4PX266A1E

User's Manual Version 1.0

The information presented in this publication has been made carefully for reliability; however, no responsibility is assumed for inaccuracies. Specifications are subject to change without notice.

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Introduction

System Overview

This manual was written to help you start using this product as quickly and smoothly as possbile. Inside, you will find the answers to solve most of the problems. In order for this reference material to be of greatest use, refer to the "expanded table of contents" to find relevant topics. This board provides a total PC solution by incorporating the System , I/O , and PCI IDE. The mainboard support single Intel P4 processors base PC ATX system, PCI Local Bus, ACR Bus, and AGP Bus to upgrades your system performance.

It is ideal for multi-tasking and fully supports MS-DOS, Windows, Windows NT , Windows ME, Windows 2000, Novell, OS/2, Windows95/98, Windows 98SE, Windows XP, UNIX, SCO UNIX etc.

This manual also explains how to install the mainboard for operation, and how to setup your CMOS configuration with the BIOS setup program.

Package Contents

- ◆ HDD UDMA66/100 Cable.
- ◆ FDD Cable.
- ◆ Flash Memory Written for BIOS Update.
- ◆ USB2 Cable **(Optional)**.
- ◆ Fully Setup Driver CD built in Utilities.
- ◆ This Manual.

1.Motherboard Description

1.1 Features

1.1.1 Hardware

CPU
- 400/533MHz System Interface speed.
- Single Socket 478 for Intel P4™ up to 2.5GHz or higher (Northwood Processor).
- Support Intel Netburst™ Micro-architecture.

DDR SDRAM Memory
- Supports 64/128/256....MB DDR module socket.
- Supports Synchronous DDR SDRAM(2.5V).
- Supports a maximum memory size of 3GB with DDR SDRAM.

AGP Speed
- Supports 1X/2X/4X AGP Bus.
- Only support AGP 66 MHz/1.5V for 4X device.

Chipset
- VIA P4X266E North Bridge.
- VIA VT8233 South Bridge.

Bus Slots
- Provide one ACR slot for ISA side and AGP slot.
- Five 32-bit PCI bus.

Universal Serial Bus
- Supports two back Universal Serial Bus(USB)Ports and four front Universal serial Bus(USB)Ports.

BIOS
- The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.
- BIOS support CD-ROM, SCSI, LAN BOOT, Temperature sensor, LAN,Modem, Alarm Bus CLK setup with BIOS.

Hardware Monitor Function
- CPU Fan Speed Monitor.
- CPU Temperature Monitor.
- System Voltage Monitor.

Flash Memory
- Support 2MB flash memory.
- Support ESCD Function.

IDE Built-in On Board
- Supports four IDE devices.
- Supports PIO Mode 5, Master Mode, high performance hard disk drives.
- Support Ultra DMA 33/66/100 Bus Master Mode.
- Supports IDE interface with CD-ROM.
- Supports high capacity hard disk drives.
- Support LBA mode.

PCI-Based AC 97 Digital Audio Processor
- AC 97 2.1 interface.
- 16 channels of high-quality sample rate conversion.
- 16x8 channel digital mixer.
- Stereo 10 band graphic equalizer.
- Sound Blaster and Sound Blaster Pro emulation.

WOL & WOM (Wake On LAN & Wake On Modem)
- Supports system power up from LAN & Modem ring up .

Smart Panel (optional)
- Supports BIOS Port 80H POST Code output to debug LED.

I/O Built-in On Board

- ◆ Supports one multi-mode Parallel Port.
  (1)Standard & Bidirection Parallel Port
  (2)Enhanced Parallel Port (EPP)
  (3)Extended Capabilities Port
- ◆ Supports two serial ports, 16550 UART.
- ◆ Supports one Infrared transmission (IR).
- ◆ Supports PS/2 mouse and PS/2 Keyboard.
- ◆ Supports ATX 4 pin power connector +12V in.
- ◆ Supports AUX 6 pin power connector.
- ◆ Supports 360KB, 720KB, 1.2MB, 1.44MB, and 2.88MB floppy disk drivers.

1.1.2 Software

BIOS

- ◆ AWARD legal BIOS.
- ◆ Supports APM 1.2.
- ◆ Supports USB Function.
- ◆ Supports ACPI

Operation System

Supporting the highest performance for MS-DOS,Windows, Windows NT, Windows 2000, Windows ME, Novell, OS/2, Windows 95/98, Windows 98 SE, Windows XP, UNIX, SCO UNIX etc.

1.2 Motherboard Installation

1.2.1 Motherboard Layout
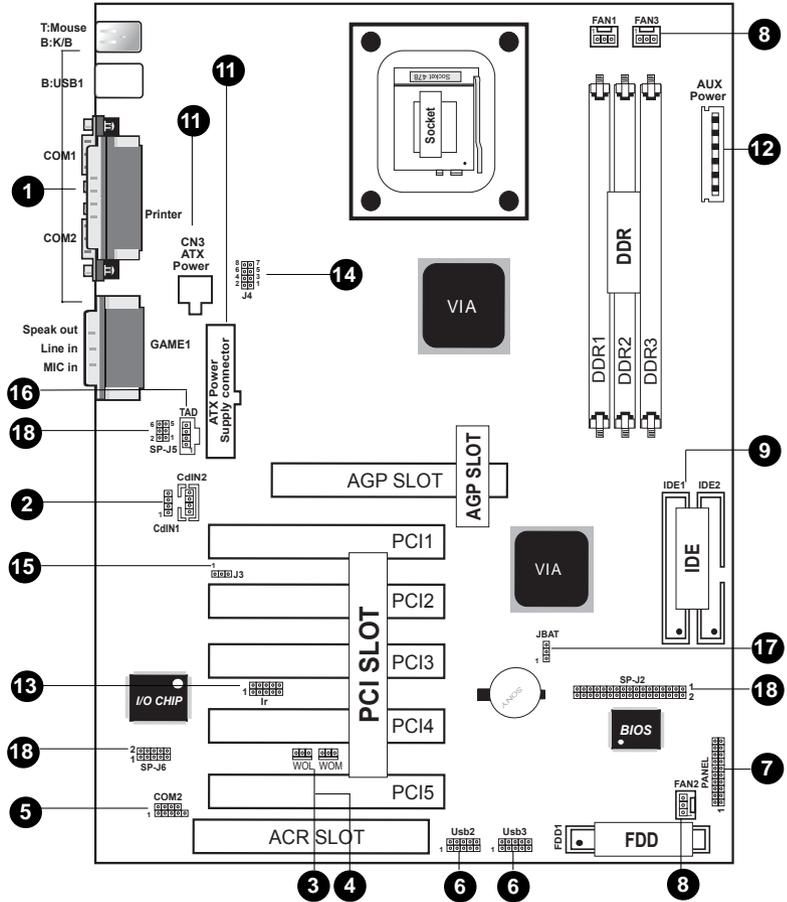
1.3 Motherboard Connectors

1.Back Panel I/O Connectors

2.CD Audio-In Connector

3.Wake-On-LAN Connector

4.Wake-On-Modem Connector

5.Front COM2 Connector

6.Front USB2/USB3 Connector

7.Front Panel Connector

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16.Telephone in Connector(TAD)

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18.Smart Panel Function(SP-J2/SP-J6/SP-J5)(option)

1.3.1 Front Panel Connector (PANEL)

```
┌─────────────────────────────────────────┐
│           PANEL Connector                │
│                                          │
│          SPEAKER     HD_LED   RESET       │
│        ┌─────┐      │+    │+   +20        │
│     2  │+                                 │
│       ⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙                       │
│       ⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙                       │
│     1 │ │+          │+   │+    │19         │
│       PW_BN  PW_LED        EXTSMI  S3_LED  │
└─────────────────────────────────────────┘
```
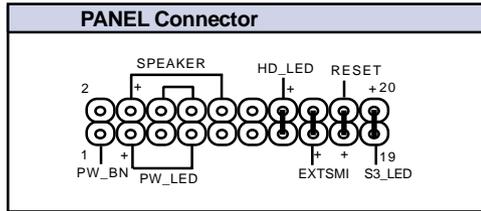
ATX Power Switch (PW_BN)

The system power is controlled by a momentary switch connected to this lead. Pushing the button once will switch the system ON. The system power LED lights when the system's power is on .

Power LED Lead (PW_LED)

The system power LED lights when the system power is on.

Speaker Connector (SPEAKER)

An offboard speaker can be installed onto the motherboard as a manufacturing option. An offboard speaker can be connected to the motherboard at the front pannel connector. The speaker (onboard or offboard) provides error beep code information during the Power Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

Hard Drive LED Connector (HD_LED)

This connector supplies power to the cabinet IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

S3_LED Lead (S3_LED)

The system S3_LED lights when the system suspend is on the S3 modle.

Reset Switch Lead (RESET)

The connector can be connected to a momentary SPST type switch that is normally open. When the switch is closed, the motherboard resets and runs the POST.

