MagicLX/MagicEX

Pentium II® Mainboard

User's Manual

Model : MagicLX/MagicEX
Manual version : English, version 1.0
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FCC & & DOC Compliance

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

✧ This device may not cause harmful interference, and
✧ This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer
communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

✧ Re-orient or relocate the receiving antenna.
✧ Increase the separation between the equipment and the receiver.
✧ Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
✧ Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
✧ Consult the dealer or an experienced radio/TV technician for help.

> **Warning! The use of shielded cables for the connection of the monitor to the graphics card is required to assure compliance with FCC regulations Changes or modifications to this authority to operate this equipment.**

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SECTION 2: HARDWARE INSTALLATION

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SECTION 1.
PRODUCT INFORMATION

Thanks for purchasing EX/LX Pentium II mainboard.

This user's manual contains all the information and features that show you how to use the EX/LX mainboard. Please take a moment to familiarize yourself with the design and organization of this manual.

1-1 Manual Features

This manual is divided into the following four sections:

Section 1: Product Information

A brief overview of what comes in the mainboard package, the mainboard layout and the specification it appears.

Section 2: Hardware Installation

Tell you the usage of the mainboard jumpers and the connectors.

Section 3: CMOS Setup Utility

A summary of the mainboard CMOS (BIOS) Setting.

Section 4: BIOS/Software Utility

Introductions of mainboard BIOS flash utility.

Section 5: Audio Driver & Utility Installation

Install Audio Driver & Utility

1-2 Package Check List

This EX/LX mainboard package contains the following items. Please inspect the package contents and confirm that everything is there. If

I. PRODUCT INFORMATION

anything is missing or damaged, call your vendor for instructions before operating.

The package includes:

- One EX/LX Mainboard
- One Pentium II Retention Module
- One Floppy Interface Cable
- One IDE Interface Cable
- One CD Title including Bus Master IDE Driver and Utilities
- One User's Manual
- One serial port bracket
- One parallel port & PS/2 Mouse bracket

1-3 Mainboard Specifications

Form Factor	• Baby AT form factor
Board Size	• 22 cm x 22 cm
CPU	• Supports Pentium II/Celeron CPU up to 333 MHz
System Memory	• For LX mainboard, DIMM 168-pin x 3 , SDRAM added maximum up to 384MB For EX mainboard, DIMM 168-pin x 2 , SDRAM added Maximum up to 256MB • Supports 64M-bit SDRAM technology
Chipset	• Intel 440LX/EX AGP Chipset
Expansion Slots	• 1 x AGP bus • 2 x ISA bus 3 x PCI bus with Bus master/slave mode
Serial Port	• Two serial ports UART 16C550 compatible • Sets serial port 2 to operate in normal mode , IrDA or ASKIR
Parallel Port	One parallel port supports :

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	● SPP-standard parallel port
	● EPP-enhanced parallel port
	● ECP-extended capabilities port
Floppy Interface	Supports drives inches/format with:
	● 3.5 inches–720KB/1.44MB/2.88MB
	● 5.25 inches–360KB/1.2MB
IDE Interface	● Dual PCI IDE interface support up to 4 x IDE HDD or CDROM
	● Supports PIO mode 4 , DMA mode 2 and Ultra DMA 33
USB Interface	● Two USB ports supported
	● USB legacy keyboard function supported
PS/2 Mouse	● PS/2 mouse supported by connector onboard
Keyboard	● AT keyboard onboard connector supported
	● PS/2 keyboard connector (optional)
Fuse	● Supports recoverable fuse for USB and KB/Mouse
RTC and Battery	● RTC build in chipset (south bridge PIIX4)
	● Lithium (CR-2032) battery
Wake up function	● Modem ring wake up
	● LAN wake up
	● RTC Alarm wake up
Synchronous Switching Regulator	● High efficient synchronous switching regulator for CPU core voltage from 2.0V to 3.5V
	● Supports over-voltage / over-current protection function
Hardware Monitor (Optional)	● Fan speed monitor--Two fan connectors , warning when CPU or Housing fan is malfunction
	● Voltage monitor–Warning when system voltage (5V,12V,3.3V,VCORE) are abnormal
	● CPU and system thermal monitor–Warning when CPU and system temperature is higher than a predefined value
Sound Function	● Integrated sound controller compatible with:

I. PRODUCT INFORMATION

	- Sound Blaster Pro
	- Adlib
	- Microsoft Windows System
Power connector	● Supports ATX(20-pin) power connector
	● Supports AT(12-pin) power connector
BIOS	● Award BIOS
	● Year 2000 Compliance
	● PCI 2.1 Compliance
	● PnP BIOS v1.0a Compliance
	● APM v1.2 Compliance
	● DMI 2.0 compliance
	● Flash/Upgrade BIOS protection
	● Supports ACPI (Advanced Configuration and Power Interface) and OS Directed Power Management
	● Supports SOFT power
	● Virus warning supported
	● Floppy drive swapping function supported
LED Indicator	● System power LED
	● HDD activity LED
	● System Suspend LED

1-4 Mainboard Layout

I. PRODUCT INFORMATION
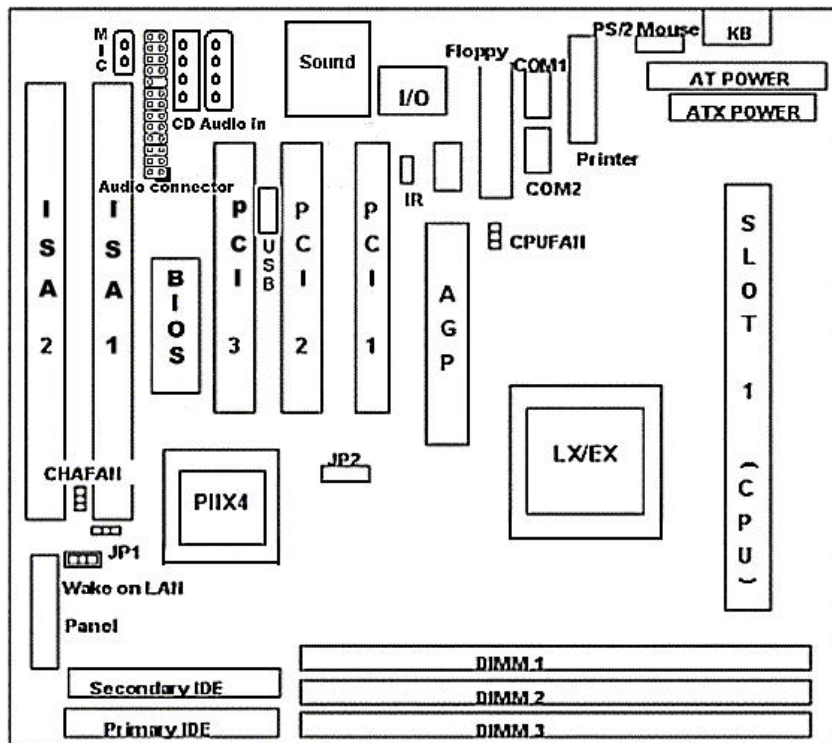
Jumpers

1.	**JP1**	Clear CMOS (Real Time Clock)
2.	**JP2**	CPU Clock Ratio & CPU Type

Expansion Sockets

1.	**DIMM 1 to DIMM 3**	Support DIMM Memory

Expansion Slots

1.	**CPU**	Slot 1 for supporting Pentium II/Celeron CPU

EX/LX   User's   Manual

I. PRODUCT INFORMATION

2. **ISA Slot 1 & Slot 2**   16-bit ISA Bus Expansion Slot

3. **PCI Slot 1 to Slot 3**   32-bit PCI Bus Expansion Slot

Connectors

1.	**KB**	AT Keyboard Connector (6 pins)
2.	**PS/2 Mouse**	PS/2 Mouse Connector (6 pins)
3.	**USB**	Universal Serial BUS Port 1 and Port 2 (10 pins)
4.	**COM1/COM2**	Serial Port 1 / Serial Port 2 (9 pins)
5.	**PRINTER**	Printer (Parallel) Port Connector (25 pins)
6.	**ATX POWER**	ATX Mainboard Power Connector (20 pins)
7.	**AT POWER**	Baby AT Mainboard Power Connector (12 pins)
8.	**CPUFAN**	Pentium II CPU 1 Fan Connector (3 pins)
9.	**CHAFAN**	Chassis Fan Connector (3 pins)
10.	**Floppy**	Floppy Drive Connector (34 pins)
11.	**Primary IDE**	Primary IDE Connector (40 pins)
12.	**Secondary IDE**	Secondary IDE Connector (40 pins)
13.	**IR**	Infrared Port Connector (5 pins)
14.	**Wake on LAN**	LAN wake Up Connector(3 pins)
15.	**Audio connector**	Audio input/output connector
16.	**CD audio in**	CD audio in connector
17.	**Mic in**	Microphone in connector
18.	**Panel:**	

-	**PWR LED**	Power LED Connector (3 pins)
-	**KBLCK**	Keyboard Lock Switch Connector (2 pins)
-	**SLP**	Suspend Switch Connector (2 pins)
-	**SPEAKER**	Chassis Speaker Connector (4 pins)
-	**GRN LED**	Green Status LED Connector (3 pins)
-	**HDD LED**	HDD LED Connector (4 pins)
-	**RESET**	Reset Switch Connector (2 pins)
-	**PWR ON**	Power Switch Connector (2 pins)

SECTION 2.
HARDWARE INSTALLATION

This section gives you a step-by-step procedure on how to install your system. Follow each section accordingly.

2-1   Jumper Settings

Please refer the following figures for the locations of the jumpers on the mainboard.

