;
- System BIOS supports Green feature function and "Plug & Play" Flash ROM;
- Supports PS/2 Mouse pin header;
- Supports ATX FORM CARD containing PS/2 Mouse, USB interface x 2, and Infrared connectors (optional);
- Supports embedded 64-bit VGA chip:
  - high performance 64-bit GUI accelerator with excellent video playback capability,
  - system memory shares up to 4MB with video buffer,
  - high resolution graphic modes 640x480/800x600/1024x768;
- Onboard Sound Pro supports:
  - Sound Blaster 16/PRO compatible with stereo voice up to 48KHz sampling rates,
  - HRTF 3D Positional Audio Technology,
  - Windows Sound System ver 2.0 compatible,
  - Windows 95/31 and DOS drivers supported,
  - Accelerates Direct Sound 3D in Win95,
  - Device supports: SB16, WSS, Game,
  - HSP-23 Wavetable synthesizer,
  - Full Duplex 16-bits CODEC with filters,
  - High quality 3D sound(ON/OFF controllable),
  - Auto switch the hardware between Windows Sound System and Sound Blaster16,
  - Stereo Mixer supports analog mixing form CD-Audio, Line-In, supports digital mixing from Voice, FM/Wave-table and digital CD-Audio,
  - Supports 44.1K digital audio(SPDIF)IN.

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## Unpacking & Static Electricity Precautions

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This mainboard package contains the following items:

1. The mainboard
2. The device driver for this mainboard
3. This user's guide
4. Sound & Game ribbon cables/bracket
5. ATX Form Card (optional)

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. Before handling the mainboard, ground yourself by grasping an unpainted portion of the system's metal chassis.
3. Frequently ground yourself to discharge any static electric charge that may build up in your body while working on installation and/or configuration.
4. Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.
5. Handle the mainboard by its edges or by the mounting bracket to avoid touching its components.
6. Check the mainboard for damage. If any integrated circuit appears loose, press carefully to seat it firmly in its socket.
7. Make sure that JP2 is set to Normal mode(pin 1-2)
8. Do not apply power if the mainboard appears damaged. If there is damage to the board contact your dealer immediately.



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## **Chapter 2**

# **Hardware Configuration**

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Before you install this 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.

