LXB/EXB Mainboard

User's Manual

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 ates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause harmful interference to radio 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.
- 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.

Version 1.0

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Chapter 1 : Package & Product Information

Chapter 2 : Reconfiguring your mainboard

Chapter 3 : CMOS Setup Utility Summary

Chapter 4 : Motherboard BIOS Upgrade

Chapter1: Package & Product Information

This Manual contains all the information and features that show you how to use the LXB/EXB 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 four chapters:

Chapter 1:Package & Product Information

A brief overview of what comes in the mainboard package and the feature it appears.

Chapter 2:Reconfiguring your Mainboard

How to change or upgrade the mainboard by jumper settings

Chapter 3:CMOS Setup Utility Summary

A summary of the mainboard settings and specifications.

Chapter 3:Motherboard BIOS Upgrade

1-2 Check list

LXB/EXB mainboard package contains the following items. Please inspect the package contents and confirm that everything is there . If anything is missing or damaged, call your vendor for instructions before operating.

The package includes:

- LXB/EXB Mainboard
- One Floppy & IDE cable
- One CD tiltle for Bus Master drivers & Utilities
- User's Manual
- Pentium II Retention Module
- One Serial port bracket
- One Paralle port & PS/2 Mouse bracket
- Quick Installation guide

1-3 Mainboard Specifications

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

The mainboard includes the following features:

- ■ AT form factor Motherboard
- ■ Intel 440 LX AGP Chipsets
- ■ Switching power provides CPU CORE voltage from 2.0V to 3.5V
- ■ Supports 1 x AGP bus, 4 x PCI BUS with Master mode and 2 x ISA BUS.
- ■ Supports recoverable fuse for USB and KB/MOUSE
- ■ Dual PCI IDE port up to 4HDDs (PIO mode 4, DMA mode 2, or Ultra DMA 33)
- ■ Multi-Boot by IDE, SCSI, CDROM, FDD, ZIP and LS-120
- ■ Provides dual ATX (20-pin) and AT(12-pin) power connectors and ATX power supports Suspend Switch, Power Button, Modem Ring On, Wake On LAN, and Alarm Wake Up
- ■ Award BIOS
- ■ Supports Advanced Configuration and Power Interface (ACPI) Specification and OS Directed Power Management

- ■ Year 2000 Compliance

- Supports Pentium II/Celeron CPUs with Slot 1 socket, the maximum speed up to 333MHz or above.
- Supports 64-Mbit(16Mx4, 8Mx8, 4Mx16) EDO DRAM/ SDRAM technology
- 3x168-pin DIMM to support SDRAM/EDO DRAM up to 384MB
- Onboard PCI Bus Master IDE interface supports 4 IDE devices with 2 channels; BIOS supports 4 IDE hard drives drives which do not need device driver for S/W application and the capacity of each harddisk can be larger than 528MB and up to 136GB
- PCI IDE Controller supports PIO Mode 0 to Mode 4, Ultra DMA/33 at maximum transfer rate of 33 MB/s, and Bus Master IDE DMA Mode 2
- Supports 2.88MB, ZIP, and IDE LS-120 FDD; bootable from floppy, HDD, CD-ROM, SCSI, NetWork, LS-120, ZIP, or others
- Onboard super Multi-I/O chip supports 2 serial ports with 16C550 fast UART compatible, 1 parallel port with EPP and ECP capabilities, and one floppy disk drive interface
- Supports PS/2 Mouse connector
- Floppy Disk supports 360KB/720KB/1.2MB/1.44MB/ 2.88MB