2-1.1   CMOS Clear Setting
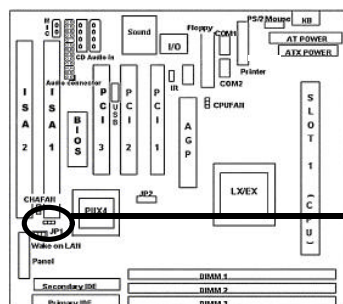
JP1   **CMOS**
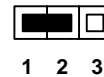
Default
(Normal)
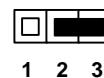
Clear CMOS

To clear CMOS, please follow the steps below:

1. Power off the system and unplug the chassis AC power cord.

2. Short JP1 at pin 2-3 for few seconds.

3. Set JP1 back to its Normal position at pin 1-2.

4. Plug the AC power cord to the chassis.

5. Power on the system and load the BIOS setup default.

II.HARDWARE INSTALLATION

2-1.2 CPU Type & CPU Clock Setting

	CPU Type	JP2
Default:	266MHz	3-4 & 5-6
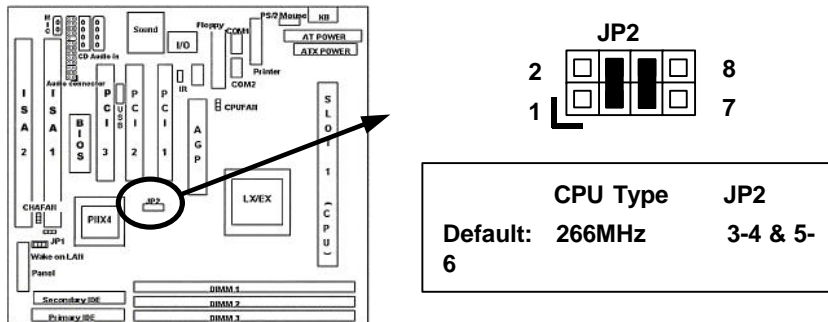
This mainboard supports Pentium II / Celeron CPU up to 333MHz. Install your CPU type with the following jumper settings.

Clock Ratio	CPU Type	JP2 Setting
3.5X	233MHz	1-2
4X	266MHz	3-4 & 5-6
4.5X	300MHz	3-4
5X	333MHz	5-6

II.HARDWARE INSTALLATION

2-2 Connectors

2-2.1 Panel Connector
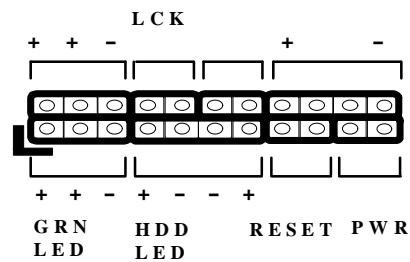
```
                LCK
    +   +   -          +        -
   ┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐
   ┌─────────────────────────────────┐
   │ ○ ○ ○ │ ○ ○ │ ○ ○ │ ○ ○ │ ○ ○ ○ │
   │ ○ ○ ○ │ ○ ○ │ ○ ○ │ ○ ○ │ ○ ○ ○ │
   └─────────────────────────────────┘
   └─┘ └─┘ └─┘ └─┘ └─┘ └─┘ └─┘ └─┘
    +   +   -   +   -   -   +
   GRN     HDD          RESET  PWR
   LED     LED
```

-	**PWR LED**	Power LED Connector (3 pins)
-	**KBLCK**	Keyboard Lock Switch Connector (2 pins)
-	**SLP**	Suspend Switch Connector (2 pins)
-	**SPEAKER**	Chassis Speaker Connector (4 pins)
-	**GRN LED**	Green Status LED Connector (3 pins)
-	**HDD LED**	HDD LED Connector (4 pins)
-	**RESET**	Reset Switch Connector (2 pins)
-	* **PWR ON**	ATX Power Switch Connector and Suspend Switch Connector (2 pins)

* PWR ON: ATX Power Switch and Suspend Switch Connector

Attach the ATX power button or suspend switch cable to this connector.

In the ATX power system, this connector will be not only an ATX power button, but a suspend switch as well. Details are describes as below:

When the system is off, push the power button to turn the system on. When the system is on, push the power button rapidly within 4 seconds to switch the system to the suspend mode, and, by pushing and holding the button for more than 4 seconds, it will turn the system completely off. When the system is in the suspend mode, push the power button rapidly to turn the system on.

II.HARDWARE INSTALLATION

2-2.2 ATX Power Connector

Connect the 20-pin ATX power supply cable to this power connector. Make sure the right plug-in direction and the power supply is off before connecting or disconnecting the power cable.

ATX Power
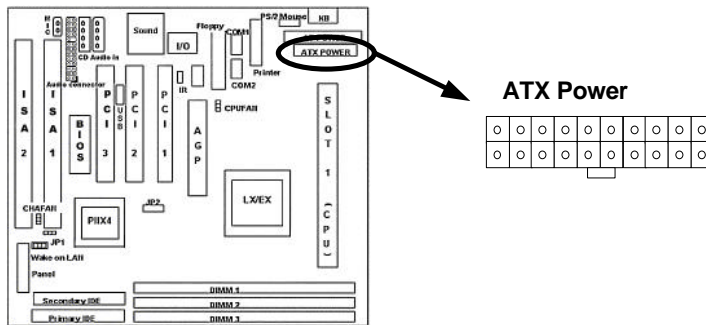
2-2.3 AT Power Connector

Connect the 12-pin AT power supply cable to this power connector. Make sure the right plug-in direction and the power supply is off before connecting or disconnecting the power cable.

AT Power
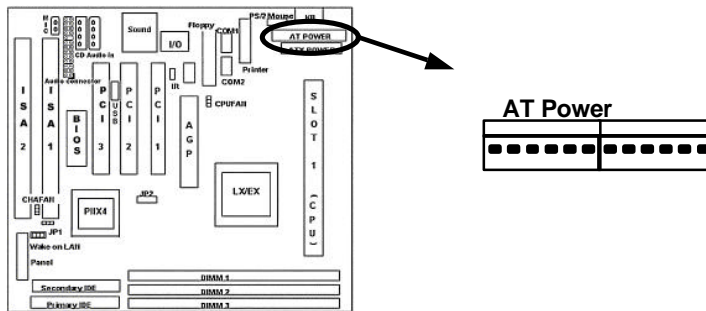
2-2.4 Fan Connectors

Connect the CPU and Chassis Fan cables to the 3-pin fan connectors shown below. The fan connectors are marked as CPUFAN and CHAFAN on the mainboard.

FAN CONNECTOR

- SENSE
- +12V
- GND
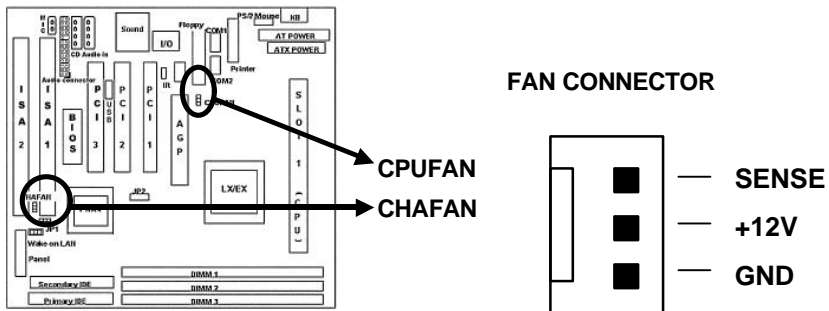
2-2.5 PS/2 Mouse Connector

Connect the PS/2 mouse to the onboard 6-pin Mini-Din connector marked as PSMS1.

3 1 2 4

PSMS1

5   6

Pin	Description
1	MS DATA
2	NC
3	GND
4	+5V
5	MS CLK
6	NC
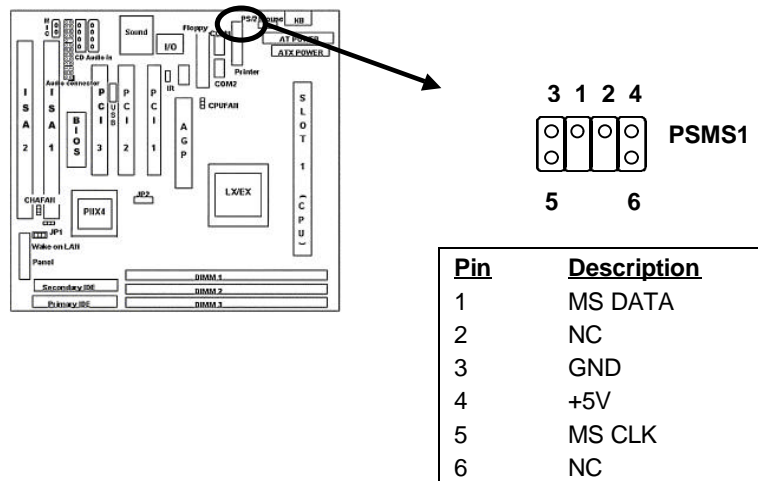
II.HARDWARE INSTALLATION

2-2.6 Keyboard Connector

Connect the AT keyboard to the onboard keyboard connector marked as KB1.

KB1
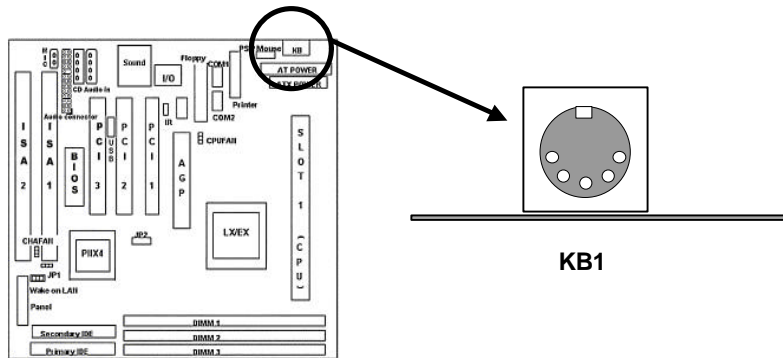
2-2.7 USB Device Connector

Connect your USB device(s) to the onboard USB connector marked as USB.

USB

Pin	Description	Pin	Description
1	V0	2	V1
3	D0-	4	D1-
5	D0+	6	D1+
7	GND	8	GND
9	NC	10	NC
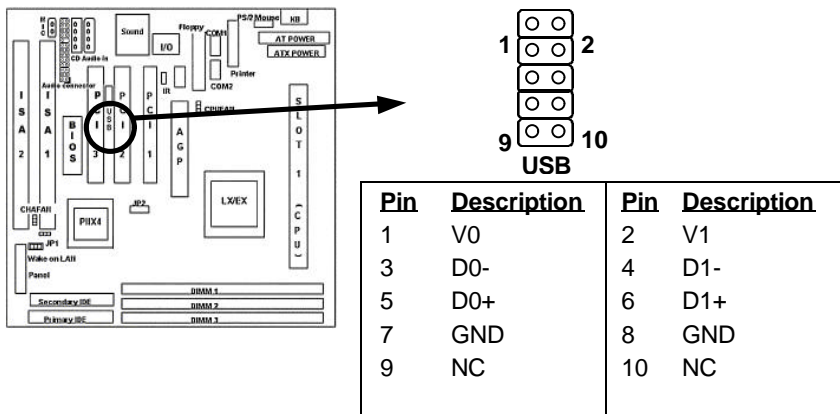
2-2.8   Serial Device(COM1/COM2) Connectors

Connect your serial device(s) to the onboard 9-pin serial connectors marked as COM1 and COM2.