Mainboard Component Locations

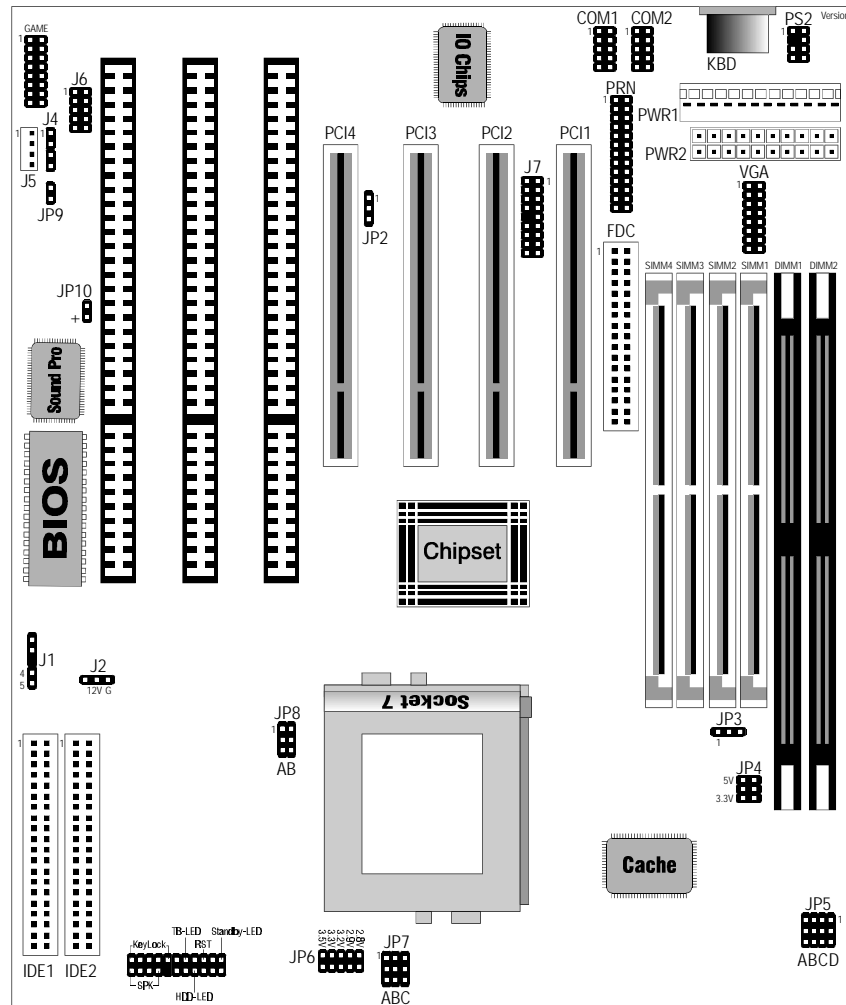


Figure 2-1. Mainboard Component Locations

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## Connectors

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

### PWR1 – Power Supply Connectors

The power supply connectors are two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connectors. Most of power supply have two leads and each lead has six wires. Two of which are black, orient the connectors so that the black wires are in the middle.

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

## PWR2 – ATX Style Power Connector

The ATX power supply provides a single 20-pin connector.

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

## Software Power-Off

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

1. Click the **START** button on the Windows 95 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.

## Modem Ring Power-On

While in Soft-off/Suspend state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. Make sure that the IRQ3 (COM2) option in the Power Management Setup menu is set to

Monitor and the Ring Active option is set to Enabled in the BIOS setup section (Refer to the Power Management section in Chapter 3.)

#### VGA - VGA Connector

Pin	Description	Pin	Description
1	R	9	Vcc
2	G	10	Ground
3	B	11	NC
4	NC	12	DDC DATA
5	Ground	13	H SYNC
6	Ground	14	V SYNC
7	Ground	15	DDC CLK
8	Ground		

COM1/2 - Serial Port #1/#2

PRN - Parallel Port

FDC - Floppy Disk Port

IDE1/IDE2 - Peimary/Secondary IDE Ports

PS2 - PS/2 Mouse Pin Header

KBD - Keybord Connector

J7 - ATX FORM CARD Connector  
(1-4,10-13) - 2 sets of Universal Serial Bus (USB)

USB		USB	
Pin	Description	Pin	Description
1	+5 VDC	10	+5 VDC
2	Data -	11	Data -
3	Data +	12	Data +
4	Ground	13	Ground

(5-6,15-16) - PS/2 Mouse

Pin	Description
5	+5 VDC
6	Mouse CLK
15	Mouse Data
16	Ground

(7-9,17-18) - Infrared

Pin	Description
7	Ground
8	Reserved
9	+5 VDC
17	IR In
18	IR Out

### J3 (KEY LOCK) – Keylock & Power LED Connector

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

Pin	Description
1	LED Output
2	N.C.
3	Ground
4	Keylock
5	Ground

### J3 (TB-LED) – Turbo LED Connector

Pin	Description
+	Anode
-	Ground

### J3 (RST) – Reset Switch Connector

Attach the Reset push button cable to this connector.

Setting	Description
Open	Normal Mode
Close	Reset System

**J3 (STANDBY LED) – Standby LED Connector**

Pin	Description
+	Anode
-	Ground

**J3 (SPK) – Speaker Connector**

Pin	Description
1	Data Out
2	N.C.
3	Ground
4	+5V

**J3 (HDD-LED) – HDD LED Connector**

Pin	Description
+	+5V
-	Active Low

**J2 (FAN-POW) – Fan Power**

Pin	Description
1	N.C.
2	+12V
3	Ground



### J1 ( 4-5 ) - Over-Ride Power Button Connector

When the system is off, push the power button to turn the system on.

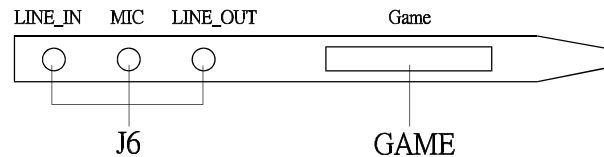
When the system is on, push the power button rapidly to switch the system to the Suspend mode, and, by push and hold the button for more than 4 seconds to turn the system completely off.