1-4 Layout
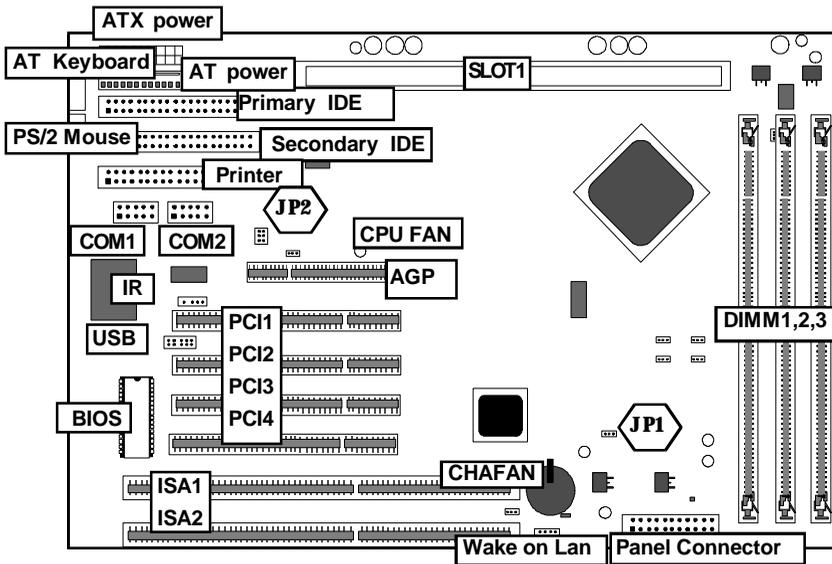
Jumpers & Connectors

The illustration above shows the location of the jumpers, ports and other connectors on the mainboard.

Panel Connector
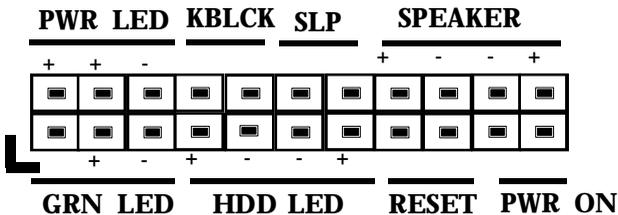
1-5 Hardware Control & Indicator Connectors

There are some control features and status indicators that connect from the mainboard to your system case, these are:

- Power Switch
- Power Status Indicator
- Reset Switch
- Hard Disk Drive Activity Indicator
- Keyboard Lock
- Suspend Status Indicator

Name	Function
SLOT 1	For Pentium II CPU Connector
Primary IDE	40 pin connector connects to 2 device cable; End device is Primary Master, middle is Slave
Secondary IDE	40 pin connector connects to 2 device cable; End device is Secondary Master, middle is Slave
AT Keyboard	AT Keyboard Connector
PS/2 Mouse	PS/2 Mouse Connector
Printer	Standard parallel port supports enhanced modes
COM1	Onboard 9-pin serial port, can be set to COM3
COM2	Onboard 9-pin serial port, can be set to COM4
USB	Universal Serial Bus ports, two stacked ports
IR	IR header
CPU FAN	For cooling fan power cable
CHAFAN	Chassic FAN or system FAN
ATX power	ATX Power Supply Connector
AT power	AT Power Supply Connector
JP1	CMOS RAM Clear Selector
JP2	CPU Clock Ratio
Wake on Lan	Lan Wake up Connector