COM1

COM2

2-2.9   Printer Connctor
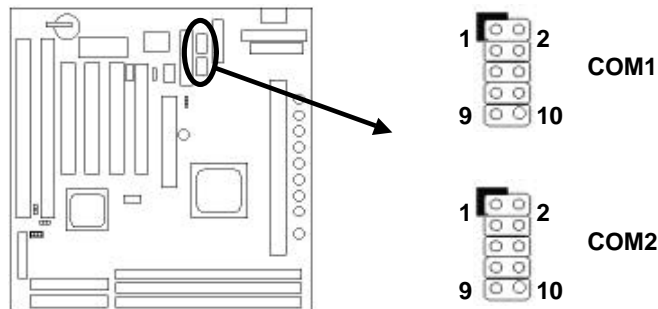
Connect your local printer to the onboard 25-pin printer connector marked as Printer.

Printer
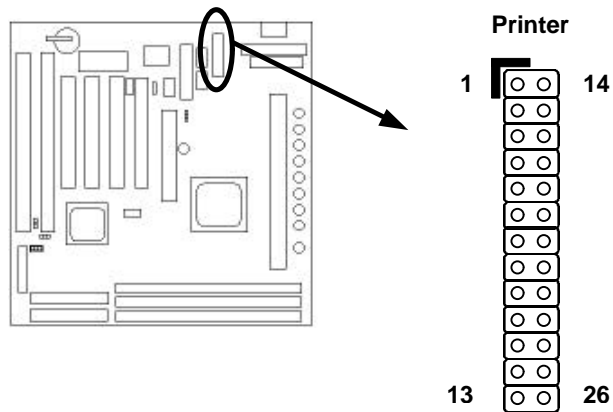
II.HARDWARE INSTALLATION

2-2.10 Floppy Drive Connector

Connect the floppy drive cable to the onboard 34-pin floppy drive connector marked as FDD.
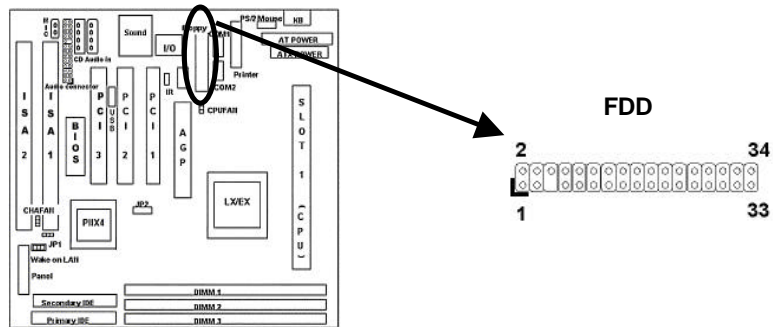
2-2.11 IDE Hard Disk and CD-ROM Connector

Connect your IDE devices to the onboard 40-pin IDE connectors marked as Primary and Secondary.

Secondary IDE Cable
Slave   **Master**
Secondary
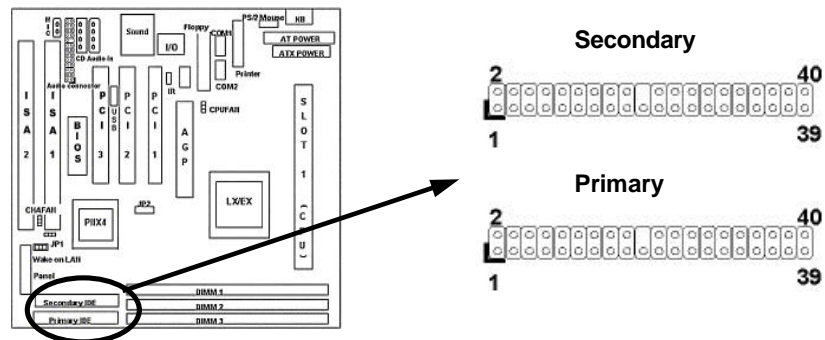
Primary IDE Cable
Slave   **Master**
Primary
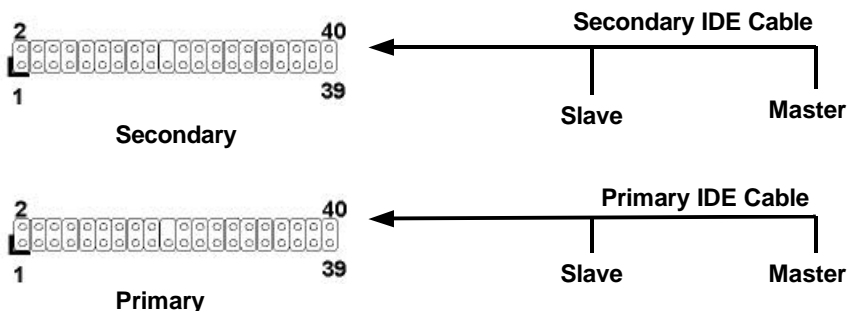
It is suggested that you connect the IDE devices to your IDE cables as the figure shown above. Each IDE channel, either Primary or Secondary, supports two IDE devices which must be set differently to master mode and slave mode.

(Refer to your hard disk and CD-ROM user s manual for detailed settings of IDE master and slave mode.)

2-2.12   IrDA Connector

Connect your IR device to the onboard IrDA connector marked as IR.

Pin	Description
1	+5V
2	NC
3	IRRX
4	GND
5	IRTX

IR
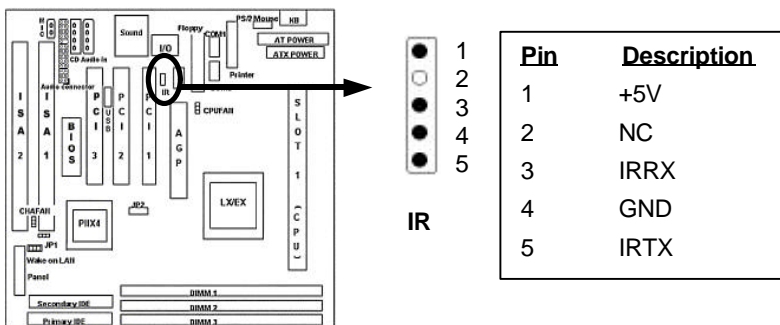
II.HARDWARE INSTALLATION

2-2.13   AUDIO Connector

This mainboard supports Sound Funtion.

Line-in(Audio in)
Mic-in(Microphone in)
Line-out(Audio out)

Gameport(Joystick in)

From CD-ROM
"Audio-out Port"
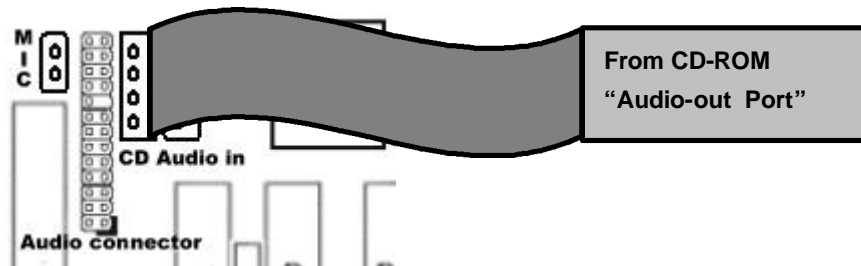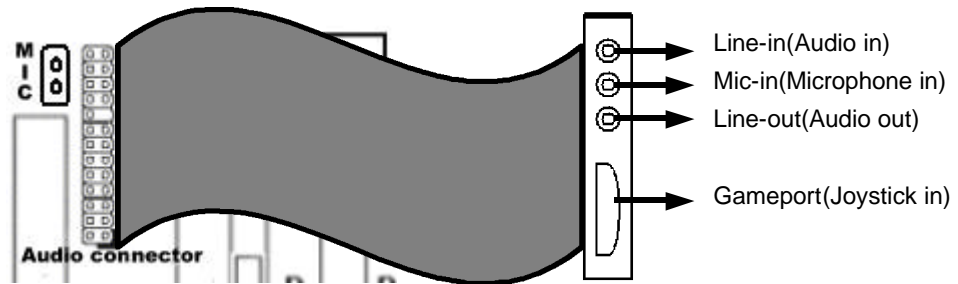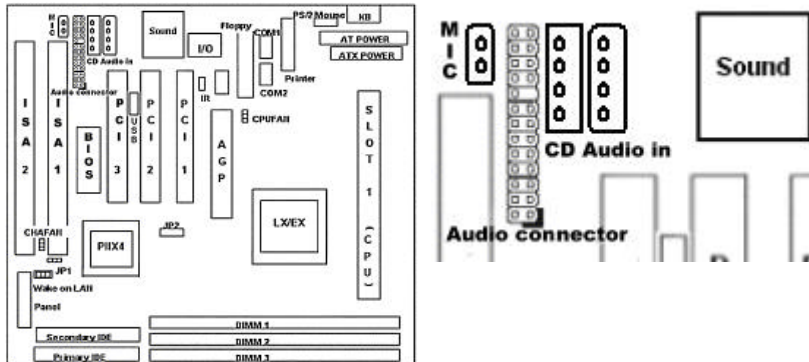
II.HARDWARE INSTALLATION

2-2.14   Wake on LAN Connector

This mainboard supports wake up on LAN function. To use this function, you need a Wake on LAN supported network card and software.