SMI Suspend Switch Lead (EXTSMI)

This allows the user to manually place the system into a suspend mode of Green mode. System activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch" instead since it does not have a function. SMI is activated when it detects a short. It may require one or two pushes depending on the position of the switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SMI Suspend Switch Lead cannot wake-up the system). If you want to use this connector, the "Suspend Switch" in the Power Management Setup of the BIOS SOFTWARE section should be on the default setting of Enable.

1.3.2 Floppy Disk Connector (FDD)

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives.

1.3.3 Hard Disk Connectors (IDE1/IDE2)

These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper settings. BIOS now supports SCSI device or IDE CD-ROM boot up (see "HDD Sequence SCSI/IDE First" & "Boot Sequence" in the BIOS Features Setup of the BIOS SOFTWARE) (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).

1.3.4 ATX 4-pin/ATX 20-pin/AUX 6-pin Power Connector (CN3/ATX/AUX)

  ♦ This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported on this motherboard. This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board.
  ♦ ATX 4-pin power connector only support +12V voltage.

Pin CN3	Signal	Pin CN3	Signal
1	GND	2	GND
3	+12V	4	+12V

Pin ATX	Signal	Pin ATX	Signal
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS-ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW-OK	18	NC
9	5V_SB	19	5V
10	12V	20	5V

Pin AUX	Signal	Pin AUX	Signal
1	GND	4	+3.3V
2	GND	5	+3.3V
3	GND	6	+5V

1.3.5 Infrared Connector (IR)

After the IrDA interface is configured, files can be transferred from or to portable devices such as laptops, PDAs, and printers using application software.

1.4 Back Panel Connectors
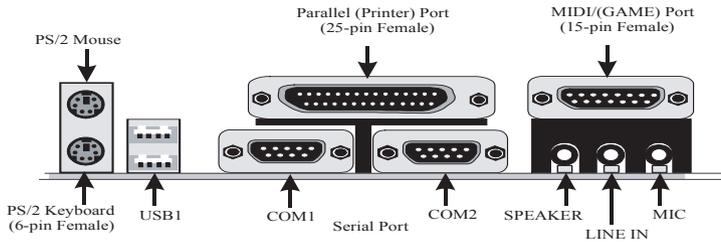
1.4.1 PS/2 Mouse /Keyboard CONN.

The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector.

1.4.2 USB Connectors: USB1

The motherboard provides a OHCI(Open Host Controller Interface)Universal Serial Bus Roots for attaching USB devices such as a keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.

Pin	Signal
1	+5V_SB
2	USBP0-(USBP1-)
3	USBP0+(USBP1+)
4	GND

1 2 3 4

USB 1

Front Two USB Connectors: USB2 & USB3
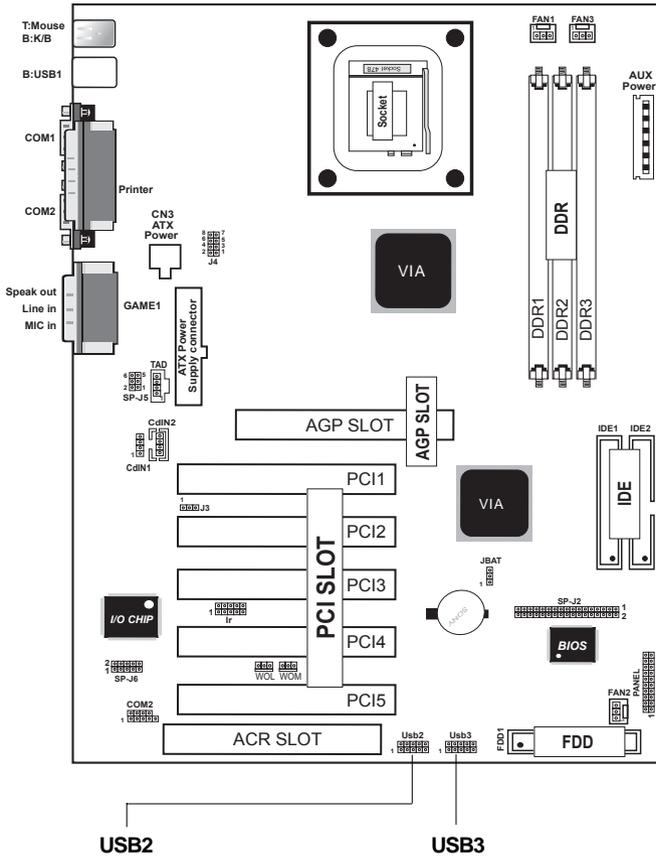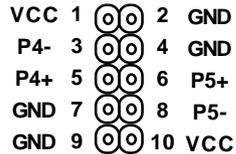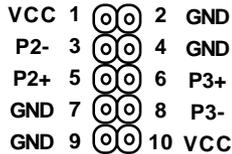
1.5 Serial and Parallel Interface Ports

This system equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

The Serial Interfaces: COM1/COM2

The serial interface port is sometimes refered to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer system. If you wish to transfer the contents of your hard disk to another system it can be accomplished by using each machine's serial port.
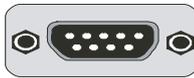
COM1/COM2   **COM2**

The serial port on this system has one 9-pin connector. Some older computer systems and peripherals used to be equipped with only a 25-pin connector. If you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

Signal	DB9 Pin	DB25 Pin
DCD	1	8
RX	2	3
TX	3	2
DTR	4	20
GND	5	7
DSR	6	6
RTS	7	4
CTS	8	5
RI	9	22
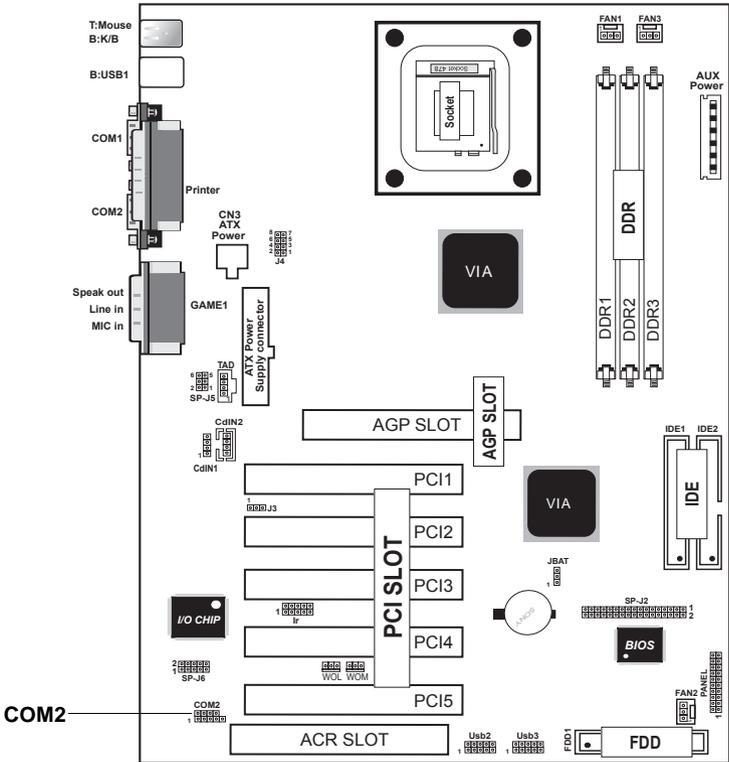
Parallel Interface Port

Unlike serial ports, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB 25 connector(see the picture below).
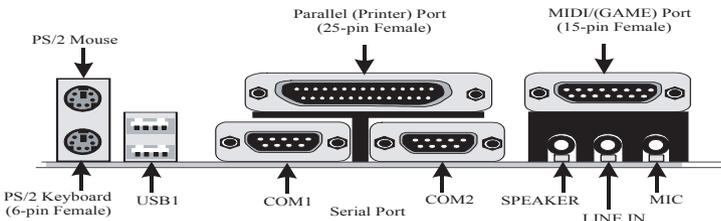
1.6 CPU Installation

1.6.1 CPU Installation Procedure: Socket 478

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

2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge then insert the CPU.