1-6 P2LXB System Block Diagram

Pentium II® Processor

Host Bus

DIMM x 3

PCI/AGP Controller FW82443LX

DIMM 168 pins

AGP Slot x 1

PCI Bus

PCI Slot x 4

PIIX4 FW82371AB/EB

Primary IDE

Secondary IDE

ISA Bus

USB

Super I/O ITE IT8679/IT8687

ISA Slot x 2
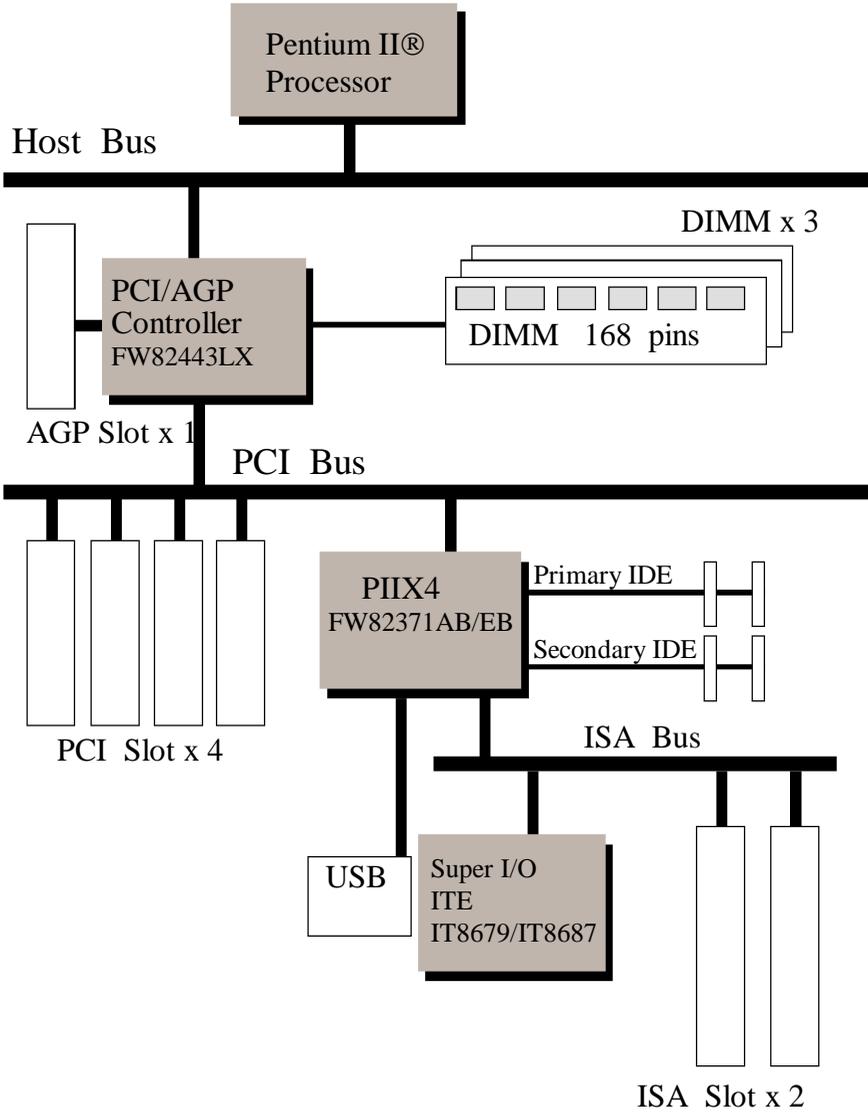
Chapter 2:Reconfiguring your Mainboard

2-1 Jumper Settings

Here is the jumpers location / setting as follows,
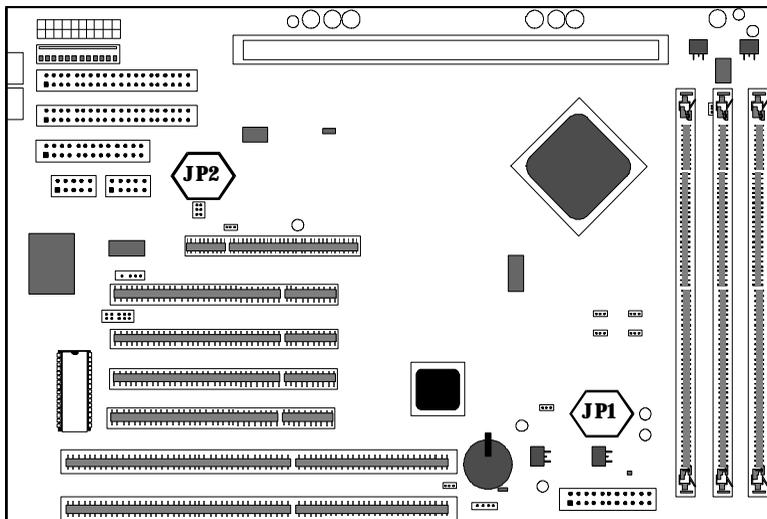
2-2 CMOS Clear Setting

JP1: CMOS CLEAR

CMOS	JP1	Setting
*NORMAL	1-2	
CLEAR	2-3	
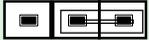
*: Default setting