Wake on LAN

1   2   3

Pin	Description
1	+5V Standby
2	GND
3	Signal
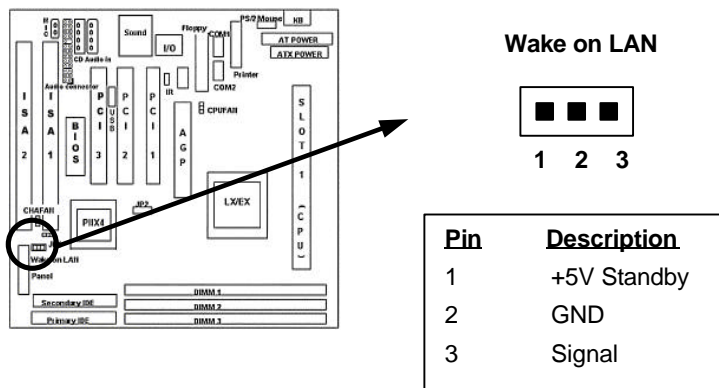
2-3   System Memory Installation

There are 3 pcs 168-pin **DIMM** (Dual Inline Memory Module) sockets on the mainboard which support SDRAM and EDO DRAM memory.

For LX mainboard, there are 3 168-pin DIMM sockets (DIMM1, DIMM2 & DIMM3) that allow you to install system memory up to 384MB SDRAM.

For EX mainboard, there are 2 168-pin DIMM sockets (DIMM 2 & DIMM3) that allow you to install system memory up to 256MB SDRAM.
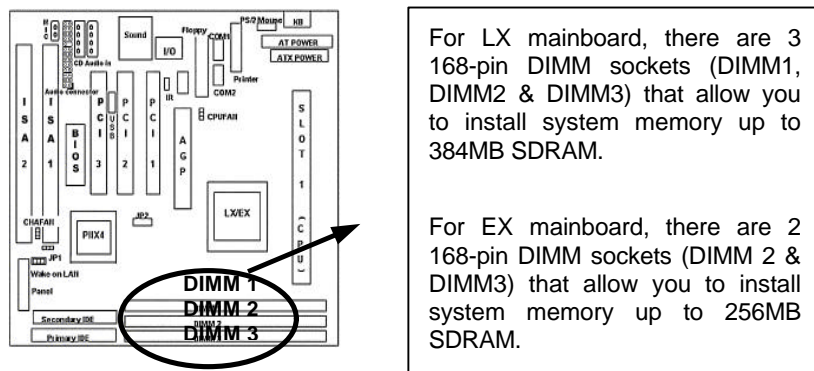
II.HARDWARE INSTALLATION

2-3.1 Type

This mainboard supports SDRAM DIMM and EDO DIMM.

For every single DIMM socket, maximum is 128MB if SDRAM is installed, and maximum is 256MB if EDO is installed.

2-3.2 Speed

For SDRAM, the memory speed normally marked as: -15, -12, -10, -8, -7.

   The meaning is,

       -15 = 15ns, and the maximum clock is 66MHz

       -12 = 12ns, and the maximum clock is 83MHz

       -10 = 10ns, and the maximum clock is 100MHz

        -8 = 8ns, and the maximum clock is 125MHz

        -7 = 7ns, and the maximum clock is 142MHz

For EDO, the access time can be 50ns, 60ns.

2-3.3 Buffered and Non-buffered

Only the non-buffered DIMM can be used in this mainboard. The difference between buffered and non-buffered DIMM can be identified by the notch position shown below.
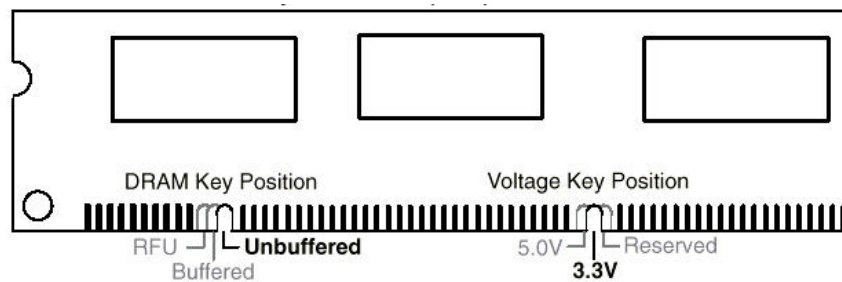
2-3.4   2-clock and 4-clock signal

Both 2-clock and 4-clock SDRAM DIMM supported by this mainboard.

2-3.5   Parity and Non-parity

This mainboard supports 64 bit Non-parity and 72 bit Parity DIMM modules.

2-3.6   Memory Auto detection by BIOS

This mainboard BIOS can automatically detect the DIMM memory size and type, so you do not need to adjust any hardware or software settings.

2-3.7   Suggested Memory combination

This mainboard supports the following SDRAM combination.

DIMM Data Chip	Bit size per side	Single/Double side	No. of chip	DIMM size
1M by 16	1M X 64	Single side	4	8MB
1M by 16	1M X 64	Double side	8	16MB
2M by 8	2M X 64	Single side	8	16MB
2M by 8	2M X 64	Double side	16	32MB
4M by 4	4M X 64	Single side	16	32MB
2M by 32	2M X 64	Single side	2	16MB
2M by 32	2M X 64	Double side	4	32MB
4M by 16	4M X 64	Single side	4	32MB
4M by 16	4M X 64	Double side	8	64MB
8M by 8	8M X 64	Single side	8	64MB

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8M by 8	8Mx64	Double side	16	128MB
16M by 4	16Mx64	Single side	16	128MB

This mainboard supports the following EDO combination.

DIMM Data Chip	Bit size per side	Single/Double side	No. of chip	DIMM size
1M by 4	1M X 64	Single side	4	8MB
1M by 4	1M X 64	Double side	8	16MB
1M by 16	2M X 64	Single side	8	16MB
1M by 16	2M X 64	Double side	16	32MB
2M by 8	4M X 64	Single side	16	32MB
2M by 8	2M X 64	Single side	2	16MB
2M by 32	2M X 64	Single side	2	16MB
2M by 32	2M X 64	Double side	4	32MB
4M by 4	4M X 64	Single side	16	32MB
4M by 4	4M X 64	Double side	32	64MB
4M by 16	4M X 64	Single side	4	32MB
4M by 16	4M X 64	Double side	8	64MB
8M by 8	8M X 64	Single side	8	64MB
8M by 8	8M X 64	Double side	16	128MB
16M by 4	16Mx64	Single side	16	128MB
16M by 4	16Mx64	Double side	32	256MB

For LX mainboard,

   Total Memory Size = DIMM1 + DIMM2 + DIMM3

For EX mainboard,

   Total Memory Size = DIMM1 + DIMM2

II.HARDWARE INSTALLATION

SECTION 3.
CMOS SETUP UTILITY

3-1 BIOS Setup Main Menu

This section tells you how to configure the system by changing BIOS setup options. To enter the BIOS Setup Utility, press **DEL** key during POST (Power-On Self Test). The BIOS Setup Main Menu will appear as shown below.

```
                    ROM PCI/ISA BIOS (00000006)
                        CMOS SETUP UTILITY
                      AWARD SOFTWARE, INC.

    STANDARD CMOS SETUP          INTEGRATED PERIPHERALS

    BIOS FEATURES SETUP          PASSWORD SETTING

    CHIPSET FEATURES SETUP       IDE HDD AUTO DETECTION

    POWER MANAGEMENT SETUP       SAVE & EXIT SETUP

    PNP/PCI CONFIGURATION        EXIT WITHOUT SAVING

    LOAD SETUP DEFAULTS

    LOAD TURBO DEFAULTS

    Esc : Quit                    ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup       (Shift)F2 : Change Color
```

The main menu displays a table of items which defines basic information about your system. Below are the keyboard function keys you can use under the menu.

III. CMOS SETUP UTILITY

Menu function keys:

E S C	To close the BIOS Setup Utility.
☐☐☐☐	To move around the screen. An item is highlighted if it is selected.
F 1	To displays information about the highlighted item you selected.
S H I F T + **F 2**	To Change the color scheme.
F 1 0	To save the changes before exit the BIOS Setup Utility.
ENTER	To select or enter a submenu.

3-2   Standard CMOS Setup

This "Standard CMOS Setup" sets the basic system settings such as the date, time, and the hard disk type, Video display type and error handling. Use the arrows keys ☐☐☐☐ to highlight an item and use **Page Up** / **Page Down** or **+** **-** to set the value for each item.

```
                    ROM PCI/ISA BIOS (00000006)
                        STANDARD CMOS SETUP
                        AWARD SOFTWARE, INC.

  Date (mm:dd:yy) : Thu, Apr 30 1998
  Time (hh:mm:ss) : 14 :  8 :  0

  HARD DISKS          TYPE    SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE

  Primary Master  : Auto      0      0    0     0      0      0     AUTO
  Primary Slave   : Auto      0      0    0     0      0      0     AUTO
  Secondary Master: Auto      0      0    0     0      0      0     AUTO
  Secondary Slave : Auto      0      0    0     0      0      0     AUTO

  Drive A : 1.44M, 3.5 in.
  Drive B : None                      ┌──────────────────────────────┐
                                      │    Base Memory:       0K     │
  Video   : EGA/VGA                   │ Extended Memory:      0K     │
  Halt On : All Errors                │    Other Memory:    512K     │
                                      ├──────────────────────────────┤
                                      │   Total Memory:     512K     │
                                      └──────────────────────────────┘
  ESC : Quit              ↑↓→←  : Select Item     PU/PD/+/- : Modify
  F1  : Help           (Shift)F2 : Change Color
```

➢ **Date**

To set the date, highlight the date area. Press $\boxed{+}$ / $\boxed{-}$ or **Page Up** / **Page Down** to set the current date. The date format is month: **Jan. ~ Dec**., date: **1 ~ 31**, and year: **1994 ~ 2079**.

➢ **Time**

To set the time, highlight the time area. Press $\boxed{+}$ / $\boxed{-}$ or **Page Up** / **Page Down** to set the current time. The time format is hour: **00 ~ 23**, minute: **00 ~ 59**, and second: **00 ~ 59**.

➢ **Hard Disks → Primary Master**
➢ **Hard Disks→ Primary Slave**
➢ **Hard Disks → Secondary Master**
➢ **Hard Disks → Secondary Slave**

<u>TYPE:</u> **-** Auto - User - None	This item lets you set your system IDE hard disk type. Select Auto to let BIOS automatically detect the installed hard disk when system boot up. Select User if you prefer manually enter the hard disk type. The available parameters are SIZE(HDD Size), CYLS(No. of Cylinder), HEAD(No. of Head), PRECOMP(Pre-compensation), LANDZ(Landing Zone), SECTOR(No. of Sector) and MODE(HDD Mode). Select None if there is no hard disk connected to the system.