3. Press the lever down to complete the installation.

4. Make sure the spec of the heatsink is good enough.
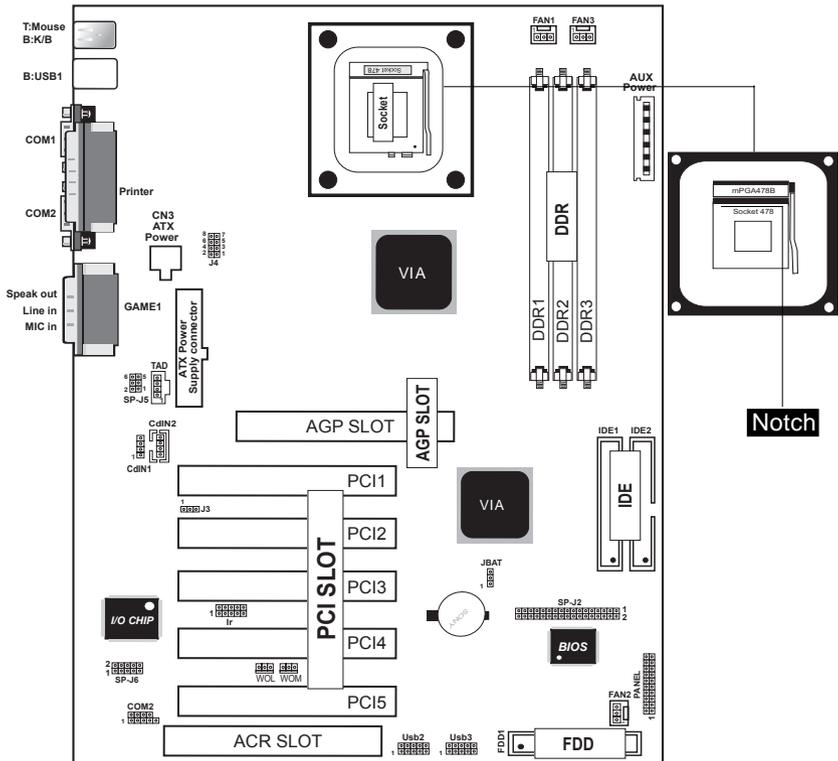
1.6.2 CPU Clock Frequency Setting: J4

Overclocking is operating a CPU/Processor beyond its specified frequency. J4 jumper is used for the CPU Front Side Bus Frequencies from 66MHz to 133MHz.
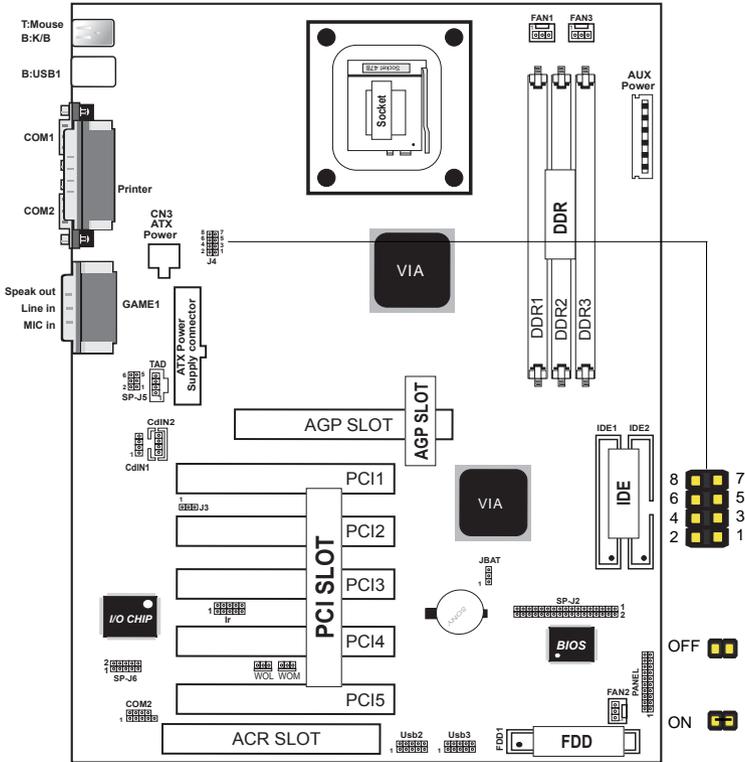
1-2	3-4	5-6	7-8	CPU(MHz)	PCI(MHz)
ON	ON	OFF	OFF	66	33.3
OFF	ON	OFF	OFF	100	33.3
OFF	OFF	OFF	OFF	133	33.3

NOTE:
Intel CPU doesn't support overclock and overvcore, therefore, we don't recommend you to use these funtions, without it , you might damage your CPU very possibily**.**

1.7 Jumper Setting

A jumper has two or more pins that can be covered by a plastic jumper cap, allowing you to select different system options.
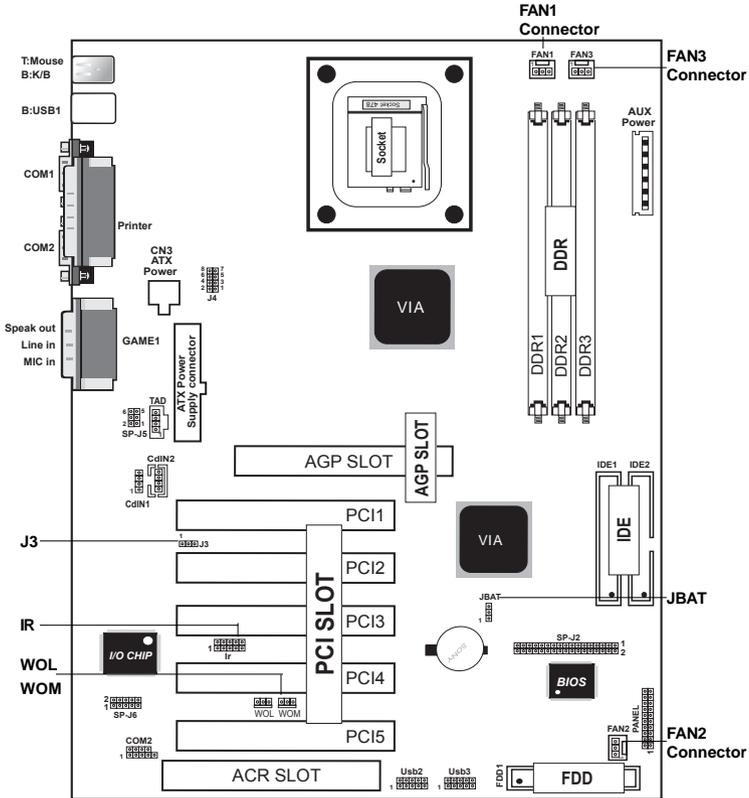
1.7.1 CPU/System Fan Connector: Fan1

Pin	Assignment
1	FAN1
2	+12VDC
3	Ground

1.7.1 CPU/System Fan Connector: Fan2

Pin	Assignment
1	FAN2
2	+12VDC
3	Ground

1.7.1 CPU/System Fan Connector: Fan3
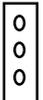
Pin	Assignment
1	NC
2	+12VDC
3	Ground

1.7.2 Wake-On Modem Header: WOM

Pin	Assignment
1	5V_SB
2	Ground
3	Signal

1.7.3 Wake-On LAN Header: WOL

Pin	Assignment
1	5V_SB
2	Ground
3	Signal

1.7.4 AC'97 CODEC Selection: J3

Pin	Assignment
1-2	On board CODEC is used (Default)
2-3	ACR Slot is used (for ISA side)

1.7.5 CMOS Function Selection: JBAT

Pin	Assignment
1-2	Normal (Default)
2-3	Clear CMOS

NOTE:
 Please follow the procedure below to clear CMOS data.
(1)Remove the AC power line.
(2)JBAT(2-3)Closed.
(3)Wait five seconds.
(4)JBAT(1-2) Closed.
(5)AC Power on.
(6)Reset your desired password or clear CMOS data.

1.7.6 IrDA Connector: IR

Pin	Assignment	Pin	Assignment
1	+5V	2	
3		4	CIRRX
5	IRRX1	6	5VSB
7	GND	8	
9	IRTX	10	

1.8 DDR SDRAM Installation

1.8.1 DDR

DDR SDRAM Access Time: 2.5V Unbuffered PC1600/ PC2100
Type required.
DDR SDRAM Type: 64MB, 128MB, 256MB, 512MB, 1GB D DR
Module. (184 pin)

Bank	Memory module
DDR 1	64MB, 128MB, 256MB, 512MB, 1GB
(Bank 0-1)	184 pin, 2.5V DDR SDRAM
DDR 2	64MB, 128MB, 256MB, 512MB, 1GB
(Bank 2-3)	184 pin , 2.5V DDR SDRAM
DDR 3	64MB, 128MB, 256MB, 512MB, 1GB
(Bank 4-5)	184 pin, 2.5V DDR SDRAM
	Total System Memory (Max 3GB)