2-3 CPU Clock Setting

CLK RATIO	CPU TYPE	JP2		
3.5X	233MHz	1-2	-	-
*4X	266MHz	-	3-4,	5-6
4.5X	300MHz	-	3-4	-
5X	333MHz	-	-	5-6

JP2: CPU CLOCK RATIO   ***: Default setting**

CLK RATIO/CPU TYPE

3.5X/233MHz
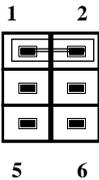
*4X/266MHz

4.5X/300MHz
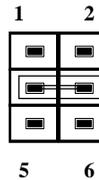
5X/333MHz

2-4 Panel Connector

```
     PWR LED  KBLCK   SLP      SPEAKER
      +   +   -                 +   -   -   +
   2  [■][■][■] [■][■] [■][■] [■][■][■][■]  22
   1  [■][■][■] [■][■] [■][■] [■][■][■][■]  21
          +   -   +   -   -   +
     GRN LED   HDD LED     RESET  PWR ON
```
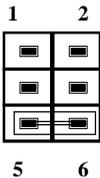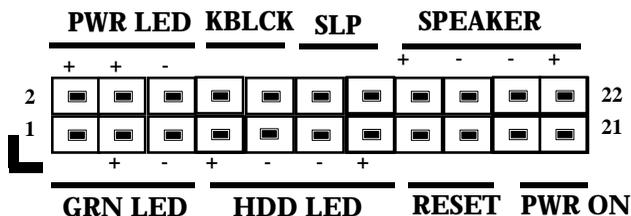
- **GRN LED**: Green LED(Pin1,3,5)
- **HDD-LED**:HDD LED Connector(Pin7,9,11,13)
- **RESET**:Reset Switch Connector(Pin15,17)
- ***PWR ON**:ATX Power Button and Suspend Switch(Pin19,21)
- **Power LED** Connector(Pin2,4,6)
- **KBLCK**:Keylock Connector(Pin8,10)
- **SLP**:Suspend LED Connector(Pin12,14)
- **SPEAKER**:Speaker Connector(Pin16,18,20,22)

*PWR ON: ATX Power Button 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 described 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 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.

2-5 System Memory Installation

The mainboard lets you add up to 384 MB of system memory through DIMM sockets on the board. Three DIMM sockets on the board that are divided into 3 banks: Bank1, Bank2, Bank3. Each bank consists 168-pin DIMM modules. The mainboard supports the following memory configurations. We suggest you use the same type DIMM modules for better compatibility.

Bank	Memory Module
Bank1 DIMM1 (168-pin DIMM)	8MB, 16MB, 32MB, 64MB 128MB
Bank2 DIMM2 (168-pin DIMM)	8MB, 16MB, 32MB, 64MB 128MB
Bank3 DIMM3 (168-pin DIMM)	8MB, 16MB, 32MB, 64MB 128MB
Total System Memory= Bank1+ Bank2+ Bank3	

Memory Combinations

3 DIMM sockets support up to 384MB. Memory combinations such as 8MB, 16MB, 24MB, 32MB, 40MB, 48MB, 64MB, 72MB, 80MB, 96MB, 128MB, 144MB, 160MB, 192MB.....384MB and etc. The following table is an example for your reference:

[ex]

| DIMM 1	DIMM2	DIMM3	TOTAL
8MB	X	X	8MB
X	8MB	X	
X	X	8MB	
16MB	X	X	16MB
X	16MB	X	
X	X	16MB	
8MB	16MB	X	24MB
8MB	X	16MB	
X	8MB	16MB	
X	16MB	8MB	
16MB	8MB	X	
16MB	X	8MB	
32MB	X	X	32MB
16MB	16MB	X	
.			
.			
.			
128MB	128MB	128MB	384MB

Chapter 3:CMOS Setup Utility Summary

This chapter describes Award BIOS setup for P2LXB. To run the CMOS Setup Utility, press the <Del> or <Delete> key while the computer is staring up, before the operating starts to load. The utility's main screen will appear as shown on the following screen .

To navigate the program, use the controls shown on the screen. The utility has several sections. Many of the features configured by the utility are set to operate automatically when the "Setup Defaults", the recommended mode, are used. With Setup Defaults loaded you can still customize various setting.

Quick Setup: This is a recommendation for your first installing system. Just select **"LOAD SETUP DEFAULT"** while entering **Main Menu Setup** then type [F10] to save and exit setup.

3-1 Main Menu

```
                    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
```
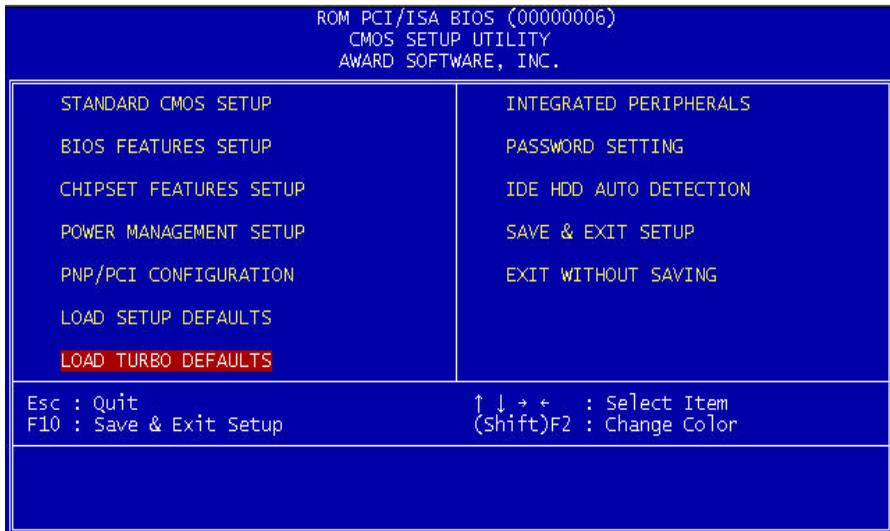
This option displays a table of items which defines basic information about your system.