Default: Auto

III. CMOS SETUP UTILITY

MODE:
- AUTO
- NORMAL
- LBA
- LARGE

Select NORMAL for IDE HDD smaller than 528MB. Select LBA for IDE HDD over than 528MB and support LBA(Logical Block Addressing) mode. Select LARGE for IDE HDD over than 528MB and do not support LBA mode.

Note: We recommend that you set both IDE HDD TYPE and MODE to AUTO to let BIOS automatically detect the hard disk drives for you

Default: Auto

➢ **Floppy → Drive A**
➢ **Floppy → Drive B**

Drive A / B:
- None
- 360KB - 5.25"
- 1.2MB 5.25"
- 720KB 3.5"
- 1.44MB 3.5"
- 2.88MB 3.5"

Select the floppy drive type installed in your system. The available options for Drive A and Drive B are: 360KB 5.25", 1.2MB 5.25", 720KB 3.5", 1.44MB 3.5", 2.88MB 3.5" and None.

Default: Drive A => 1.44MB 3.5 "

Drive B => None

➢ **Video**

Video:
- EGA/VGA
- CGA40
- CGA80
- Mono

Select the video display card type installed in your system. The available types are: EGA/VGA, CGA 40, CGA 80 and Mono.

Default: EGA/VGA

➢ **Halt On**

III. CMOS SETUP UTILITY

Halt On:
- All Errors
- No Errors
- All, But Keyboard
- All, But Diskette
- All, But Disk/Key

This item defines the operation of the system POST(Power On Self Test). You can use this item to select which kind of errors will cause the system to halt during POST.

Default: All Errors

III. CMOS SETUP UTILITY

3.3 BIOS Features Setup

This "BIOS Features Setup" option allows you to setup and improve your system features and performance.

```
            ROM PCI/ISA BIOS (00000008)
               BIOS FEATURES SETUP
               AWARD SOFTWARE, INC.

Virus Warning          : Disabled   Video  BIOS Shadow  : Enabled
                                    C8000-CBFFF Shadow  : Disabled
External Cache         : Enabled    CC000-CFFFF Shadow  : Disabled
CPU L2 Cache ECC Checking : Enabled D0000-D3FFF Shadow  : Disabled
Quick Power On Self Test  : Enabled D4000-D7FFF Shadow  : Disabled
Boot Sequence          : A,C,SCSI   D8000-DBFFF Shadow  : Disabled
Swap Floppy Drive      : Disabled   DC000-DFFFF Shadow  : Disabled
Boot Up Floppy Seek    : Disabled
Boot Up NumLock Status : On
Boot Up System Speed   : High
Typematic Rate Setting : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec) : 250
Security Option        : Setup
PCI/VGA Palette Snoop  : Disabled
OS Select For DRAM > 64MB : Non-OS2    ESC : Quit        ↑↓→← : Select Item
                                       F1  : Help        PU/PD/+/- : Modify
                                       F5  : Old Values  (Shift)F2 : Color
                                       F6  : Load Setup Defaults
                                       F7  : Load Turbo Defaults
```

➢ **Virus Warning**

Virus Warning: When this item is enabled, it provides some protection
- Enabled   against viruses which try to write to the boot sector and
- Disabled   partition table of your hard disk drive. The default setting is
                       Disabled so that you can install an operating system or
                       software application. We recommend that you enable Virus
                       Warning as soon as you have installed an OS in your hard
                       disk drive.

Default: Disabled

III. CMOS SETUP UTILITY

➢ **External Cache**

External Cache: This item controls Enable/Disable the external L2 cache.
- Enabled
- Disabled

Default: Enabled

➢ **CPU L2 Cache ECC Checking**

CPU L2 Cache ECC This item can be used to enable ECC (Error Checking and
Checking: Correcting) function of the CPU level-2 cache memory.
- Enable When the item is enabled, BIOS will automatically check if
- Disabled CPU support L2 ECC function. This item will not be
displayed if CPU does not support L2 ECC.

Default: Enabled

➢ **Power-On Self-Test**

Quick Power-on This item can be used to start operating system quickly by
Self-test: skip some normal POST checking items.
- Enable
- Disabled

Default: Enabled

➢ **Boot Sequence**

Boot Sequence: This item defines where the system will look for an
- A,C,SCSI operating system, and the order of priority. The boot up
- C,A,SCSI search sequence shown as left.
- C,CDROM,A
- CDROM,C,A **Default: A, C, SCSI**
- D,A,SCSI
- E,A,SCSI
- F,A,SCSI
- SCSI,A,C
- SCSI,C,A
- C only
- LS/ZIP,C

III. CMOS SETUP UTILITY

➢ **Swap Floppy Drive**

Swap Floppy Drive:
- Enabled
- Disabled

If you have two floppy drives in your system, This item allows you to swap around the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A. **Default: Disabled**

➢ **Boot Up Floppy Seek**

Boot Up Floppy Seek:
- Enabled
- Disabled

This item controls the system to seek floppy drive during boot up POST.

Default: Disabled

➢ **Boot Up NumLock Status**

Boot Up NumLock Status:
- On
- Off

This item defines if the keyboard **NumLock** key is active when your system is started.

Default: On

➢ **Boot Up System Speed**

Boot-up System Speed:
- High
- Low

This item allows the system boot up with High or Low speed.

Default: High

➢ **Typematic Rate Setting**

Typematic Rate Setting:
- Enabled
- Disabled

To Enable or Disable the speed of keyboard to send repeat keystrokes.

Default: Disabled

➢ **Typematic Rate (Chars/Sec)**

Typematic Rate:
- 6
- 8
- 10
- 12
- 15
- 20
- 24
- 30

This item provides typematic rate setting, which allows you to control the repeated keystrokes speed.

Default: 6

➢ **Typematic Delay (Msec)**

Typematic Delay:
- 250
- 500
- 750
- 1000

This item provides typematic delay setting, which allows you control the delay time between the first and the second keystroke.

Default: 250

➢ **Security Option**

Security Option:
- Setup
- System

The setup option for password request in entering setup.

The system option for password request in entering setup & boot up.

Default: Setup

➢ **PCI/VGA Palette Snoop**

III. CMOS SETUP UTILITY

PCI/VGA Palette Snoop:
- Enabled
- Disabled

Set this item to Enabled to reduce display problem when both PCI VGA and some graphic accelerator devices such as MPEG/Video capture cards are installed in your system.

Default: Disabled

➢ **OS Select for DRAM > 64MB**

OS Select for DRAM > 64MB:
- OS/2
- Non-OS/2

This item is to patch that can not report correct memory size for more than 64 MB. Set it to OS/2 if you have an OS/2 installed and have over 64MB system memory.

Default: Non-OS/2

➢ **Video BIOS Shadow**

Video BIOS Shadow:
- Enabled
- Disabled

This item defines if you leave default setting, video BIOS memory will be copied from ROM into DRAM area to enhance system performance as DRAM access time is faster than ROM.

Default: Enabled

➢ **C8000-CBFFF Shadow to DC000-DFFFF Shadow**

C8000-CBFFF to DC000-DFFFF Shadow:
- Enabled
- Disabled

Set Enabled if you know the address that your add on card ROM used to shadow them. If the item is Enabled, BIOS will copy the selected area from ROM to RAM to increase system performance.

Default: Disabled

3-4   Chipset Features Setup

This option display a table of items which define timing parameters of the mainboard components including the graphic system, memory, and the system logic. In general rule, you should leave the items on this page at the default values unless you are familiar with the technical specifications of your hardware. If you change the values, you may introduce fatal errors or recurring instability into your system.

```
                   ROM PCI/ISA BIOS (00000008)
                      CHIPSET FEATURES SETUP
                      AWARD SOFTWARE, INC.

 Auto Configuration      : Enabled   Pentium II Micro Codes  : Enabled
                                     CPU Clock Frequency     : 66.8 MHz
 DRAM Speed Selection     : 60ns
 MA Wait State            : Fast
 EDO RAS# To CAS# Delay   : 3
 EDO RAS# Precharge Time  : 4
 EDO DRAM Read Burst      : x333
 EDO DRAM Write Burst     : x333
 SDRAM(CAS Lat/RAS-to-CAS): 3/3
 SDRAM RAS Precharge Time : 3 T
 DRAM ECC Function        : Disabled
 CPU-To-PCI IDE Posting   : Enabled
 Video  BIOS Cacheable    : Disabled
 Video RAM Cacheable      : Disabled
 8 Bit I/O Recovery Time  : 4
 16 Bit I/O Recovery Time : 2    ESC : Quit      ↑↓→← : Select Item
 Memory Hole At 15M-16M   : Disabled  F1  : Help      PU/PD/+/- : Modify
 Passive Release          : Disabled  F5  : Old Values  (Shift)F2 : Color
 Delayed Transaction      : Disabled  F6  : Load Setup Defaults
 AGP Aperture Size (MB)   : 64        F7  : Load Turbo Defaults
```

➢   **Auto Configuration**

Auto Configuration: - Enabled - Disabled	Leave this item at the default value Enabled. This will automatically install the correct values for the system DRAM timing. Set Disabled if you want to specify your own DRAM timing.

Default: Enabled

III. CMOS SETUP UTILITY

➤ **DRAM Speed Selection**

DRAM Speed Selection:
- 50ns
- 60ns

This item allows you set your DRAM speed, 50ns or 60ns.

Default: 60ns

➤ **MA Wait State**

MA Wait State:
- Slow
- Fast

This item defines DRAM MA (Memory Address) wait state. Set it to Fast when DRAM loading is heavy or the speed is lower.

Default: Slow

➤ **EDO RAS# To CAS # Delay**

EDO RAS# To CAS# Delay:
- 2
- 3

This item defines the delay state between DRAM Row Address Strobe (RAS) and Column Address Strobe (CAS).

Default: 3

➤ **EDO RAS# Precharge Time**

EDO RAS# Precharge:
- 3
- 4

This item defines the waiting time after issuing a precharge command to EDO.

Default: 3

➤ **EDO DRAM Read Burst**

EDO DRAM Read Burst:
- X222
- X333

This item defines the four continuous memory reading from EDO DRAM within one read burst cycle.