1.8.2 How to install a DDR Module

1. The DDR socket has a "Plastic Safety Tab" and the
DDRmemory module has an asymmetrical notch", so the DDR
memory module can only fit into the slot in one direction.
2. Push the tabs out. Insert the DDR memory modules i n t o
the socket at a 90-degree angle then push down vertically so
that it will fit into place.
3. The Mounting Holes and plastic tabs should fit over the edge
and hold the DDR memory modules in place.
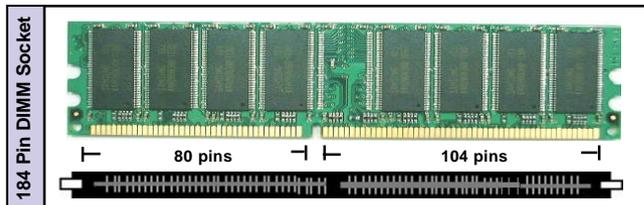
1.9 Audio Subsystem
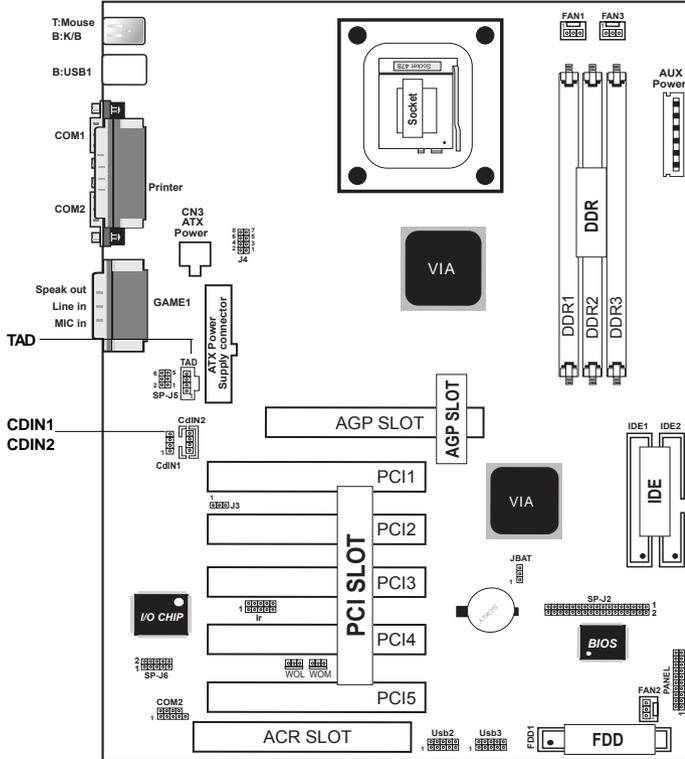
1.9.1 CD Audio-in Connectors: CDIN1/CDIN2

Pin CDIN1	Assignment		Pin CDIN2	Assignment
1	CD-L		1	GND
2	GND		2	CD-L
3	GND		3	GND
4	CD-R		4	CD-R

1.9.2 Telephone in Connector: TAD

Pin TAD	Assignment
1	PHONE
2	GND
3	GND
4	MONO_OUT

1.10 Smart Panel Onboard Connector
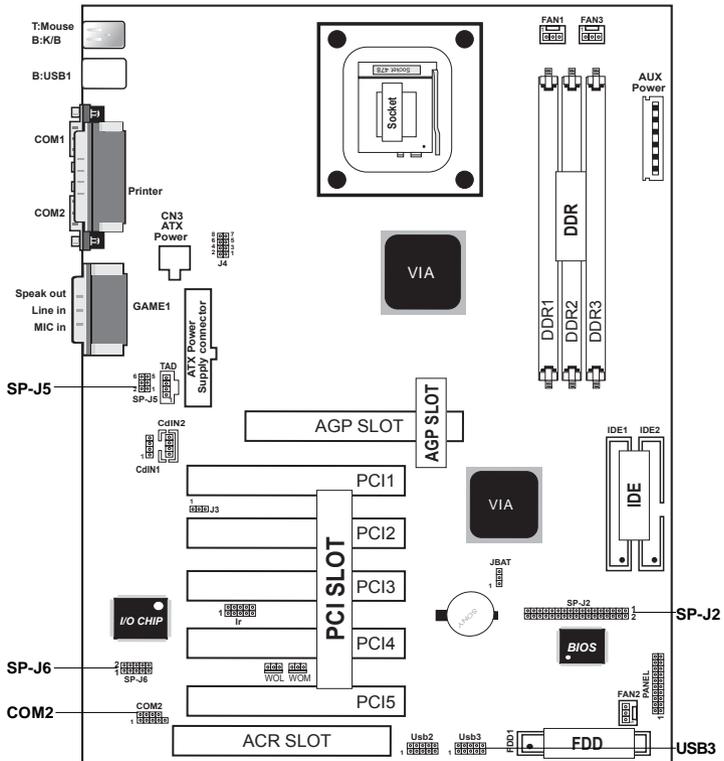
Note:
The motherboard provides the pin leads for Smart Panel. If you have POST Error Code or Smart Panel function requirement, please refer to Smart Panel (SPPX266A) manual.

1.10.1 Port 80 Debug Function: SP-J6

For Smart Panel connector(SP-J6) to M/B (SP-J6).

Pin SP-J6	Assignment	Pin SP-J6	Assignment
1	ERD4	2	ERD0
3	ERD5	4	ERD1
5	ERD6	6	ERD2
7	ERD7	8	ERD3
9	GND	10	NC

1.10.2 Second BIOS Connector: SP-J2

For Smart Panel connector(SP-J2) to M/B (SP-J2).

Pin BIOS	Assignment	Pin BIOS	Assignment
1	XDD0	2	+5V
3	XDD1	4	XAA0
5	XDD2	6	XAA1
7	XDD3	8	XAA2
9	XDD4	10	XAA3
11	XDD5	12	XAA4
13	XDD6	14	XAA5
15	XDD7	16	XAA6
17	NC	18	DISABLE
19	ROMCS-	20	XAA7
21	MEMR-	22	XAA8
23	MEMW-	24	XAA9
25	SA18J	26	XAA10
27	XAA17	28	XAA11
29	XAA16	30	XAA12
31	XAA15	32	XAA13
33	NC	34	XAA14

1.10.3 AUX Line Connector: SP-J5

For Smart Panel connector(SP-J5) to M/B (SP-J5).

Pin SP-J5	Assignment	Pin SP-J5	Assignment
1	LINE_OUT_L	2	LINE_OUT_R
3	LINE_IN_L	4	LINE_IN_R
5	MIC_IN_L	6	NC

1.10.4 Front COM2 Header Conn.: COM2

For Smart Panel connector(SP-J7) to M/B (COM2).

Pin SP-J7	Assignment	Pin SP-J7	Assignment
1	DCD	2	RX
3	TX	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

1.10.5 Front USB3,4 Header Conn.: USB3

For Smart Panel connector(SP-J8) to M/B (USB3).

Pin SP-J8	Assignment	Pin SP-J8	Assignment
1	VCC	2	GND
3	P4-	4	GND
5	P4+	6	P5+
7	GND	8	P5-
9	GND	10	VCC

Chapter
2

BIOS Setup

Introduction

This manual discussed the Award Setup program built into the ROM BIOS. The Setup program allows the user to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the setup information when the power is turned off.

The Award BIOS installed in your computer system's ROM (Read Only Memory)is a custom version of an industry standard BIOS. This means that it supports Intel P4 processors input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Plug and Play Support

This AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD(Extended System Configuration Data) write is supported.

EPA Green PC Support

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

APM Support

This AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management(APM) specification.Power management features are implemented via the System Management Interrupt(SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.

PCI Bus Support

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect)local bus specification.

Support CPU

This AWARD BIOS supports the Intel P4 CPU processor.

Using Setup

In general, you use the arrow keys to highlight items, press <Enter>to select, use the <PgUp>and <PgDn>keys to change entries, press<F1>for help and press <Esc>to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

Note:
BIOS version 1.0 is for your reference only. If there is any change in BIOS version, please use the actual version on the BIOS.

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left(menu bar)
Right arrow	Move to the item on the right(menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+Key	Increase the numeric value or make changes
-Key	Decrease the numeric value or make changes
Esc Key	Main menu-Quit and not save changes into CMOS Status Page Setup Menu and option Page Setup Menu-Exit Current page and return to Main Menu
F1 Key	General help on Setup navigation keys.
F5 Key	Load previous values from CMOS
F6 Key	Load the fail-safe defaults from BIOS default table
F7 Key	Load the optimized defaults
F10 Key	Save all the CMOS changes and exit

2.1 Main Menu

Once you enter AWARD BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup function. Use the arrow keys to select among the items and press<Enter> to accept and   enter the sub-menu.

"WARNING"

The information about BIOS defaults on manual (Figure 1,2,3,4, 5,6,7,8,9,10,11,12,13,14)is just for reference, please refer to the BIOS installed on the board for updated information.

❖ **Figure 1. Main Menu**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software

▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PNP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit	←→↑↓: Select Item
F10 : Save & Exit Setup	
Time , Date , Hard Disk Type ...	
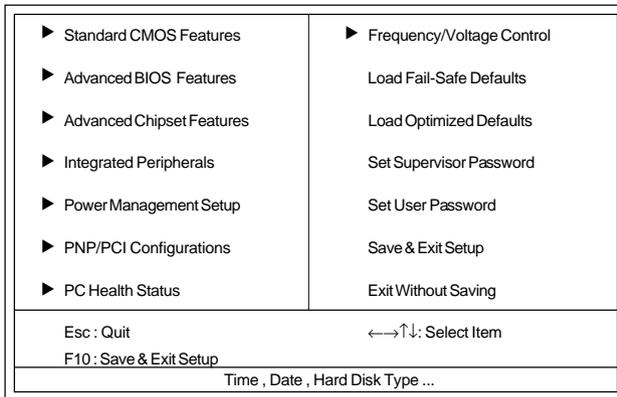
Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

Advanced BIOS Features
> This setup page includes all the items of the BIOS special enchanced features.