When the system is in the Suspend mode, push the power button rapidly to turn the system on.

### Sound Pro Connectors

J4/J5 - Analog Audio for Sony/Panasonic  
Connect to CD-ROM drive

J6 & GAME - Sound and Game Connectors  
Sound contains Line-in, MIC(Microphone), and Line-out(Speaker). Game connector is also the Joystic connector. Please connect J6 & GAME to the Sound & Game ribbon cable/bracket as follows:





JP10 - Digital Audio  
Connect to CD-ROM drive.(It depends on CD-ROM drive)

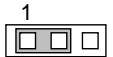

JP9 - Microphone Type Jumper  
Close: Special type  
Open: Normal type

## Jumper Settings



### JP2 – CMOS RAM Discharge Selector

Description	Setting
Normal Mode	
Clear CMOS	

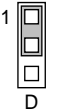
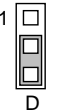
### JP3 – Internal VGA Option

Description	Setting
Disable	
Enable	

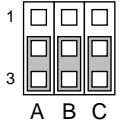
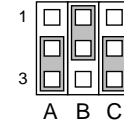
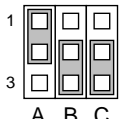
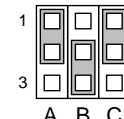
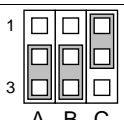
### JP4 – DIMM Voltage Selectors\*

Voltage Selectors	Setting
5V	
3.3V	

### JP5(D) – PCI Clock Jumper\*\*

Description	Setting
CPU CLK/2	
33 MHz	

### JP5 (A, B, C) – CPU External Clock Selectors

External Clock	JP5 (A, B, C) Settings	External Clock	JP5 (A, B, C) Settings
50MHz		66MHz	
55MHz		75MHz	
60MHz			

**JP6 – CPU Core Voltage Selectors\*\*\***

Core Vcc	Setting	Core Vcc	Setting
2.5V		3.2V	
2.8V		3.3V	
2.9V		3.5V	

**JP7 (A, B) – CPU Internal Clock Speed Selectors**

IDT	Intel	Cyrix	AMD	JP7
Reserved	1.5X/ 3.5X	Reserved	K5 1.5X/ K6 3.5X	
Reserved	2.0X	2.0X	Reserved	
Reserved	2.5X	M2 2.5X	2.5X	
C6 3.0X	3.0X	M2 3.0X	K6 3.0X	

**JP8 – CPU Type Selector**

CPU	Setting	Example
P54C (Single Voltage)		Intel P54C, IDT C6
P55C (Dual Voltage)		Intel MMX™, AMD K6, IBM/Cyrix 6x86L/6x86MX(M2)

\* JP4 must be set to 3.3V position for all synchronous DRAM.

\*\* JP5(D) must be set to 2-3 position only when the system is running at 75MHz.

\*\*\* JP6 must be set to 3.5V position for P54C (Single Voltage) CPUs.

## Memory Installation

The mainboard lets you add up to 384MB of system memory through SIMM and DIMM sockets on the board. Four SIMM sockets on the mainboard are divided into two banks: Bank 0 and Bank 2. Each bank consists of two 72-pin SIMM modules, and two 168-pin DIMM sockets are divided into two banks: Bank 0 and Bank 1. The mainboard supports the following memory configurations, however, **the manufacture does not recommend the mixed mode DRAM usage.**

SIMM 1&2	SIMM 3&4	DIMM1	DIMM2	Total Memory
4MB x 2	None	None	None	8MB
8MB x 2	None	None	None	16MB
16MB x 2	None	None	None	32MB
32MB x 2	None	None	None	64MB
None	None	8MB	None	8MB
None	None	16MB	None	16MB
None	None	32MB	None	32MB
None	None	64MB	None	64MB
4MB x 2	4MB x 2	None	None	16MB
8MB x 2	8MB x 2	None	None	32MB
16MB x 2	16MB x 2	None	None	64MB
32MB x 2	32MB x 2	None	None	128MB
None	None	8MB	8MB	16MB
None	None	16MB	16MB	32MB
None	None	32MB	32MB	64MB
None	None	64MB	64MB	128MB
4MB x 2	None	None	8MB	16MB
8MB x 2	None	None	16MB	32MB
16MB x 2	None	None	32MB	64MB
32MB x 2	None	None	64MB	128MB