Default: X333

III. CMOS SETUP UTILITY

➢ **EDO DRAM Write Burst**

EDO DRAM Write Burst: - X222 - X333	This item defines the four continuous memory writing to EDO DRAM within one write burst cycle. **Default: X333**

➢ **SDRAM(CAS Lat/RAS-to-CAS)**

SDRAM(CAS Lat/RAS-to-CAS): - 2/2 - 3/3	SDRAM CAS Latency defines the latency between SDRAM read command and the actual data time. SDRAM RAS-to-CAS Delay defines the latency between SDRAM active command and the read/write command. It is an important SDRAM parameter. If your SDRAM has unstable problem, try set this item to 3T. **Default: 3/3**

➢ **SDRAM RAS Precharge Time**

SDRAM RAS Precharge: - 2T - 3T	This item defines the waiting time after issuing a SDRAM Precharge command. **Default: 3T**

➢ **DRAM ECC Function**

DRAM ECC Function: - Enabled - Disabled	This item enables/disables ECC(Error Checking and Correction) for the main memory. We recommend that you leave this item at Disabled if you have not verified that your memory modules support ECC. To use this function, you need 72 bits(64+8 bit parity) DIMM. **Default: Disabled**

III. CMOS SETUP UTILITY

> **CPU-To-PCI IDE Posting**

CPU-To-PCI IDE Posting:
- Enabled
- Disabled

This item defines CPU to IDE posting cycle. Set it to disabled if you have any IDE compatibility problem.

Default: Enabled

> **Video BIOS Cacheable**

Video BIOS Cacheable:
- Enabled
- Disabled

This item allows the video BIOS to be cached for faster video performance.

Default: Disabled

> **Video RAM Cacheable**

Video RAM Cacheable:
- Enabled
- Disabled

This item allows the Video RAM to be cached for faster video performance.

Default: Disabled

> **8 Bit I/O Recovery Time**
> **16 Bit I/O Recovery Time**

8 Bit I/O Recovery Time:	**16 Bit I/O Recovery Time:**
- 1	- 1
- 2	- 2
- 3	- 3
- 4	- 4
- 5	- NA
- 6	
- 7	This two items set timing parameters for 8-bit and 16-bit ISA expansion cards.
- 8	
- NA	**Default: 8-Bit I/O Recovery Time => 4**
	8-Bit I/O Recovery Time => 2

> **Memory Hole At 15M-16M**

Memory Hole At 15M-16M:
- Enabled
- Disabled

This item can be used to reserve memory space for some ISA cards that require it.

Default: Disabled

> **Passive Release**
> **Delayed Transaction**

Passive Release, Delayed Transaction:
- Enabled
- Disabled

These two items make the PCI Bus Compliant with the PCI Specification ver. 2.1.

Default: Enabled

> **AGP Aperture Size (MB)**

AGP Aperture Size (MB):
- 4
- 8
- 16
- 32
- 64
- 128
- 256

This item defines the effective memory size of the AGP Aperture.

Default: 64

> **Pentium II Micro Codes**

Pentium II Micro Codes:
- Enabled
- Disabled

This item defines the Pentium II Micro Codes which are used to resolve Pentium II CPU bugs. We recommend that you leave this item at the default value for better reliability.

Default: Enabled

> **CPU Clock Frequency**

III. CMOS SETUP UTILITY

CPU Clock Frequency:
- 66.8 MHz
- 68.5 MHz
- 75.0 MHz
- 83.3 MHz

This item allows you set CPU external clock.

Default: 66.8 MHz

3-5　Power Management Setup

This option displays a table of items which lets you control the power management of the system. Modern operating system take care of much of the routine power management. This mainboard supports ACPI (Advanced Configuration and Power Interface).

```
                ROM PCI/ISA BIOS (00000008)
                  POWER MANAGEMENT SETUP
                   AWARD SOFTWARE, INC.

 Power Management      : Disabled    ** Reload Global Timer Events **
 PM Control by APM     : Yes
 Video Off After       : Standby     IRQ[3-7,9-15],NMI  : Enabled
                                     Primary IDE 0      : Disabled
 Doze Mode            : Disabled     Primary IDE 1      : Disabled
 Standby Mode         : Disabled     Secondary IDE 0    : Disabled
 Suspend Mode         : Disabled     Secondary IDE 1    : Disabled
 HDD Power Down       : Disabled     Floppy Disk        : Disabled
 Modem Wake Up        : Disabled     Serial Port        : Enabled
 Lan Wake Up          : Disabled     Parallel Port      : Disabled
 VGA Active Monitor   : Enabled
 Power Button Override: Enabled
 RTC Wake Up Timer    : Disabled

 **  Break Event From Suspend  **    ESC : Quit        ↑↓→← : Select Item
                                     F1  : Help        PU/PD/+/- : Modify
 IRQ 8 Clock Event    : Disabled     F5  : Old Values  (Shift)F2 : Color
                                     F6  : Load Setup Defaults
                                     F7  : Load Turbo Defaults
```

➢ **Power Management**

Power Management:
- Max Saving
- Mix Saving
- User Define
- Disabled

This item allows you to set the default parameters of power-saving modes. Set to Disable to disable power management function. Set to User Define to define your own parameters.

Default: User Define

Mode	Doze	Standby	Suspend	HDD Power Down
Min Saving	1 hour	1 hour	1 hour	15 min
Max Saving	1 min	1 min	1 min	1 min

➢ **PM Controlled by APM**

PM Controlled by APM:
- Yes
- No

Set to Yes to transfer power management control to APM (Advanced Power Management) and enhance power saving function.

Default: Yes

➢ **Video Off After**

Video Off After:
- N/A
- Doze
- Standby
- Suspend

To select the power down mode option to turn off video monitor.

Default: Standby

III. CMOS SETUP UTILITY

> **Doze Mode**

Doze Mode:

- Disabled
- 1   Min
- 2   Min
- 4   Min
- 8   Min
- 12 Min
- 20 Min
- 30 Min
- 40 Min
- 1   Hour

This item lets you set the timer after which the system enters into Doze mode from working mode. The system event is detected by monitoring the IRQ signals or other I/O events.

Default: Disabled

> **Standby Mode**

Standby Mode

- Disabled
- 1   Min
- 2   Min
- 4   Min
- 8   Min
- 12 Min
- 20 Min
- 30 Min
- 40 Min
- 1   Hour

This item lets you set the timer after which the system enters into Standby mode from Doze mode.

In this mode, the monitor power-saving feature activates. Any activity detected returns the system to normal full power mode. The system activity is detected by monitoring the IRQ signals or other I/O events.

Default: Disabled

> **Suspend Mode**

<u>**Suspend Mode:**</u>
- Disabled
- 1   Min
- 2   Min
- 4   Min
- 8   Min
- 12 Min
- 20 Min
- 30 Min
- 40 Min
- 1   Hour

This item lets you set the time after which the system enters into Suspend mode from Standby mode. The system activity is detected by monitoring the IRQ signals or other I/O events.

Default: Disabled

➢ **HDD Power Down**

<u>**HDD Power Down:**</u>
- Disabled
- 1   Min
- .....
- 15 Min

This item allows you specify the IDE HDD idle time before the device enters the power down state. This item is independent from the power states, Standby and Suspend Mode.

Default: Disabled

➢ **Modem Wake Up**

<u>**Modem Wake Up:**</u>
- Enabled
- Disabled

To enable or disable Modem Wake Up function.

Default: Disabled

➢ **LAN Wake Up**

<u>**LAN Wake Up:**</u>
- Enabled
- Disabled

To enable or disable LAN Wake Up function.

Default: Disabled

➢ **VGA Active Monitor**

III. CMOS SETUP UTILITY

VGA Active Monitor:
- Enabled
- Disabled

To enable or disable the detection of VGA activity for power saving mode.

Default: Enabled

➢ **Power Button Override**

Power Button Override:
- Enabled
- Disabled

When set to Enabled, the power switch on the front panel can be used to control power On/Suspend/Off.

Press switch	System status
Less than 4 seconds	Suspend mode
Longer than 4 seconds	Power off

When set to Disabled, the power switch is only used to control On/Off, no Suspend mode function.

Default: Enabled

➢ **RTC Wake Up Timer**

RTC Wake Up Timer:
- Enabled
- Disabled

To enable or disable the RTC Wake Up function.

Default: Disabled

➢ **WakeUp Date (of Month)**

WakeUp Date (of Month):
- 0
- 1
- .....
- 31

This item displayed only when you enable the RTC Wake Up Timer item.

You can use this item to specify the date you want to wake up the system. For Example, if you set to 18, the system will wake up on the 18th day of every month. If set to 0, the system will wake up on the specified time every day.

➢ **WakeUp Time (hh:mm:ss)**

WakeUp Time (hh:mm:ss):
- hh:mm:ss

This item is displayed only when you enable the RTC Wake Up Timer item. You can use this item to specify the time you want to wake up the system.

➢ **IRQ 8 Clock Event**

IRQ 8 Clock Event:
- Enabled
- Disabled

OS/2 has periodically IRQ8 RTC(Real Time Clock) event. When set this item to enabled, OS/2 may has problem to go into Doze/Standby/Suspend mode.

Default: Disabled

➢ **IRQ [3-7,9-15],NMI**

IRQ [3-7,9-15],NMI:
- Enabled
- Disabled

To enable or disable the detection of IRQ3-7, IRQ9-15 or NMI interrupt events for power saving mode.

Default: Enabled

III. CMOS SETUP UTILITY

> ➢ **Primary IDE 0**
> ➢ **Primary IDE 1**
> ➢ **Secondary IDE 0**
> ➢ **Secondary IDE 1**
> ➢ **Floppy Disk**
> ➢ **Serial Port**
> ➢ **Parallel Port**

Primary/Secondary IDE 0/1, Floppy, Serial & Parallel Port:
- Enabled
- Disabled

These items enable or disable the detection of IDE, Floppy, Serial and Parallel port activities for power saving mode.