Advanced Chipset Features
> This setup page includes all the items of the Chipset special enchanced features.

Integrated Peripherals
> This selection page includes all the items of the IDE hard drive and Programmed Input/Output features.

Power Management Setup
> This setup page includes all the items of the power management features.

PnP/PCI Configurations
> This setup page includes the user defined or default IRQ Setting.

PC Health Status
> This page shows the hardware Monitor information of the system.

Frequency / Voltage Control
> This setup page controls the CPU's clock and frequency ratio.

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

Load Optimized Defaults

These settings are more likely to configure a workable computer when something is wrong. If you cannot boot the computer successfully, select the BIOS Setup options and try to diagnose the problem after the computer boots. These settings do not provide optional performance.

Set Supervisor Password

Change, set, or, disable password.It allows you to limit access to the system and Setup, or just to Setup.

Set User Password

You can specify both a User and a Supervisor password. When you select either password option, you are prompted for a 1-6 character password. Enter the password and then retype the password when prompted.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

2.2 Standard CMOS Features

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

❖ **Figure 2. Standard CMOS Features**

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Standard CMOS Features

```
 Date(mm:dd:yy)              Tue,Jun 6 2000   Item Help
 Time (hh:mm:ss)             11:26:10
                                              Menu Level ▶
▶ IDE Primary Master         None
▶ IDE Primary Slave          None             Change the day,
▶ IDE Secondary Master       None             month,year
▶ IDE Secondary Slave        None             and century.

 Drive A                     1.44M,3.5 in
 Drive B                     None
 Floppy 3 Mode Support       Disabled

 Video                       EGA/VGA
 Halt On                     All,But Keyboard

 Base Memory                      640K
 Extended Memory              523264K
 Total Memory                 524288K
```

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

Main Menu Selections

This table shows the selections that you can make on the Main Menu.

Item	Options	Description
Date	Month DD YYYY	Set the system,date. Note that the 'Day' automatically changes when you set the data.
IDE Primary Master	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Primary Slave	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Secondary Master	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
IDE Secondary Slave	Options are in its sub menu.	Press<Enter> to enter the sub menu of detailed.
Drive A Drive B	None 360K, 5.25in 1.2M, 5.25in 720K, 3.5in 1.44M, 3.5in 2.88M, 3.5in	Select the type of floppy disk drive installed in your system.
Floppy 3 Mode Support	Disabled(default) Drive A Drive B Both	Press<Enter> to enter the sub menu of detailed.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

Item	Options	Description
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of conventional memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

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IDE Primary Master

```
┌──────────────────────────────────────────────┬─────────────────┐
│ IDE HDD Auto-Detection        Press Enter      │ Item Help       │
│                                                │                 │
│ IDE Primary Master            Auto             │                 │
│ Access Mode                   Auto             │ Menu Level  ►►  │
│                                                │ To auto-detect  │
│ Capacity                      0MB              │ the HDD's       │
│                                                │ size, head...on │
│ Cylinder                      0                │ this channel    │
│ Head                          0                │                 │
│ Precomp                       0                │                 │
│ Landing Zone                  0                │                 │
│ Sector                        0                │                 │
└──────────────────────────────────────────────┴─────────────────┘
```

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

2.3 Advanced BIOS Features

❖ **Figure 3. Advanced BIOS Features**

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Advanced BIOS Features

Virus Warning	Disabled	**Item Help**
CPU L1 & L2 Cache	Enabled	
Quick Power On Self Test	Enabled	Menu Level ▶▶
First Boot Device	Floopy	
Second Boot Device	HDD-0	Allows you to choose
Third Boot Device	CD-ROM	the VIRUS warning
Boot Other Device	Enabled	feature for IDE Hard
Swap Floppy Drive	Disabled	Disk boot sector
Boot Up Floppy Seek	Disabled	protection. If this
Boot Up NumLock Status	On	function is enabled
Gate A20 Option	Fast	and someone
x Typematic Rate Setting	Disabled	attempts to write data
x Typematic Rate (Chars/Sec)	6	into this area, BIOS
Typematic Delay (Msec)	250	will show a warning
Security Option	Setup	message on screen
OS Select For DRAM>64MB	Non-OS2	and alarm beep.
HDD S.M.A.R.T. Capability	Disabled	
Video BIOS Shadow	Enabled	
EPA/ (H/W Monitor) Show	H/W Monitor	

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

Virus Warning

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

The Choices: Disabled(default), Enabled.

CPU L1 & L2 Cache

This fields allow you to Enable or Disable the CPU'S "Level 1" & "Level 2" cache. Caching allows better performance.

Enabled(default)	Enabled cache.
Disabled	Disabled cache.

Quick Power On Self Test

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

Enabled(default)   Enabled quick POST.
Disabled   Normal POST.

First/Secondary/Third Boot Device

This BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choices: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled.

Boot Other Device

The Choices: Enabled(default), Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignments.

The Choices: Disabled(default), Enabled.

Boot Up Floppy Seek

Seek disk drives during boot up. Disabled speeds boot-up.

The Choices: Disabled(default), Enabled.

Boot Up NumLock Status

Select power on state for Numlock.

On (default)   Numpad is number keys.
Off   Numpad is arrow keys.

Gate A20 Option

The Choices: Fast(default), Normal

Typematic Rate Setting

    Enabled   Enabled this option to adjust
                                     the keystroke repeat rate.

    Disabled (default)   Disabled.

Typematic Rate (Char/Sec)

    Range between 6**(default)** and 30 characters per second.
    This option controls the speed of repeating keystrokes.

Typematic Delay (Msec)

    This option sets the time interval for displaying the first and
    the second characters.
    The Choices: 250(default), 500, 750, 1000.

Security Option

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

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

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

OS Select For DRAM>64MB

    Select the operating system that is running with greater
    than 64MB of RAM on the system.
    The Choices: Non-OS2(default), OS2.

HDD S.M.A.R.T. Capability

    The Choices: Disabled (default), Enabled.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM for
faster execution.

Enabled (default)	Optional ROM is enabled.
Disabled	Optional ROM is disabled.

EPA/(H/W Monitor) Show

The Choices: H/W Monitor (default), EPA LOGO

2.4 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and external cache. It also coordinates communications of the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was lost while using your system.

❖ **Figure 4. Advanced Chipset Features**

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Advanced Chipset Features

		Item Help
▶ DRAM Clock / Drive Control	Press Enter	
▶ AGP & P2P Bridge Control	Press Enter	
▶ CPU & PCI Bus Control	Press Enter	Menu Level ▶
Memory Hole	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Delay Prior to Thermal	16 min	

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

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DRAM Clock / Drive Control

		Item Help
Current FSB Frequency		
Current DRAM Frequency		
DRAM Clock	By SPD	Menu Level ▶▶
DRAM Timing	By SPD	
x SDRAM CAS Latency	2	
x Bank Interleave	Disabled	
x Precharge to Active(Trp)	3T	
x Active to Precharge(Tras)	6T	
x Active to CMD(Trcd)	3T	
x DRAM Command Rate	2T Command	
DRAM Brust Len	4	
CPU read DRAM Mode	Medium	

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

DRAM Clock

>This item determines DRAM Clock following the CPU host clock.
>
>**The Choices: By SPD(default)**, 100, 133.

DRAM Timing

>The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design.
>
>**The Choices: By SPD(default)**, Manual.

SDRAM CAS Latency

>**2 (default)**   Set SDRAM latency Time to 2.
>**2.5**   Set SDRAM latency Time to 3.

Bank Interleave

>**The Choices: Disabled(default)**, Enabled.

Active to Precharge

>**7T**   Set DRAM Precharge in 7.
>**6T (default)**   Set DRAM Precharge in 6.
>**5T**   Set DRAM Precharge in 5.

DRAM Command Rate

>**The Choices: 2T Command(default)**, 1T Command.

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AGP & P2P Bridge Control

AGP Aperture Size	64M	Item Help
AGP Mode	4X	
AGP Driving Control	Auto	Menu Level ▶▶
x AGP Driving Value	DA	
AGP Fast Write	Disabled	
AGP Master 1WS Write	Disabled	
AGP Master 1WS Read	Disabled	

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

AGP Aperture Size

Select the size of the Accelerated Graphic Port(AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycle that hit the aperture range are forwarded to the AGP without any translation.

The Choices: 64M(default),
              32M, 16M, 8M, 4M, 128M, 256M.

AGP Mode

The Choices: 4X(default), 2X, 1X.

AGP Driving Control

By choosing "Auto" the system BIOS will enable the AGP output Buffer Drive strength that were defined by AGP Card. By choosing "Manual", it allows user to set AGP output Buffer Drive strength by manual.

The Choices: Auto(default), Manual.

AGP Fast Write

The Choices: Disabled(default), Enabled.