<b>SIMM 1&amp;2</b>	<b>SIMM 3&amp;4</b>	<b>DIMM1</b>	<b>DIMM2</b>	<b>Total Memory</b>
8MB x 2	None	None	8MB	24MB
8MB x 2	None	None	16MB	32MB
8MB x 2	None	None	32MB	48MB
8MB x 2	None	None	64MB	80MB
16MB x 2	4MB x 2	None	None	40MB
16MB x 2	8MB x 2	None	None	48MB
16MB x 2	16MB x 2	None	None	64MB
16MB x 2	32MB x 2	None	None	96MB
16MB x 2	None	None	8MB	40MB
16MB x 2	None	None	16MB	48MB
16MB x 2	None	None	32MB	64MB
16MB x 2	None	None	64MB	96MB
32MB x 2	4MB x 2	None	None	72MB
32MB x 2	8MB x 2	None	None	80MB
32MB x 2	16MB x 2	None	None	96MB
32MB x 2	32MB x 2	None	None	128MB
32MB x 2	None	None	8MB	72MB
32MB x 2	None	None	16MB	80MB
32MB x 2	None	None	32MB	96MB
32MB x 2	None	None	64MB	128MB
None	32MB x 2	8MB	8MB	80MB
None	32MB x 2	16MB	16MB	96MB
None	32MB x 2	32MB	32MB	128MB
None	32MB x 2	64MB	64MB	192MB
64MB x 2	None	None	8MB	136MB
64MB x 2	None	None	16MB	144MB
64MB x 2	None	None	32MB	160MB
64MB x 2	None	None	64MB	192MB

SIMM 1&2	SIMM 3&4	DIMM1	DIMM2	Total Memory
64MB x 2	4MB x 2	None	None	136MB
64MB x 2	8MB x 2	None	None	144MB
64MB x 2	16MB x 2	None	None	160MB
64MB x 2	32MB x 2	None	None	192MB
None	64MB x 2	8MB	8MB	144MB
None	64MB x 2	16MB	16MB	160MB
None	64MB x 2	32MB	32MB	192MB
None	64MB x 2	64MB	64MB	256MB
128MB x 2	None	None	8MB	264MB
128MB x 2	None	None	16MB	272MB
128MB x 2	None	None	32MB	288MB
128MB x 2	None	None	64MB	320MB
128MB x 2	4MB x 2	None	None	264MB
128MB x 2	8MB x 2	None	None	272MB
128MB x 2	16MB x 2	None	None	288MB
128MB x 2	32MB x 2	None	None	320MB
None	128MB x 2	8MB	8MB	272MB
None	128MB x 2	16MB	16MB	288MB
None	128MB x 2	32MB	32MB	320MB
None	128MB x 2	64MB	64MB	384MB

- Notes:
1. Bank 0 (SIMM 1 & 2 and DIMM1) these two types of DRAM module can not be used at the same time.
  2. If internal VGA is being used, the DRAM must be installed in Bank 0 (SIMM 1 & 2 or DIMM1).
  3. The speed of all SIMMs and DIMM modules have to be faster than 70ns.
  4. Use 2 DRAM types: Fast Page Mode or Extend DATA Out (EDO) for SIMM socket.
  5. Use 3 DRAM types: Fast Page Mode, Extend Data Out (EDO), or Synchronous DRAM (SDRAM) for DIMM socket.
  6. Hold down the <Home> key for more than 5 seconds before powering on the system, if using the SDRAM of 2T CAS Latency.

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## Chapter 3

### BIOS Setup

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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: When installing newer BIOS into this mainboard, JP2 must be set to clear CMOS position for a moment then set back to Normal Mode or hold down the <End> key then power on to reboot the system.*

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## Entering BIOS Setup

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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:

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.03  
(C)1997 American megatrends, Inc. All Rights Reserved

Standard CMOS Setup	Peripheral Setup
Advanced CMOS Setup	Change User Password
Advanced Chipset Setup	Auto-Detect Hard Disks
Power Management Setup	Save Settings and Exit
PCI/Plug and Play Setup	Exit Without Saving
Load Optional Settings	
Load Best Performance Settings	
Esc: Quit    ↑ ↓ → ←: Select Item    (Shift) F2: Change Color    F5: Old Values	
F6: Optional values    F7: Best performance values    F10 : Save&Exit	
Standard CMOS setup for changing time, date, hard disk type, etc.	