Default: Serial Port => Enabled

Others => Disabled

3-6 PNP/PCI Configuration

This option display a table of items that configures how PNP (Plug and Play) and PCI expansion cards operates in your system.

```
                  ROM PCI/ISA BIOS (00000008)
                    PNP/PCI CONFIGURATION
                     AWARD SOFTWARE, INC.

 PNP OS Installed        : No        PCI IDE IRQ Map To    : PCI-AUTO
 Resources Controlled By : Manual      Primary   IDE INT#  : A
 Reset Configuration Data : Disabled    Secondary IDE INT#  : B

 IRQ-3  assigned to : Legacy ISA    Used MEM base addr    : N/A
 IRQ-4  assigned to : Legacy ISA
 IRQ-5  assigned to : PCI/ISA PnP
 IRQ-7  assigned to : PCI/ISA PnP   PCI Slot1 IRQ (Right) : Auto
 IRQ-9  assigned to : PCI/ISA PnP   PCI Slot2 IRQ         : Auto
 IRQ-10 assigned to : PCI/ISA PnP   PCI Slot3 IRQ         : Auto
 IRQ-11 assigned to : PCI/ISA PnP   PCI Slot4 IRQ (Left)  : Auto
 IRQ-12 assigned to : PCI/ISA PnP
 IRQ-14 assigned to : PCI/ISA PnP
 IRQ-15 assigned to : PCI/ISA PnP
 DMA-0  assigned to : PCI/ISA PnP
 DMA-1  assigned to : PCI/ISA PnP   ESC : Quit      ↑↓→← : Select Item
 DMA-3  assigned to : PCI/ISA PnP   F1  : Help      PU/PD/+/- : Modify
 DMA-5  assigned to : PCI/ISA PnP   F5  : Old Values  (Shift)F2 : Color
 DMA-6  assigned to : PCI/ISA PnP   F6  : Load Setup Defaults
 DMA-7  assigned to : PCI/ISA PnP   F7  : Load Turbo Defaults
```

III. CMOS SETUP UTILITY

➢ **PnP OS Installed**

PnP OS Installed:
- Yes
- No

Normally, BIOS will allocate the PnP resources during POST (Power-On Self Test). Set this item to Yes if you have a PnP operating system such as Windows 95, BIOS will bypass PNP device initial except of boot device (VGA/IDE or SCSI) and PNP operating system will do these PNP devices resource allocation. If this item is set to No, BIOS will handle all PNP devices.

Default: No

➢ **Resources Controlled By**

Resources Controlled by:
- Auto
- Manual

Basically, BIOS will allocate the IRQ/DMA resources automatically for these PNP/PCI and onboard devices. The exception might be encountered when legacy ISA devices are installed, which occupies resources that BIOS can not know. Therefore, this option is for BIOS to know in advance that IRQ/DMA is occupied by legacy ISA devices if Manual is selected.

Default: Manual

➢ **Reset Configuration Data**

Reset Configuration Data:
- Enabled
- Disabled

When this item is set to Enabled, BIOS will turn it Disabled again in the next boot up. This item is for clearing ESCD data. The only reason to clear is the data loosing the confidence. The engineering test is a good reason to change the default setting.

Default: Disabled

III. CMOS SETUP UTILITY

➢ **IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, IRQ12, IRQ14, IRQ15**

IRQ 3-5, 7, 9-12, 14-15:
Legacy ISA
PCI/ISA PnP

Set the selected IRQ to Legacy ISA if your ISA card is not PnP compatible card and requires a special IRQ to make it funtion.

These options provide IRQ resources allocation for Legacy ISA or PCI/ISA PnP card.

Default: IRQ 3~4 => Legacy ISA

Others =>PCI/ISA PnP

➢ **DMA 0**
➢ **DMA 1**
➢ **DMA 3**
➢ **DMA 5**
➢ **DMA 6**
➢ **DMA 7**

DMA 0,1,3,5-7:
- Legacy ISA
- PCI/ISA PnP

Set the selected DMA channel to Legacy ISA if your ISA card is not PnP compatible card and requires a special DMA channel to make it function.
.

Default: PCI/ISA PnP

➢ **PCI IDE IRQ Map To**

PCI IDE IRQ Map To:
- ISA
- PCI-Slot1
- PCI-Slot2
- PCI-Slot3
- PCI-Slot4
- PCI-Auto

This is a complement for the case that an ISA or PCI add-on IDE card is installed. Since most of PCI add-on IDE cards are not PCI Compliant, a location and INT# inputs are necessary for acknowledging to BIOS.

Set this item to PCI-Auto to allow BIOS to configure the installed PCI IDE card automatically .

Default: PCI-Auto

➢ **Primary IDE INT#**
➢ **Secondary IDE INT#**

Primary/Secondary IDE INT#: - A - B - C - D	Each PCI slot has four PCI interrupts (INT) aligned as listed , A, B, C, D. You should specify the slot in the "PCI IDE IRQ Map To", and set the PCI interrupt (INT) here to the interrupt connection on the card. Use this item to specify the interrupt of the primary/ secondary channel of the PCI IDE add-on card.

Default: Primary IDE INT# => A

Secondary IDE INT# => B

➢ **Used MEM Base Addr**

Used MEM base addr: - N/A - C800 - CC00 - D000 - D400 - D800 - DC00	This item lets you set a memory space for non-PnP ISA card and specifies the memory base of the reserved memory space. **Default: N/A**

➢ **Used MEM Length**

Used MEM Length: - 8K - 16K - 32K - 64K	This item is displayed when the above Used MEM base addr option is not set to N/A. If your ISA card is not PnP card and requires special memory space to make it function, use item to set the memory size to inform the PnP BIOS to reserve the specified memory space for installing legacy ISA card.

III. CMOS SETUP UTILITY

➢ **PCI Slot4 IRQ (Right)**
➢ **PCI Slot3 IRQ**
➢ **PCI Slot2 IRQ**
➢ **PCI Slot1 IRQ (Left)**

<u>**PCI Slot 1 to PCI
Slot4 IRQ:**</u>

- 3
- 4
- 5
- 7
- 9
- 10
- 11
- 12
- 14
- 15
- Auto

These items allow you manually assign an specified IRQ to each PCI slot.

Leave this item at default "Auto", BIOS will automatically assign an available IRQ to the device on each PCI slot.

3.7 Load Setup Defaults
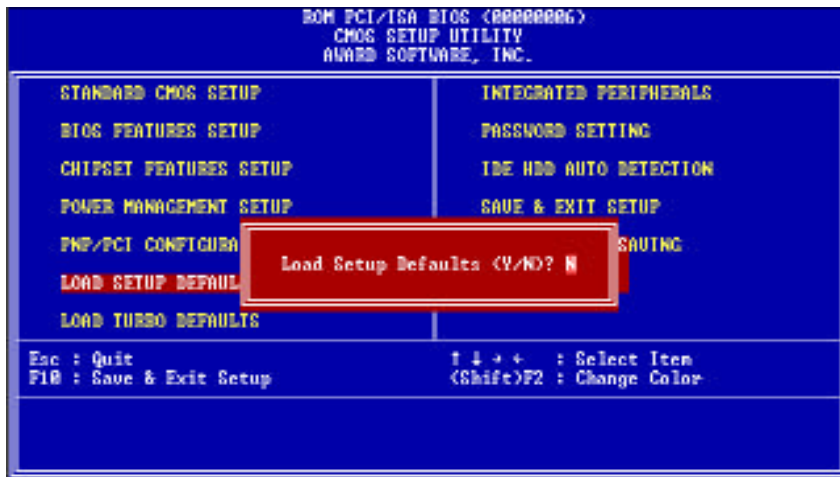
III. CMOS SETUP UTILITY

This option allows you load BIOS optimized settings for optimum system performance. We recommend you to use the Optimal settings if your system has large memory size and fully loading with add-on cards.

To load Setup Default, press Y key to confirm the operation when you see the above display.

3-8   Load Turbo Defaults

```
                    ROM PCI/ISA BIOS (00000006)
                        CMOS SETUP UTILITY
                        AWARD SOFTWARE, INC.

    STANDARD CMOS SETUP              INTEGRATED PERIPHERALS

    BIOS FEATURES SETUP             PASSWORD SETTING

    CHIPSET FEATURES SETUP          IDE HDD AUTO DETECTION

    POWER MANAGEMENT SETUP          SAVE & EXIT SETUP

    PNP/PCI CONFIGURA                              SAVING
                     Load Turbo Defaults (Y/N)? N
    LOAD SETUP DEFAUL

    LOAD TURBO DEFAULTS

    Esc : Quit                  ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup     (Shift)F2 : Change Color
```
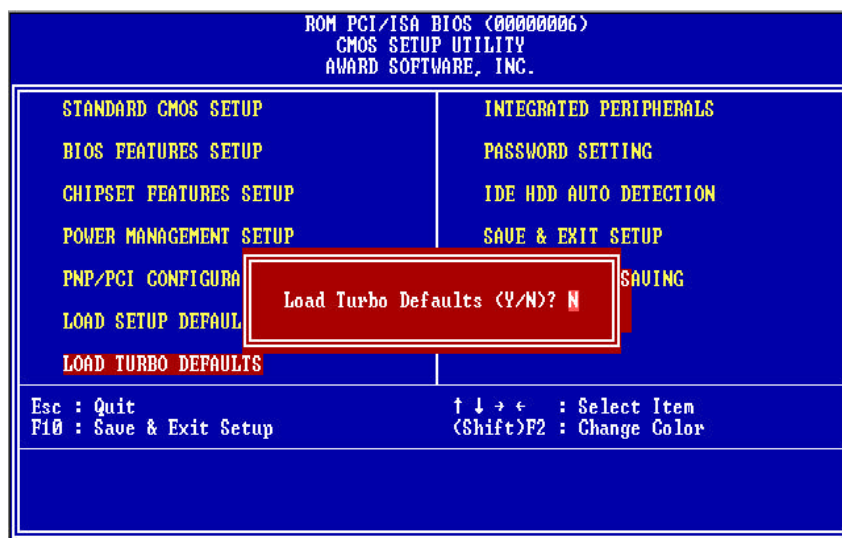
This option provides better performance than optimal setup values. Load the turbo values if you have light system loading, that is, few add-on cards and memories.

If your system has heavy loading (more add-on cards and memories), you may manually set the parameters in the "Chipset Features Setup" to get proper setting to get the best system performance. Before changing any settings in the "Chipset Features Setup", be sure that you understand the functions of every item.