Menu Commands

If you look at the lower portion of the screen illustration you'll see a section that lists the control commands for this level of the program. The program commands are:

Quit

This command will close the Setup program when you press the <ESC> key.

Help

This displays information about the highlighted item when you press the <F1> key.

Select Item

You can use the arrow keys on your keyboard to move around the screen and select a menu item. An item is highlighted when it is selected.

Change Color

You can change the program color scheme by pressing "<Shift>+<F2>"

There are 13 main sections to the Setup program:

Standard CMOS Setup

Date, time, disk drive, video display and error handling.

BIOS Features Setup

System customization features and video display memory Shadow settings.

Chipset Features Setup

Chipset settings, memory configuration feature for specialized add-on cards and VGA memory configuration.

Power Management Setup

Sets up the "green" power management features.

PNP/PCI Configuration

PCI expansion slot and system resource settings

Load SETUP Defaults

Loads minimum settings from the BIOS ROM.

Load TURBO Defaults

Loads optimized settings from the BIOS ROM.

Integrated Peripherals

Settings for the IDE channels and onboard ports.

Password Setting

Sets a system password which is configured by the
Security Option item in BIOS Features Setup.

IDE HDD Auto Detection

Automatically detects the drive parameters of any
installed IDE hard disk drives and enters them
automatically in the Standard CMOS Setup.

Save & Exit Setup

Saves the current settings and exits the program.

Exit Without Saving

Disregards any changes made during the current session
and exits the program.

3-2 Standard CMOS Setup

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

   Date (mm:dd:yy) : Fri, Apr 24 1998
   Time (hh:mm:ss) : 23 : 27 : 19

   HARD DISKS          TYPE    SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE

   Primary Master   : None      0      0    0     0      0      0 ------
   Primary Slave    : None      0      0    0     0      0      0 ------
   Secondary Master : None      0      0    0     0      0      0 ------
   Secondary Slave  : None      0      0    0     0      0      0 ------

   Drive A : None
   Drive B : None                          Base Memory:       0K
                                       Extended Memory:       0K
   Video   : EGA/VGA                      Other Memory:     512K
   Halt On : All Errors
                                          Total Memory:     512K

   ESC : Quit            ↑ ↓ → ←  : Select Item    PU/PD/+/- : Modify
   F1  : Help          (Shift)F2 : Change Color
```

This option displays a table of items which defines basic information about your system.

Date (mm:dd:yy)

Time (hh:mm:ss)

The Date and Time items show the current date and time held by your computer.

Hard Disks

- Primary Master

- Primary Slave

- Secondary Master

- Secondary Slave

The item reserve"Auto/User/None" options. Defaulted "Auto" is recommended.

Floppy
 - Drive A
 - Drive B
The system supports up to 2.88MB, 3.5" floppy type.

Video
This item defines the video mode of the system. The default value is for the VGA standard which is supported by all current display adapters. If you wish to use an older display adapter which does not support VGA, you can select one of the earlier video standards such as CGA or Hercules.

Halt on
This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which kind of errors in the POST are sufficient to halt the system.

3-3 Bios Feature Setup