3. Use your keyboard to select option. Modify system parameters to reflect system options.

## Default

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Every option in BIOS Setup contains two default values: Load Optional Settings and Load Best Performance Settings.

### Load Optional Settings

This option provides the optimum system settings for all devices and system features.



### Load Best Performance Settings

This option provides the best performance settings for all devices and system features, but, the manufacturer is not guaranty that the system will run smoothly overnight for these devices.

## BIOS Setup

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### Standard CMOS Setup

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

<b>Date/Time</b>	Select the Date or Time option to change the date or time. The current date and time are displayed. Enter new values on proper position.
<b>Pri Master</b> <b>Pri Slave</b> <b>Sec Master</b> <b>Sec Slave</b>	Choose these options to configure the hard disk drive named in the option. When you click on an option, the following parameters are listed: <b>Type</b> , <b>LBA Mode</b> , <b>Blk Mode</b> , <b>PIO Mode</b> , and <b>32Bit Mode</b> . All parameters relate to IDE drives except <b>Type</b> . Choose the <b>Type</b> parameter and select <b>Auto BIOS</b> automatically detects the IDE drive parameters and displays them. Choose on <b>LBA Mode</b> and choose <i>On</i> to enable support for IDE drives with capacities greater than 528MB. Click on <b>Blk Mode</b> and choose <i>On</i> to support IDE drives that use <b>Blk Mode</b> . Click on <b>32Bit Mode</b> and click on <i>On</i> to support IDE drives that permit 32-bit accesses.

<b>Floppy Drive A, B</b>	Choose the Floppy Drive A or B option to specify the floppy drive type. The settings are 360KB 5 <sup>1</sup> / <sub>4</sub> ", 1.2MB 5 <sup>1</sup> / <sub>4</sub> ", 720KB 3 <sup>1</sup> / <sub>2</sub> ", 1.44MB 3 <sup>1</sup> / <sub>2</sub> ", or 2.88MB 3 <sup>1</sup> / <sub>2</sub> ".
<b>Boot Sector Virus Protection</b>	This option protects the boot sector and partition table of your hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and continue or use a bootable none virus floppy disk to reboot and check your system. The default setting is "Disabled". This setting is recommended because that conflicts with new operating systems.

## Advanced CMOS Setup

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

<b>1st Boot Device</b>	Set these options to select the boot sequence from different booting devices.
<b>2nd Boot Device</b>	
<b>3rd Boot Device</b>	
<b>4th Boot Device</b>	
<b>Try Other Boot Devices</b>	Set this option to enable other booting devices.
<b>S.M.A.R.T for Hard Disks</b>	Select this option to enable or disable the S.M.A.R.T. function of HDDs.
<b>Quick Boot</b>	Set this option to <i>Enabled</i> to permit BIOS to boot within 5 seconds.

<b>Boot Up Num-Lock</b>	When this option is set to <i>On</i> , BIOS turns off the <i>Num Lock</i> key when the system is powered on so the end user can use the arrow keys on both the numeric keypad and the keyboard.
<b>Floppy Drive Swap</b>	Set this option to <i>Enabled</i> to specify that floppy drives A: and B: are swapped.
<b>Floppy Drive Seek</b>	Choose <i>Enabled</i> or <i>Disabled</i> . <i>Disabled</i> provides a fast boot and reduces the possibility of damaging the heads.
<b>PS/2 Mouse Support</b>	When this option is set to <i>Enabled</i> , BIOS supports a PS/2-type mouse.
<b>Primary Display</b>	This option configures the primary display subsystem in the computer. The settings are <i>Mono (monochrome) Absent</i> , <i>VGA/EGA</i> , <i>CGA 40x50</i> , or <i>CGA 80x25</i> .
<b>Password Check</b>	<p>This option specifies the type of BIOS password protection that is implemented. The settings are:</p> <p>Setup: The password prompt appears only when an end user attempts to run BIOS Setup.</p> <p>Always: A password prompt appears every time the computer is powered on or rebooted.</p> <p>The BIOS password does not have to be enabled. The end user sets the password by choosing the Change Supervisor Password option on the BIOS Setup main menu.</p>
<b>Internal Cache</b>	This option selects to enable the internal cache or not.