III. CMOS SETUP UTILITY

3-9 Integrated Peripherals

This option allows you to configure the I/O features.

```
                    ROM PCI/ISA BIOS (00000008)
                       INTEGRATED PERIPHERALS
                         AWARD SOFTWARE, INC.

   IDE HDD Block Mode     : Enabled    Onboard Parallel Port    : 378/IRQ7
   IDE Primary Master PIO  : Auto      Parallel Port Mode       : SPP
   IDE Primary Slave  PIO  : Auto
   IDE Secondary Master PIO : Auto
   IDE Secondary Slave  PIO : Auto
   IDE Primary Master UDMA  : Auto
   IDE Primary Slave  UDMA  : Auto
   IDE Secondary Master UDMA: Auto
   IDE Secondary Slave  UDMA: Auto
   On-Chip Primary   PCI IDE: Enabled
   On-Chip Secondary PCI IDE: Enabled
   USB Legacy Support      : Disabled
   USB IRQ Released         : No
   Flash/Upgrade BIOS      : Enabled

   Onboard FDC Controller   : Enabled   ESC : Quit        ↑↓→← : Select Item
   Onboard Serial Port 1    : Auto      F1  : Help        PU/PD/+/- : Modify
   Onboard Serial Port 2    : Auto      F5  : Old Values  (Shift)F2 : Color
   UR2 Mode                 : Standard  F6  : Load Setup Defaults
                                        F7  : Load Turbo Defaults
```

➢ **IDE HDD Block Mode**

IDE HDD Block Mode:
- Enabled
- Disabled

This BIOS supports the enhanced IDE specification and allow multiple sectors access in a time when read/write. If set this item to disabled, IDE runs in single sector access.

Default: Enabled

> **IDE Primary Master PIO**
> **IDE Primary Slave PIO**
> **IDE Secondary Master PIO**
> **IDE Secondary Slave PIO**

IDE Primary/Secondary Master/Secondary PIO:
- Auto
- Mode 1
- Mode 2
- Mode 3
- Mode 4

Set these items to Auto to auto-detect the HDD speed. The PIO mode specifies the data transfer rate of HDD.

IDE HDD Mode	Transfer Rate
Mode 0	3.3MB/s
Mode 1	5.2MB/s
Mode 2	8.3MB/s
Mode 3	11.1MB/s
Mode 4	16.6MB/s.

Set to slower mode if your hard disk performance becomes unstable.

Default: Auto

> **IDE Primary Master UDMA**
> **IDE Primary Slave UDMA**
> **IDE Secondary Master UDMA**
> **IDE Secondary Slave UDMA**

IDE Primary/Secondary Master/Slave UDMA:
- Auto
- Disabled

These items allows you to set the Ultra DMA/33 mode supported by the IDE hard disk drive installed in your system.

Default: Auto

III. CMOS SETUP UTILITY

➢ **On-Chip Primary PCI IDE**
➢ **On-Chip Secondary PCI IDE**

On-Chip Primary/Secondary PCI IDE:
- Enabled
- Disabled

To enable or disable the IDE device connected to the Primary/Secondary IDE connector.

Default: Enabled

➢ **USB Legacy Support**

USB Legacy Support:
- Enabled
- Disabled

This BIOS simulates USB keyboard in legacy mode, which means during POST or under operating system, you can use a USB keyboard without loading USB driver. Note you can not use both USB driver and USB legacy keyboard at the same time. Set disabled if you have USB driver in the operating system.

Default: Disabled

➢ **USB IRQ Released**

USB IRQ Released:
- Yes
- No

This item allows you to release USB controller IRQ if you do not have any USB device or your system IRQ are not enough for add-on cards allocation.

Default: No

➢ **Flash/Upgrade BIOS**

Flash/Upgrade BIOS:
- Enabled
- Disabled

This item allows you to protect your mainboard BIOS being flashed/upgraded by MAXFLASH.EXE flash utility if you set this item disabled.

You can specify the BIOS password to avoid that someone can change your setting.

Default: Enabled

➢ **Onboard FDC Controller**

<u>**Onboard FDC Controller:**</u> - Enabled - Disabled	To enable or disable the onboard floppy disk controller. Set to disabled if you want to use a separate floppy disk controller card. **Default: Enabled**

➢ **Onboard Serial Port 1**
➢ **Onboard Serial Port 2**

<u>**Onboard Serial Port 1 & 2:**</u> - Auto - 3F8/IRQ4 - 2F8/IRQ3 - 3E8/IRQ4 - 2E8/IRQ3 - Disabled	This item allows you to select the I/O port and IRQ used by the onboard serial ports. **Default: Onboard Serial Port 1=>3F8/IRQ4** **Onboard Serial Port 2=>2F8/IRQ3**

➢ **Onboard UART Mode**

<u>**Onboard UART Mode:**</u> - Standard - IrDA - ASKIR	This item is selectable only when the onboard serial port 2 is enabled. The available mode selections for the serial port 2 are Standard, IrDA, and ASKIR. **Standard**: Configures serial port as normal mode. **IrDA**: Set to this setting if there is an infrared device connected on the onboard IrDA connector. The maximum baud rate of this setting is: 115K baud. **ASKIR**: Set to this setting if there is an infrared device connected on the onboard IrDA connector. The maximum baud rate of this setting is: 19.2K baud. **Default: Standard**

III. CMOS SETUP UTILITY

➢ **Onboard Parallel Port**

Onboard Parallel Port:
- 3BC/IRQ7
- 378/IRQ7
- 278/IRQ7
- Disabled

This item controls the onboard parallel port address and interrupt.

Default: 378/IRQ7

➢ **Parallel Port Mode**

Parallel Port Mode:
- SPP
- EPP
- ECP
- ECP + EPP

This item allows you to set the parallel port mode.

1. **SPP (Standard Parallel Port):** IBM AT and PS/2 compatible mode

2. **EPP (Enhanced Parallel Port):** To enhances the parallel port by directly write/read data to/from parallel port without latch.

3. **ECP (Extended Parallel Port):** ECP supports DMA and RLE (Run Length Encoded) compression and decompression.

Default: SPP

➢ **ECP Mode Use DMA**

ECP Mode Use DMA:
- 3
- 1

This item displayed when select the ECP mode above for the parallel port. You can set the DMA channel of ECP mode.

Default: 3

3-10 Password Setting

Password prevents unauthorized use of your computer. If you set a password, the system prompts for the correct password before boot or access to Setup, the steps as follows,

1. Highlight the item Password Setting on the main menu and press ENTER.
2. The password dialog box will appear.
3. If you are installing a new password, carefully type in the password. Press ENTER after you have typed in the password. If you are deleting a password that is already installed just press ENTER when the password dialog box appears.
4. The system will ask you to confirm the new password by asking you to type it in a second time. Carefully type the password again and press ENTER, or just press ENTER if you are deleting a password that is already installed.
5. If you typed the password correctly, the password will be installed.

[Note]

If you forget your password, or you want to cancel your password, you can do the steps as the following,

(1) Password forgotten:
　　i> Turn off the system
　　ii> Short JP1 at Pin 2-3 for a few seconds to clear CMOS.
　　iii> Set the JP1 back to Pin 1-2.
　　iv> Power on the system.

(2) Clear Password:
　　Clear your password by key-in the password you installed before,
　　then go to PASSWORD SETTING to press ENTER twice.

III. CMOS SETUP UTILITY

3-11 IDE HDD Auto Detection

This item automatically detects and installs any hard disk drives installed on the primary and secondary IDE channel. Most modern drives can be detected. If you are using a very old drive that can not be detected, you can install it manually using the Standard CMOS Setup option. Setup will check for two devices on the primary IDE channel and then two devices on the secondary IDE channel. At each device, the system will flash an N in the dialog box. Press Enter to skip the device and proceed to the next device. Press Y, then Enter to tell the system to accept the BIOS auto-detected device type.

3-12 Save & Exit Setup

Highlight this item and press ENTER to save the changes that you have made in the setup utility and exit the setup program. When the *Save and Exit* dialog box appears, press Y to save and exit, or press N to return to the setup main menu.

3-13 Exit without Saving

Use this option to exit Setup Utility without saving the CMOS value changes.

SECTION 4.
BIOS/SOFTWARE UTILITY

4-1   Flash Utility MAXFLASH.EXE

This section tells you a step-by-step procedure on how to use the flash utility, "maxflash.exe", upgrade your mainboard BIOS.

To upgrade your motherboard BIOS, please follow the following:

1. For Win95 system, press F8 before Win95 boot-up, and select "Safe mode command prompt only".
   For Non-Win95 system, boot-up the system into DOS prompt with a bootable floppy disk.
   !!!DO NOT load any memory manager like EMM386.EXE, QEMM386.EXE under config.sys.!!!
2. Run **A:>maxflash biosfile.bin**
3. After loading the new BIOS code, the utility will prompt you to save original BIOS code into your HDD or floppy. Please press "Y" to store it as "BIOS.OLD".
4. After the old BIOS has been successfully saved, press "Y" to replace BIOS.
5. After the flashing process, reboot the system by turn off the power.
   !!! DO NOT TURN OFF THE POWER DURING THE FLASHING PROCESS. !!!
6. Press "DEL" key to enter BIOS setup during POST. Reload the "BIOS SETUP DEFAULT" and reconfigure other items as your previous set
7. Then save and exit.

IV.BIOS/SOFTWARE UTILITY

4-2   BIOS Flash/Upgrade Protection

This mainboard supports BIOS Flash/Upgrade protection which allows you protect your system BIOS being flashed by flash utility. We suggest you use this feature with Password Setting in BIOS to prevent your BIOS being flashed by flash utility.

To active the BIOS Flash/Upgrade protection, follow the steps below:
1. When the system boot up at POST (Power On Self- Test), press <Del> key to enter BIOS Setup Utility.
2. Set the "Flash/Upgrade BIOS" item in the "Integrated Peripherals" to Disabled.
3. Save the changes and exit Setup Utility.

4-3   Remove Question Marks "?" in Win95 Device Manager

Since some of Intel 440LX/EX latest technologies, like "ACPI", "USB" & "Ultra DMA/33", are so new, Win95 did not support them on Aug. of 1995 which is the moment Win'95 formal released.

To solve this problem, please use the Win95 patch utility – winp2x4.exe. You can find this utility in the bundled CD title.

For using this utility, run winp2x4.exe in the Win95 DOS prompt and refer the proper Windows directory for the updated files to be copied.

4-4   Install Bus Master IDE (Ultra DMA/33) Driver

The Bus Master IDE(Ultra DMA/33) driver is available in the bundled CD title. You may run setup.exe directly to install the driver.

After installation, you will see following devices under Win95 Device Manager:

--- Hard Disk Controllers
   Intel 82371AB PCI Bus Master IDE Controller
   Primary Bus Master IDE Controller
   Secondary Bus Master IDE Controller