AGP Master 1WS Write

When Enabled, write data to the AGP (Accelerated Graphic Port) that will be executed with one wait states.

The Choices: Disabled(default), Enabled.

AGP Master 1WS Read

When Enabled, read data to the AGP (Accelerated Graphic Port) that will be executed with one wait states.

The Choices: Disabled(default), Enabled.

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CPU & PCI Bus Control

		Item Help
CPU to PCI Write Buffer	Enabled	
PCI Master 0 WS Write	Enabled	Menu Level
PCI Delay Transaction	Disabled	

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

CPU to PCI Write Buffer

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

PCI Master 0 WS Write

When this field is Enabled, write data to the PCI bus are
executed with zero wait states.
The Choices: Enabled(default), Disabled.

PCI Delay Transaction
The Choices: Disabled(default), Enabled.

Memory Hole

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

The Choices: Diasbled(default), 15M-16M.

System BIOS Cacheable

When enabled, the access to the system BIOS ROM address at F0000H-FFFFFFH is cached.

The Choices: Disabled(default), Enabled.

Video RAM Cacheable

Enabled	Enabled Video RAM Cacheable.
Disabled (default)	Disabled Video RAM Cacheable.

Delay Prior to Thermal

The Choices: 16 min(default), 4min, 8min, 32min.

2.5 Integrated Peripherals

❖ **Figure 5. Integrated Peripherals**

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Integrated Peripherals

VIA Onchip IDE Device	Press Enter	Item Help
VIA Onchip PCI Device	Press Enter	
Super IO Device	Press Enter	Menu Level
Init Display First	PCI Slot	
Onchip USB Connetor	All Enabled	
USB Keyboard Support	Enabled	
USB Mouse Support	Disabled	
IDE HDD Block Mode	Enabled	

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

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VIA Onchip IDE Device

On-Chip IDE Channel 0	Enabled	Item Help
On-Chip IDE Channel 1	Enabled	
IDE Prefetch Mode	Enabled	Menu Level
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Secondary Master UDMA	Auto	
Secondary Slave UDMA	Auto	

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

On-Chip IDE Channel 0

    Enabled (default)   Enabled onboard 1st channel IDE port.

    Disabled   Disabled onboard 1st channel IDE port.

On-Chip IDE Channel 1

    Enabled (default)   Enabled onboard 2nd channel IDE port.

    Disabled   Disabled onboard 2nd channel IDE port.

IDE Prefetch Mode

The onboard IDE drive interface supports IDE prefetching, for faster drive access. If you install a primary and or secondary add-in IDE interface, set this field to Disabled if the interface does not support prefetching.
The Choices: Enabled(default), Disabled.

Primary Master PIO(for onboard IDE 1st channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

Primary Slave PIO(for onboard IDE 2nd channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

Secondary Master PIO(for onboard IDE 1st channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

Secondary Slave PIO(for onboard IDE 2nd channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

Primary Master UDMA

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disabled.

Primary Slave UDMA
  Auto (default)   BIOS will automatically detect
                                      the IDE HDD Accessing mode.
  Disabled   Disabled.

Secondary Master UDMA
  Auto (default)   BIOS will automatically detect
                                      the IDE HDD Accessing mode.
  Disabled   Disabled.

Secondary Slave UDMA
  Auto (default)   BIOS will automatically detect
                                      the IDE HDD Accessing mode.
  Disabled   Disabled.

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VIA Onchip PCI Device

VIA-3058 AC97 Audio	Auto	Item Help
VIA-3068 MC97 Modem	Auto	
		MenuLevel

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

VIA-3058 AC97 Audio
  The default setting of this item utilizes an onboard sound
  chip for audio output. There is no need to buy and insert a
  sound card. If a sound card is installed, disable this item.
  The Choices: Auto(default), Disabled

VIA-3068 MC97 Modem
  The item allows you to control the onboard MC97 Modem
  controller.
  The Choices: Auto(default), Disabled.

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Super IO Device

Onboard FDC Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	Menu Level
UART Mode Select	Normal	
x RxD,TxD Active	Hi,Lo	
x IR Transmission Delay	Enabled	
x UR2 Duplex Mode	Half	
x Use IR Pins	IR/Rx2Tx2	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	ECP	
x EPP Mode Type	EPP1.7	
ECP Mode Use DMA	3	
Game Port Address	201	
Midi Port Adress	330	
Midi Port IRQ	10	

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

Onboard FDC Controller

Enabled (default)   Enabled onboard FDC
                              Controller.
Disabled   Disabled onboard FDC
                              Controller.

Onboard Serial Port1

Select an address and corresponding interrupt for the first
and second serial ports.

The Choices: 3F8/IRQ4(default), Disabled, (2F8/IRQ3),
          (3E8/IRQ4), (2E8/IRQ3), Auto.

Onboard Serial Port 2

Auto   BIOS will automatically setup
                              the Serial Port 2 address.
3F8/IRQ4   Enabled onboard Serial Port 2
                              and address is 3F8.
2F8/IRQ3 (default)   Enabled onboard Serial Port 2
                              and address is 2F8.
3E8/IRQ4   Enabled onboard Serial
                              Port2   and address is 3E8.

2E8/IRQ3	Enabled onboard Serial
	Port2 and address is 2E8.
Disabled	Disabled.

UART Mode Select
This item allows you to select which Infra Red(IR) function of
the onboard I/O chip you wish to use.
The Choices: Normal(default), IrDA, ASKIR.

Onboard Parallel Port
This item allows you to select the I/O address with which to
access the onboard parallel port controller.
Disabled.
378/IRQ7. (default)
278/IRQ5.
3BC/IRQ7.

Parallel Port Mode
SPP	Using Parallel port as Standard
	Parallel Port.
EPP	Using Parallel port as Ex-
	hanced Parallel Port.
ECP(default)	Using Parallel port as Ex-
	tended Capabilites Port.
ECP+EPP	Using Parallel port as
	ECP/EPP mode.
Normal	

ECP Mode Use DMA
The Choices: 3(default), 1.

Game Port Address
201 (default)	Set onboard game port to 201.
209	Set onboard game port to 209.
Disabled	Disabled.

Midi Port Address

300	Set Midi Port address to 300.
330 (default)	Set Midi Port address to 330.
290	Set Midi Port address to 290.
Disabled	

Midi Port IRQ

10 (default)	Set Midi Port IRQ to 10.
5	Set Midi Port IRQ to 5.

Init Display First

PCI Slot (default)	Set Init Display First to PCI Slot.
AGP	Set Init Display First to onboard AGP.

Onchip USB Connector

This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The Choices: All Enabled(default), All Disabled.

USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus(USB) controller and you have a USB keyboard.

The Choices: Enabled (default), Disabled.

USB Mouse Support

Select Enabled if your system contains a Universal Serial Bus(USB) controller and you have a USB mouse.

The Choices: Disabled(default), Enabled.

IDE HDD Block Mode

The Choiices: Enabled (default), Disabled.

2.6 Power Management Setup

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

❖ **Figure 6. Power Management Setup**

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Power Management Setup

```
ACPI Function              Enabled          Item Help
ACPI Suspend Type          S1(POS)
Power Management Option     User Define      Menu Level
HDD Power Down             Disabled
Suspend Mode               Disabled
Video Off Option           Suspend->Off
Video Off Method           V/H SYNC+Blank
Modem Use IRQ              3
Soft-Off by PWRBTN         Instant-Off
PWRON After PWR-Fail       Off
▶IRQ / Event Activity Detect  Press Enter
```

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

ACPI Function

This item display status of the Advanced Configuration and Power Management (ACPI).

The Choices: Enabled (default), Disabled.

ACPI Suspend Type

The item allows you to select the suspend type under ACPI operating system.

S1(POS) (default)	Power on Suspend.
S3(STR)	Suspend to RAM.
S1&S3	

Power Management Option

This option allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

The Choices: User Define (default), Min Saving, Max Saving.

HDD Power Down

By default, this is "Disabled", meaning that no matter the mode of the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can select to have your hard disk drive be turned off after a selected number of minutes or when the rest or the system goes into a suspend mode.

The Choices: Disabled(default), 1Min to 15 Min selectable.

Suspend Mode

The **Suspend Mode** for you to set the time period after each mode activates. The Saving time is from 1Min to 1hr after you enable the suspend time.

The Choices: Disabled(default), 1Min, 2Min, 4Min, 6Min, 8Min, 10Min, 20Min, 30Min, 40Min, 1Hour selectable.

Video Off Option

This item is for controling your system when to activate the video-off for monitor the power management.

The Choices: Suspend->off (default), Always on.

Video Off Method

This determines the manner in which the monitor is blanked.

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

Modem Use IRQ

This determines the IRQ, which can be applied in Modem use.

3(default)

4/5/7/9/10/11/NA

Soft-Off by PWRBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

The Choices: Instant-Off(default), Delay 4 Sec.

PWRON After PWR-Fail

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

The Choices: Off(default), On, Former-Sts.