<b>External Cache</b>	This option selects to enable External Cache or not.
<b>System BIOS Cacheable</b>	BIOS always copies the system BIOS from ROM to RAM for faster execution. Set this option to <i>Enabled</i> to permit the contents of the F0000h RAM memory segment to be written to and read from cache memory.
<b>C000, 16K Shadow; C400, 16K Shadow; C800, 16K Shadow; CC00, 16K Shadow; D000, 16K Shadow; D400, 16K Shadow; D800, 16K Shadow; DC00, 16K Shadow</b>	<p><b>Enabled:</b> 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.</p> <p><b>Cached:</b> The contents of the ROM area are copied from ROM to RAM for faster execution.</p>

### Advanced Chipset Setup

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

<b>DRAM Auto Configuration</b>	Set this option to enable the Auto Configuration DRAM Timing and Refresh Cycle Time by CPU CLK functions.
<b>SDRAM Access Time</b>	There are 3 optional timings for this item: 10ns, 12ns, 15ns. Depends on the type of SDRAM you use to select the proper setting.

<b>EDO DRAM Access Time; FP DRAM Access Time</b>	Choose either 60ns or 70ns. Depends on the type of DRAM you use to select the proper setting.
<b>Refresh Cycle Time</b>	Choose 0, 4, 8, or 12 cycles. Based on the DRAM specification to select the proper setting. 12 Cycles is recommend if the system has a playback application and the internal VGA runs on a high resolution monitor (above 800x600).
<b>OnBoard USB</b>	Set this option to <i>Enabled</i> to enable USB (Universal Serial Bus) functions on Chipset.
<b>USB Function for DOS</b>	Set this option to <i>Enabled</i> to enable the system BIOS USB (Universal Serial Bus) functions for DOS.
<b>OnChip VGA</b>	Set this option to <i>Enabled</i> to enable the VGA feature on the chipset.
<b>VGA Shared Memory Size</b>	When OnChip VGA is set to <i>Enabled</i> , the system must share memory with VGA.
<b>VGA Frequency</b>	Set this option to select the frequency of VGA shared memory. Choose 55MHz for Fast Page Mode DRAM and 65MHz for EDO DRAM. SDRAM will be synchronized with the system CLK.

## Power Management Setup

Choosing the Power Management Setup from the BIOS Setup main menu.

<b>Power Management/ APM</b>	Set this option to enable power management features and APM (Advanced Power Management).
<b>Green PC Monitor Power State</b>	This option specifies the power state that the green PC-compliant video monitor enters when BIOS places it in a power savings state after the specified period of display inactivity has expired.
<b>Video Power Down Mode</b>	This option specifies the power conserving state that the VESA VGA video subsystem enters after the specified period of display inactivity has expired.
<b>Hard Disk Power Down Mode</b>	This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired.
<b>Standby Time out (Minute)</b>	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.
<b>Suspend Time out (Minute)</b>	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.
<b>Slow Clock Ratio</b>	This option specifies the ratio of system clock while in standby state.
<b>Ring Active</b>	Set this option to enable the Modem Ring to wake up the system which is in the Green mode.

**IRQ3 (COM2/COM4);  
IRQ4 (COM1/COM3);  
IRQ5 (LPT2);  
IRQ7 (LPT1);  
IRQ9; IRQ10;  
IRQ11;  
IRQ12 (PS2  
Mouse);  
IRQ13 (Math  
Coprocessor);  
IRQ14; IRQ15**

When set to *Monitor*, these options enable the event monitoring on the specified hardware interrupt request line. If set to *Monitor* and the computer is in a power saving state, BIOS watches for any activities on the specified IRQ line. The computer will enter the full on power state if any activity occurs.

**Soft Off by Power Button** This option specifies the “operation” of Soft Off by Power Button.

## PCI/PnP Setup

Choose the PCI/Plug and Play Setup 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.