```
                    ROM PCI/ISA BIOS (00000006)
                        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 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
```

This option displays a table of items which defines more advanced information about your system. You can make modifications to most of these items without introducing fatal errors to your system.

Virus Warning

When this item is enabled it provides some protection against viruses which try to write to the boot sector and partition table of your harddisk drive. This item is Disabled as a default so that you can install an operating system. We recommend that you enable Virus Warning as soon as you have installed your disk with an OS.

Default:Disabled

External Cache

This item controls Enabled/Disabled the external L2 cache.

Default:Enabled

CPU L2 Cache ECC Checking

This item can be used to enable ECC (error checking and correction) for the level-2 cache memory. When the item is enabled, BIOS will automatically check if CPU support L2 ECC and the ECC funtion will be unavailable for selecting if CPU does not support L2 ECC.

Default:Enabled

Quick Power On Self Test

This item can be used to start Operating System quickly and test itself.

Default:Enabled

Boot Sequence

This item defines where the system will look for an operating system, and the order of priority. You can boot an operating system from many locations including a SCSI device, a ZIP drive, a floppy diskette drive, CD-ROM or an LS-120 high-capacity diskette drive.

Default:A,C, SCSI

SWAP Floopy Drive

If you have two floppy diskette drives in your system, this item allows you to swap around the assigned drive letters so that dirve A becomes drive B, and dirve B becomes drive A.

Default:Disable

Boot Up Floppy Seek

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

Default:Disable

Boot Up Numlock Status

This item defines if the keyboard Num Lock key is active when your system is started.

Default:On

Boot Up System Speed

This item allows the system to boot an operating system quickly.

Default:High

Typematic Rate Setting

This option controls the speed of keyboard to send keys (scan/make

codes) and scan the key matrix of the key pad.

Default:Disabled

Typematic Rate (Chars/Sec)

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

Default:6

Typematic Delay (Msec)

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

Default:250

Security Option

This option is for password request in entering setup or boot.

Default:Setup

PCI/VGA Palette Snoop

It helps to promote VGA access efficiency when both PCI VGA and PCI graphic accelerator device are installed on separate boards.

Default:Disabled

OS Select For DRAM > 64MB

This item is to patch OS/2 that can not report correct memory size for more than 64MB.

Default:Non-OS/2

Video BIOS Shadow

This option 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:Enable

C8000-CBFFF Shadow/DC000-DFFFF Shadow

This option defines if you leave enabled setting, BIOS will copy this area from ROM to RAM. We recommend you leave the default setting.

Default:Disabled

3-4 Chipset Feature Setup

```
ROM PCI/ISA BIOS (00000006)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration        : Enabled     Pentium II Micro Codes  : Enabled
                                        Spread Spectrum         : Enabled
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      : x222
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  : 1     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
```

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

Auto Configuration

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

Default:Enabled

DRAM Speed Selection

This option can set the DRAM speed, 50ns or 60ns.

Default:60ns

MA Wait State

This item defines MA Wait state. Set it to Fast when DRAM loading is heavy or the speed is lower.

Default:Slow

EDO RAS# To CAS# Delay

It means the burst clocks spent in the first memory access cycle when read/write miss is encountered.

Default:2

EDO RAS# Precharge Time

The function as similiar as the front one.

Default:3

EDO DRAM Read Burst

It means the four continuous memory reading during burst cycle.

Default:X222

EDO DRAM Write Burst

It means the four continuous memory writing during burst cycle.

Default:X222

SDRAM(CAS Lat/RAS-to-CAS)

This item defines SDRAM CAS Latency and RAS to CAS Delay.

Default:3/3

SDRAM RAS Precharge Time

This item defines SDRAM RAS Precharge Time.

Default:3T

DRAM ECC Function

This item enables or disables ECC (error checking and correction) for the main memory. We recommend that you leave this item at Enabled if you have verified that your memory modules support ECC. To use this funtion, you need 72 bits (64+8 bit parity) DIMM.

Default:Disabled

CPU-To-PCI IDE Posting

This item enables CPU to PCI IDE posting. Set it Disable if you have any IDE incompatible problem.

Default:Enabled

Video BIOS Cacheable

Video RAM Cacheable

These two items allow the system and video BIOS to be cached for faster performance.

Default:Disabled

8 Bit I/O Recovery Time

16 Bit I/O Recovery Time

These two items set timing parameters for 8-bit and 16-bit ISA expansion cards.

Default:4
Default:2

Memory Hole At 15M-16M

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

Default:Disabled

Passive Release

Delayed Transaction

These two items make the PCI bus compliant with the PCI Specification Ver. 2.1. It provides compatibility with older, slower ISA expansion cards.

Default:Disabled
Default:Disabled

AGP Aperture Size(MB)

This item defines the effective size of the AGP aperture.

Default:64

Pentium II Micro Codes

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

3-5 Power Management Setup