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IRQ / Event Activity Detect

		Item Help
VGA	OFF	
LPT & COM	LPT/COM	Menu Level
HDD & FDD	ON	
PCI Master	OFF	
Power On By PS2KB Select	Hotkey	
Power On By PS2KB	Disabled	
Power On By PS2MS	Disabled	
Power On By USB	Disabled	
Power On By PME	Disabled	
Power On By Ring/WOL	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	0 0 0	
IRQs Activity Monitoring	Press Enter	

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

VGA

When set to On, any event occurring at a VGA port will awaken a system which has been powered down.

The Choices: OFF(default), On.

LPT & COM

The Choices: LPT/COM(default), NONE, LPT, COM.

HDD & FDD
When set to On(default), any event occurring at a hard or
floppy drive will awaken a system which has been powered
down.
The Choices: ON(default), OFF.

PCI Master
When set to On, any event occurring at a PCI port will
awaken a system which has been powered down.
The Choices: OFF(default), On.

Power On By PS2KB Select
The Choices: Disabled(default),Enabled.

Power On By PS2KB
The Choices: Disabled(default),Enabled.

Power On By PS2MB
The Choices: Disabled(default),Enabled.

Power On By USB
The Choices: Disabled(default),Enabled.

Power On By PME
The Choices: Disabled(default),Enabled.

Power On By Ring/ WOL
The Choices: Disabled(default),Enabled.

RTC Alarm Resume
When "Enabled", you can set the date and time at which the
RTC (real-time clock) alarm awakens the system from
Suspend mode.
The Choices: Disabled(default),Enabled.

IRQ Activity Monitoring
If you highlight the "Press Enter" next to the "Wake Up Events"
label and then press the enter key, it will take you to a submenu
with the following options:

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software IRQs

Activity Monitoring

Primary INTR	ON	Item Help
IRQ 3 (COM2)	Disabled	
IRQ 4 (COM1)	Enabled	Menu Level
IRQ 5 (LPT2)	Enabled	
IRQ 6 (Flppy Disk)	Enabled	
IRQ 7 (LPT1)	Enabled	
IRQ 8 (RTC Alarm)	Disabled	
IRQ 9 (IRQ2 Redir)	Disabled	
IRQ 10 (Reserved)	Disabled	
IRQ 11 (Reserved)	Disabled	
IRQ 12 (PS2/Mouse)	Enabled	
IRQ 13 (Coprocessor)	Enabled	
IRQ 14 (Hard Disk)	Enabled	
IRQ 15 (Reserved)	Disabled	

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

IRQs Activity Monitoring

When set to On(default), any event occurring at Primary INTR will awaken a system which has been powered down. The following is a list of IRQ, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. As above, the choices are On and Off. Off is the default. When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ3	(COM2)
IRQ4	(COM1)
IRQ5	(LPT2)
IRQ6	(Floppy Disk)
IRQ7	(LPT1)
IRQ8	(RTC Alarm)
IRQ9	(IRQ2 Redir)
IRQ10	(Reserved)
IRQ11	(Reserved)
IRQ12	(PS/2 Mouse)
IRQ13	(Coprocessor)
IRQ14	(Hard Disk)
IRQ15	(Reserved)

2.7 PnP/PCI Configurations

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

❖ **Figure 7. PnP/PCI Configurations**

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PnP/PCI Configurations

PNP OS Installed	No	Item Help
Reset Configuration Data	Disabled	Menu Level ▶
Resources Controlled By	Auto(ESCD)	Select Yes if
x IRQ Resources	Press Enter	you are using a
		Plug and Play
		capable
		operating system
PCI/VGA Palette Snoop	Disabled	select No if you
		need the BIOS
		to configure non-
		boot devices

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

PNP OS Installed

When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows 95. When set to No, BIOS will initialize all the PnP cards. Therefore for non-PnP operating systems(DOS, Netware), this option must be set to No.

The Choices: No(default), Yes.

Reset Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and proceeds resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS. If Disabled (Default)is chosen, the system's ESCD will update only when the new configuration varies from the last one. If Enabled is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

IRQ3	assigned to: PCI PnP
IRQ4	assigned to: PCI PnP
IRQ5	assigned to: PCI PnP
IRQ6	assigned to: PCI PnP
IRQ7	assigned to: PCI PnP
IRQ8	assigned to: PCI PnP
IRQ9	assigned to: PCI PnP
IRQ10	assigned to: PCI PnP
IRQ11	assigned to: PCI PnP
IRQ12	assigned to: PCI PnP
IRQ13	assigned to: PCI PnP
IRQ14	assigned to: PCI PnP
IRQ15	assigned to: PCI PnP

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function. Legacy is the term which signifies that a resource is assigned to the ISA Bus and provides for non-PnP ISA add-on cards. PCI/ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals. **The Choices: Disabled(default)**, Enabled.

Resources Controlled By

By Choosing "Auto" (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing "Manual" the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

The Choices: Auto(ESCD) (default),Manual.

PCI / VGA Palette Snoop

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the write access to the VGA palette and registers the snoop data. In PCI based systems, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

Disabled (default)	Function Disabled.
Enabled	Function Enabled.

2.8 PC Health Status

❖ **Figure 8. PC Health Status**

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PC Health Status

```
┌────────────────────────────────────────────────────────────────┐
│  CPU Warning Temperature          Disabled   │   Item Help       │
│  System Temperature                          │                   │
│  CPU Temperature                             │   Menu Level  ▶   │
│  FAN 1 Speed                                 │                   │
│  FAN 3 Speed                                 │                   │
│  Vcore                                       │                   │
│  Vcc 3.3V                                    │                   │
│  Vcc 5.0V                                    │                   │
│  Vcc 12V                                     │                   │
│  VBat                                        │                   │
│  Vsb 5.0V                                    │                   │
│  Shutdown Temperature             Disabled   │                   │
└────────────────────────────────────────────────────────────────┘
```

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

CPU Warning Temperature

Disabled (default)	Disabled.
50°C/122°F	Monitor CPU Temp.at 50°C/122°F.
53°C/127°F	Monitor CPU Temp.at 53°C/127°F.
56°C/133°F	Monitor CPU Temp.at 56°C/133°F
60°C/140°F	Monitor CPU Temp.at 60°C/140°F
63°C/145°F	Monitor CPU Temp.at 63°C/145°F
66°C/151°F	Monitor CPU Temp.at 66°C/151°F
70°C/158°F	Monitor CPU Temp.at 70°C/158°F

Shutdown Temperature

    Disabled (default)   Disabled.

    60°C/140°F   Monitor CPU Temp.at 60°C/ 140°F

    65°C/149°F   Monitor CPU Temp.at 65°C/ 149°F

    70°C/158°F   Monitor CPU Temp.at 70°C/ 158°F

    75°C/167°F   Monitor CPU Temp.at 75°C/ 167°F

2.9 Frequency / Voltage Control

❖ **Figure 9. Frequency / Voltage Control**

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Frequency / Voltage Control

Auto Detect DIMM / PCI CLK	Enabled	Item Help
Spread Spectrum	Disabled	
CPU Clock Ratio	8X	Menu Level ▶
Clock By Slight Adjust	133	

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

Auto Detect DIMM / PCI CLK

This item allows you to enable/disable auto detect DIMM / PCI CLOCK.
The Choices: Enabled(default), Disabled.

Spread Spectrum

This function is designed to EMI test only.
The Choices: Disabled(default), +/-0.25%, -0.5%, +/-0.5%, +/- 0.38%.

CPU Clock Ratio

This option will not be shown if you are using a CPU with the locked ratio.
The Choices: X8~X28.

CPU By Slight Adjust

You may key in a DEC number in the blank bar. The number must be between below:
The Choices: 100~166.

NOTE:
Intel CPU doesn't support overclocking or overvcoreing, therefore, we don't recommend you to use these funtions, if you do, it will be very possibile to cause your CPU damage.