**PCI Latency Timer (PCI Clocks)** This option specifies the latency timings (in PCI clocks) for all PCI devices on the PCI bus.

**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 (0 is disabled).

- Offboard PCI IDE Card** This option specifies if an offboard PCI IDE controller adapter card is installed in the computer. You must specify the PCI expansion slot on the motherboard where the offboard PCI IDE controller is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disabled. If an offboard PCI IDE controller adapter card is installed in the computer, you must also set the **Offboard PCI IDE Primary IRQ** and **Offboard PCI IDE Secondary IRQ** options.
- Offboard PCI IDE Primary IRQ;**  
**Offboard PCI IDE Secondary IRQ** These options specify the PCI interrupt used by the Primary (or secondary) IDE channel on the offboard PCI IDE controller.
- Assign IRQ to PCI VGA Card** Set this option to *Enabled* to assign IRQ to PCI VGA Card.
- PCI Slot 1/2/3/4 IRQ Priority;** These options specify the priority IRQ to be used for any PCI devices installed in PCI expansion slots 1 through 4.
- 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, 12, 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. However, IRQ12 option will be disappeared while PS/2 Mouse Support option in the Advanced CMOS Setup is set to *Enabled*.



## Peripheral Setup

Choose the Peripheral Setup from the BIOS Setup main menu.

- Onboard FDC** This option enables the FDC (Floppy Drive Controller) on the motherboard.
- 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.
- Serial Port Mode** This option specifies the serial port mode.  
Normal: The normal serial port mode is being used.  
HPSIR/ASKIR: The serial port will be redirected to support IR function when this option is set to HPSIR or ASKIR.
- On-board Parallel Port** This option specifies the base I/O port address of the parallel port on the motherboard.
- Parallel Port Mode** This option specifies the parallel port mode.  
Normal: The normal parallel port mode is used.  
EPP: The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.

Parallel Port Mode (Continued)	ECP: The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 MB per second. ECP provides symmetric bidirectional communication.
Parallel Port DMA Channel	This option is only available if the setting of the Parallel Port Mode option is ECP
Parallel Port IRQ	This option specifies IRQ to parallel port.
Onboard PCI IDE	This option specifies the channel used by the IDE controller on the motherboard.
Primary Master/ Slave Prefetch; Secondary Master/ Slave Prefetch	These options are available if the setting of the Onboard IDE is not set to Disabled.
Onboard Sound Pro	Set this option to enable the Sound Pro functions.

### Change User Password

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

Note: Keep a record of your new password in a safe place.

If you forget or lose the password, the only way to access the system is to discharge CMOS RAM by using jumper JP2.

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**Auto-Detect Hard Disks**

If your system has an IDE hard drive, you can use this item to detect its parameters and automatically enter them into the Standard CMOS Setup. This item is set up to auto detect as many as four IDE devices.

**Save Settings and Exit**

Select this item to save the values modified 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 modified during the current session.

## Appendix

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### A. VGA Memory Size/Clock

This function determines the amount of DRAM to be used by the VGA accelerator. The video memory required for each resolution are shown in the table below:

Resolution	1MB	2MB	3MB	4MB
640x480x8	✓	✓	✓	✓
640x480x24	✓	✓	✓	✓
800x600x4	✓	✓	✓	✓
800x600x8	✓	✓	✓	✓
800x600x16	✓	✓	✓	✓
* 800x600x24	✓	✓	✓	✓
1024x768x4	✓	✓	✓	✓
1024x768x8	✓	✓	✓	✓
1024x768x16		✓	✓	✓
* 1024x768x24			✓	✓

\* If you want run on the high resolution VGA mode that depend on your DRAM speed. The EDO 60ns DRAM or higher is recommend.

### B. Supported Drivers

1. IDE - (CD-ROM):\Ide\M571\Win95 -- for Windows 95  
(CD-ROM):\Ide\M571\NT -- for Windows NT
2. VGA - (CD-ROM):\Vga\M571\Win95 -- for Windows 95  
(CD-ROM):\Vga\M571\Winnt -- for Windows NT
3. USB support - (CD-ROM):\Usb
4. Sound Pro - (CD-ROM):\Sound\Soundpro\Driver