```
                    ROM PCI/ISA BIOS (00000006)
                      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
                                      ESC : Quit        ↑↓←→ : Select Item
                                      F1  : Help        PU/PD/+/- : Modify
 **  Break Event From Suspend  **     F5  : Old Values  (Shift)F2 : Color
                                      F6  : Load Setup Defaults
 IRQ 8 Clock Event   : Disabled       F7  : Load Turbo Defaults
```

This option displays a table of items which lets you control the power management of the system. Modern operating systems take care of much of the routine power management. This mainboard supports ACPI (advanced configuration and power interface).

This system supports three levels of power-saving modes; doze mode, standby mode, and suspend mode. Standby mode uses less power than doze mode and suspend mode uses the least power.

Power Management

This item acts like a master switch for the power-saving modes and harddisk timeouts. If this item is set to Disabled, all the power-savings modes are disabled. If this item is set to Max Saving, doze, standby, and suspend mode, and the harddisk powerdown will occur after a timeout of 1 minute. If this item is set to Min Saving, doze, standby, and suspend mode will occur after a timeout of 1 hour. The harddisk powerdown will occur after 15 minutes. If the item is set to User Define, you can insert your own timeouts for the power-saving modes and harddisk powerdown.

Default:User Define

PM Control by APM

When this is set to Yes, the Advanced Power Management feature in Microsoft Windows controls power management operation.

Default:Yes

Video Off After

This item lets you define which level of power-saving mode is required in order to turn off the video display.

Default:Standby

Doze Mode

Allow user to set the period to enter this mode. The power saving is in throttling.

Default:Disable

Stanby Mode

If you have selected User Define for the Power Management item, you can set this item to a selection of timeouts from 1 minute to 4 hours.

Default:Disable

Suspend Mode

Allow users to set the period counting from the beginnings of Doze to enter this mode. BIOS will set CPU in stop clock state and stop CPU fan to get an optimized power saving rate. Besides video will be turn off in entering this mode or follows standby status.

Default:Disable

HDD Power Down

This function allow all IDE enter an standby mode periodically according to the setting. Any IDE access requests will wake the IDE up from standby.

Default:Disable

Modem Wake up

If this item is enabled, the system will restart when an incoming transmission is received by an external modem.

Default:Disabled

Lan Wake up

If this item is enabled, the system will restart when an incoming transmission is received by an internal LAN, please reference to the motherboard layout Chapter 1-4.

Default:Disabled

VGA Active Monitor

You can use this item to enable/disable the VGA activity detection for power down state transition.

Default:Enabled

Power Button Override

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

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

When disabled, the power switch is only used to control On/Off, no Suspend mode funtion.

Default:Enabled

RTC Wake Up Timer

You can use this item to set a time and date for the system to automatically power on.

Default:Disabled

IRQ 8 Clock Event

If this item is enabled, OS2 will periodically detect IRQ 8(RTC)(Realtime colck) interruptions. When set this item to Disabled, OS/2 may has problem to go into Doze/Standby/Suspend mode.

Default:Disabled

IRQ[3-7, 9-15] , NMI

If this item is enabled, any activity on the listed IRQs (interrupt request lines) or the NMI (non-masked interrupt) will restart the timer.

Default:Enabled

Primary IDE 0	**Default: Disabled**
Primary IDE 1	**Default: Disabled**
Secondary IDE 0	**Default: Disabled**
Secondary IDE 1	**Default: Disabled**
Floppy Disk	**Default: Disabled**

You can use these items to let activity on the IDE devices or floppy disk drives restart the timer.

Serial Port	**Default: Enabled**
Parallel Port	**Default: Disabled**

When enabled, these items let activity on the serial or parallel ports restart the timer.

3-6 PnP/PCI CONFIGURATION Setup

```
              ROM PCI/ISA BIOS (00000006)
                  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
```

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

PnP OS Installed

Set ' Yes' to bypass BIOS PnP device initial except of boot device. PNP OS will do these PnP devices residently. If set this item to 'No', BIOS will handle all PCI/PnP devices.

Default:No

Resources Controlled By

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't know.Therefore, this option is for BIOS to know in advance what IRQ/DMA is occupied by legacy ISA devices if "Manual" is selected.

Default:Manual

Reset Configuration Data

Once 'Enabled' is selected, BIOS will turn it 'Disabled' again in next Boot. The option 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

IRQ/DMA assigned to

The option provides IRQ/DMA resources assigned Legacy ISA or PCI/ISA PnP card

Default: IRQ3~4 => Legacy ISA

Others => PCI/ISA PnP

PCI IDE IRQ Map To

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

Default:PCI-Auto

Used MEM base addr

This option defines the rest of Legacy ISA Cards used memory will be used by PnP card.

Default:N/A

PCI Slot 1, 2, 3, 4 IRQ

This option defines that the BIOS assign IRQ to PCI from 1 to 4 or user can set up "Auto" default.

Default:Auto

3-7 Integrated Peripherals Setup-