2.10 Load Fail-Safe Defaults

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

❖ **Figure 10. Load Fail-Safe Defaults**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software
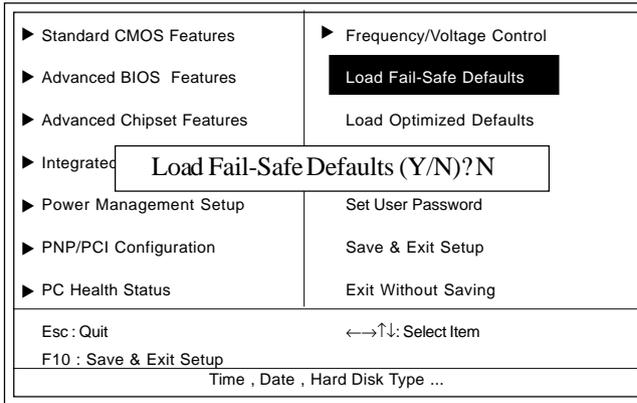
```
┌──────────────────────────────────────────────────────────────┐
│  ▶ Standard CMOS Features      ▶ Frequency/Voltage Control     │
│                                                                │
│  ▶ Advanced BIOS  Features       Load Fail-Safe Defaults       │
│                                                                │
│  ▶ Advanced Chipset Features     Load Optimized Defaults       │
│                                                                │
│  ▶ Integrated    Load Fail-Safe Defaults (Y/N)? N             │
│                                                                │
│  ▶ Power Management Setup         Set User Password            │
│                                                                │
│  ▶ PNP/PCI Configuration          Save & Exit Setup           │
│                                                                │
│  ▶ PC Health Status               Exit Without Saving          │
├──────────────────────────────────────────────────────────────┤
│   Esc : Quit                   ←→↑↓ : Select Item              │
│   F10 : Save & Exit Setup                                      │
├──────────────────────────────────────────────────────────────┤
│              Time , Date , Hard Disk Type ...                  │
└──────────────────────────────────────────────────────────────┘
```

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

2.11 Load Optimized Defaults

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

❖ **Figure 11. Load Optimized Defaults**
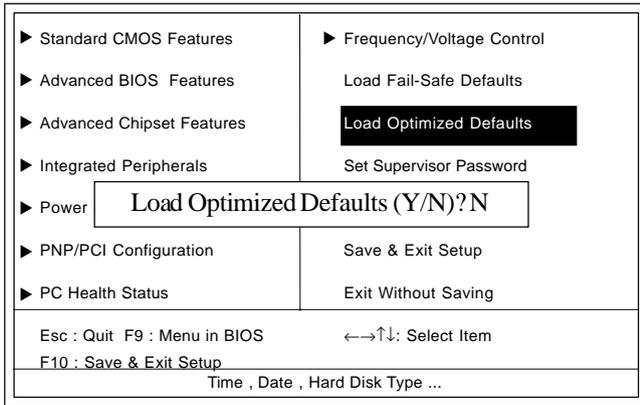
CMOS Setup Utility-Copyright (C) 1984-2001 Award Software

```
┌─────────────────────────────────────────────────────────────┐
│  ▶ Standard CMOS Features       ▶ Frequency/Voltage Control   │
│                                                               │
│  ▶ Advanced BIOS  Features         Load Fail-Safe Defaults    │
│                                                               │
│  ▶ Advanced Chipset Features       Load Optimized Defaults     │
│                                                               │
│  ▶ Integrated Peripherals          Set Supervisor Password    │
│                                                               │
│  ▶ Power      Load Optimized Defaults (Y/N)? N                │
│                                                               │
│  ▶ PNP/PCI Configuration           Save & Exit Setup          │
│                                                               │
│  ▶ PC Health Status                Exit Without Saving        │
│                                                               │
│    Esc : Quit  F9 : Menu in BIOS      ←→↑↓: Select Item       │
│    F10 : Save & Exit Setup                                    │
│         Time , Date , Hard Disk Type ...                      │
└─────────────────────────────────────────────────────────────┘
```

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

2.12 Set Supervisor / User Password

❖ **Figure 12. Set Supervisor / User Password**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software

▶Standard CMOS Features	▶Frequency/Voltage Control
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Advanced Chipset Features	Load Optimized Defaults
▶Integrated Peripherals	**Set Supervisor Password**
▶Power	Enter Password:
▶PNP/PCI Configuration	Save & Exit Setup
▶PC Health Status	Exit Without Saving
Esc : Quit	←→↑↓: Select Item
F10 : Save & Exit Setup	
Time , Date , Hard Disk Type ...	

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Enter Password

Type a password, up to eight characters, and press <Enter>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <ESC> to abort the selection and not enter a password. To disable the password, just press <Enter> when you are prompted to enter a password. A message will confirm that you wish to disable the password. Once the password is disabled, the system will boot and you can enter setup freely.

Password Disabled

If you select "System" at the Security Option of BIOS
Features Setup Menu, you will be prompted for the
password every time when the system is rebooted, or any
time when you try to enter Setup. If you select "Setup" at the
Security Option of the BIOS Features Setup Menu, you will
be prompted only when you try to enter Setup.

2.13 Save & Exit Setup

❖ **Figure 13. Save & Exit Setup**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software

|	
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated	Save to CMOS and Exit (Y/N)? Y
▶ Power Management Setup	Set User Password
▶ PNP/PCI Configuration	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit	←→↑↓: Select Item
F10 : Save & Exit Setup	
Time , Date , Hard Disk Type ...	

Typing "Y" will quit the Setup Utility and save the user setup value to RTC CMOS RAM.
Typing "N" will return to the Setup Utility.

2.14 Exit Without Saving

❖ **Figure 14. Exit Without Saving**

CMOS Setup Utility-Copyright (C) 1984-2001 Award Software

▶Standard CMOS Features	▶ Frequency/Voltage Control
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Advanced Chipset Features	Load Optimized Defaults
▶Integrated	Exit Without Saving (Y/N)? Y
▶Power Management Setup	Set User Password
▶PNP/PCI Configuration	Save & Exit Setup
▶PC Health Status	Exit Without Saving
Esc : Quit	←→↑↓: Select Item
F10 : Save & Exit Setup	
Time , Date , Hard Disk Type ...	
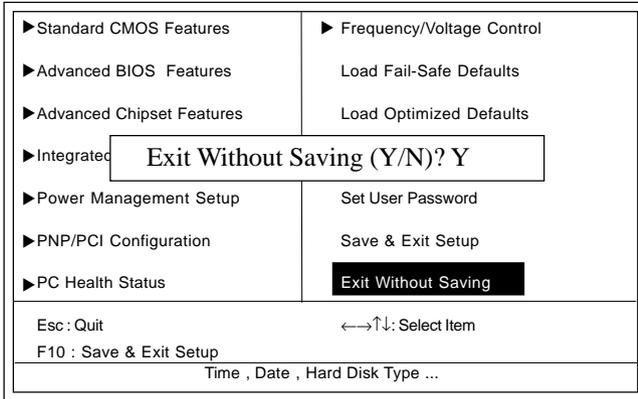
Typing "Y" will quit the Setup Utility without saving to RTC CMOS RAM.
Typing "N" will return to the Setup Utility.

Chapter
3

There are motherboard drivers and utilities included in this CD disc. You don't have to install all of them to boot your system. But after you finish the hardware installation, you have to install your operatimg system first (such as windows XP) before installing any drivers or utilities. Please refer to your operation system installation guide.

Note:
Please follow the recommended procedures after installing Windows 98/ME/XP/2000.

3.1 Auto-run Menu

You can use the auto-run menu of this CD disc and choose the utility or driver and select model name.

3.2 Installing VIA 4 in 1 Driver

You can install the VIA 4 in 1 driver (IDE Bus master (For Windows NT use), VIA ATAPI Vendor Support Driver, VIA AGP, IRQ Routing Driver (For Windows 98 use), VIA Registry (INF) Driver) from this auto-run menu.

(1)
Click "Driver" Item.

(2)
Click
"Chipset" Item.
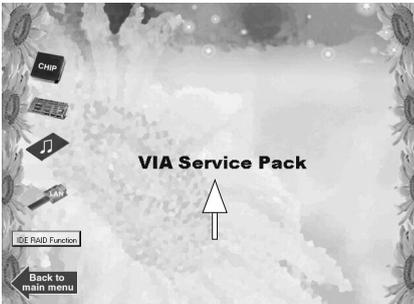
(3)
Click
"VIA Service Pack" Item.
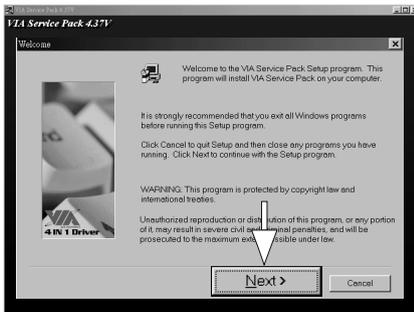
(4)
Click "Next".
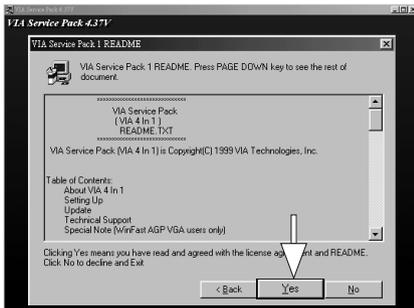
(5)
Click "Yes".

3.3 Installing Audio Driver

This motherboard comes with an AC97 CODEC and the sound controller is in VIA South Bridge chipset. You can find the audio driver from this auto-run menu.

(1)
Click "Driver" Item.
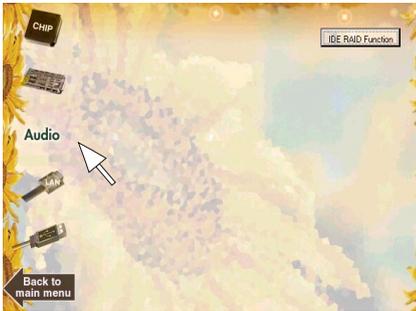
(2)
Click "Audio" Item.

(3)
Click
"ALC101" Item.

(4)
Click "Finish".