```
ROM PCI/ISA BIOS (00000006)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode      : Enabled      Parallel Port Mode        : SPP
IDE Primary Master PIO  : Auto
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

Onboard FDC Controller   : Enabled
Onboard Serial Port 1    : Auto       ESC : Quit        ↑↓→← : Select Item
Onboard Serial Port 2    : Auto       F1  : Help        PU/PD/+/- : Modify
UR2 Mode                 : Standard    F5  : Old Values  (Shift)F2 : Color
                                       F6  : Load Setup Defaults
Onboard Parallel Port    : 378/IRQ7    F7  : Load Turbo Defaults
```

IDE HDD Block Mode

This BIOS follows the enhanced IDE specification and allow multiple sectors access in a time when read/write IDE. If set "Disabled", it runs in single sector access.

Default:Enabled

IDE Primary Master PIO   **IDE Primary Master UDMA**

IDE Primary Slave PIO   **IDE Primary Slave UDMA**

IDE Second Master PIO   **IDE Second Master UDMA**

IDE Second Slave PIO   **IDE Second Slave UDMA**

This option provides that you can adjust IDE PIO/UDMA mode, we recommend you leave "Auto" as the default setting.

Default:Auto

Default:Auto

Default:Auto

Default:Auto

On-Chip Primary PCI IDE

This item enables or disables the primary IDE channel that is built into this mainboard.When the channel is enabled, the items Master/ Slave PIO Mode/UDMA appear. As a default, the PIO mode item is set to Auto and the UDMA item is set to Auto. The system will then automatically detect if a device on the channel requires PIO mode, or Ultra-DMA.

Default:Enable

On-Chip Secondary PCI IDE

This item enables or disables the secondary IDE channel that is built into this mainboard. When the channel is enabled, the items Master/ Slave PIO Mode/UDMA appear. As a default, the PIO mode item is set to Auto and the UDMA item is set to Auto. The system will then automatically detect if a device on the channel requires PIO mode, or Ultra-DMA.

Default:Enabled

USB Leagacy Support

This BIOS is allowed to support USB keyboard in legacy, which means during POST or DOS before OS, with USB support, is loaded. Both UHCI and OHCI protocols are supported in this BIOS.

Default:Disabled

USB IRQ Released

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

Default:No

FLASH BIOS

This item allows user to flash/upgrade BIOS.

Default: Enabled

Onboard FDC Controller

This is a pure switch to control the onboard FDD controller to be disabled or enabled.

Default:Enabled

Onboard Serial Port 1

Onboard Serial Port 2

This option allows user to select the IO port and IRQ used by serial port.

Default:Auto

UR2 Mode

This item is selectable only when the Onboard Serial Port 2 is Enabled. The available mode selections for the serial port 2 are:

 1. Standard

Configurates serial port as normal mode.

 2. IrDA 1.0

Sets to this setting if there is an infrared device connected on the IrDA connector in the system.

The maximum baud rate of this setting is: 115K baud.

 3. ASK IR

Sets to this setting if there is an infrared device connected on the IrDA connector in the system.

The maximum baud rate of this setting is: 19.2K baud.

Default:Standard

Onboard Parallel Port

Parallel Port Mode

This option allow user to control parallel port and enhanced mode like EPP – provide asymmetric bi-directional data transfer driver by host device. ECP – uses DMA protocol to achieve data transfer rates up to 2.5MB/seconds, which provides a symmetric bi-directional data communications.

Default:378/IRQ7

Default:SPP

3-8 PASSWORD SETTING

Password prevents unauthorized use of your computer. If you set a password, the system prompts for the correct password before boot or asscess 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.

IDE HDD Auto Detection Option

This item automatically detects and installs any harddisk 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't 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.

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.

Chapter 4: Motherboard BIOS Upgrade

The following program are located on the attached CD-ROM disk with directory

\utility

Please refer to the README file in the directory and catch these files per DOS prompt or file manager of Windows 95

■ Usage of MAXFLASH.EXE

This program is for your BIOS upgrade.

The usage is as follows,

1. maxflash

The Program will show a help message.

2.maxflash filename.bin

The program will overwrite current BIOS data with binary code "filename.bin". Be very careful to make sure filename.bin is the right file, otherwise, the system won't work properly if an incorrect BIOS is written.