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The ATX LX-6XP2 mainboard is a high-performance personal computer mainboard based on the Pentium III processor.

The mainboard uses the highly integrated Intel 82440LX AGPset which optimize the system bandwidth and concurrency with the implementation of Quad port Acceleration (QPA). QPA provides 4-port concurrent arbitration of the processor bus, graphics, PCI bus and SDRAM.

The Intel 82371AB chipset integrates all system control functions such as ACPI (Advanced Configuration and Power Interface). The ACPI provides more Energy Saving Features for the OSPM (OS Direct Power Management) function. The Intel 82371AB chipset also improves the IDE transfer rate by supporting Ultra DMA/33 IDE that transfers data at the rate of 33MB/s.

1.1 Mainboard Features

CPU

- Slot 1 for Pentium II processor.
- Supports 100MHz, 233MHz, 266MHz, 300MHz and 333MHz.
- Core/Bus ratios are x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6 and higher.

☞ **Clock Generator**

- 66.6MHz clock are supported.

☞ **Switching Voltage Regulator**

- On-board switching mode DC-DC Step Down Regulator.

☞ **Chip Set**

- Mainboard: Intel 82440LX PCI Chipset.
- Enhanced I/O : LTE IT 8679 Chipset.

☞ **System Memory, DIMM*3**

- Supports three 168-pin unbuffered DIMM Socket.
- Supports memory size up to 384 MB.
- Supports 3.3v Extended Data Output (EDO) and SDRAM DIMM.

☞ **Expansion Slots, AGP1, PCI1-PCI4, ISA1-ISA3**

- One AGP(Accelerated Graphics port) slot.
 - AGP specification compliant.
- Four 32-bit Master PCI Bus slots and three 16-bit ISA bus slots wherein one shared slot that can be used as ISA or PCI.

☞ **ACPI (ATX Power Supply Mode)**

- power management. Soft-off Control.
- Supports Modem Ring-in.
- Supports RTC Alarm wake up.

☞ **Enhance PCI IDE & I/O Interface**

- Supports two PCI Bus, Master IDE ports (up to 4 IDE devices).
- Supports Ultra DMA/33 function.
- Supports SCSI/CD-ROM function.
- 1. floppy port supports 2FDD with 360k, 720k, 1.2M, 1.44M and 2.88M bytes.

- 2. serial ports (COM1+COM2 Two 16550 high speed UART ports).
- 1. parallel port supports SPP/EPP/ECP mode.
- 2. USB ports.
- 1. IrDA TX/RX Header.
- PS/2 Keyboard interface and PS/2 mouse interface.

☞ System Green BIOS

- Flash BIOS option on board, AWARD deep green BIOS, PLUG & PLAY, PnP function.
- Auto configuration for PCI add-on cards.
- CPU stop-clock, real zero clock for CPU.
- I/O Device's power saving, APM & SMI.
- Implements the EPA Energy Star PC specification with Deep Green system design.

Full-on : System runs in full speed CPU clock.

Doze : System scales-down CPU clock.

Standby : System scales-down the CPU clock, and turns off video display, and spin-off hard disk driver.

Suspend : With SMM CPU, stop CPU clock in suspend mode.

☞ Power Connect

- ATX Power Supply.

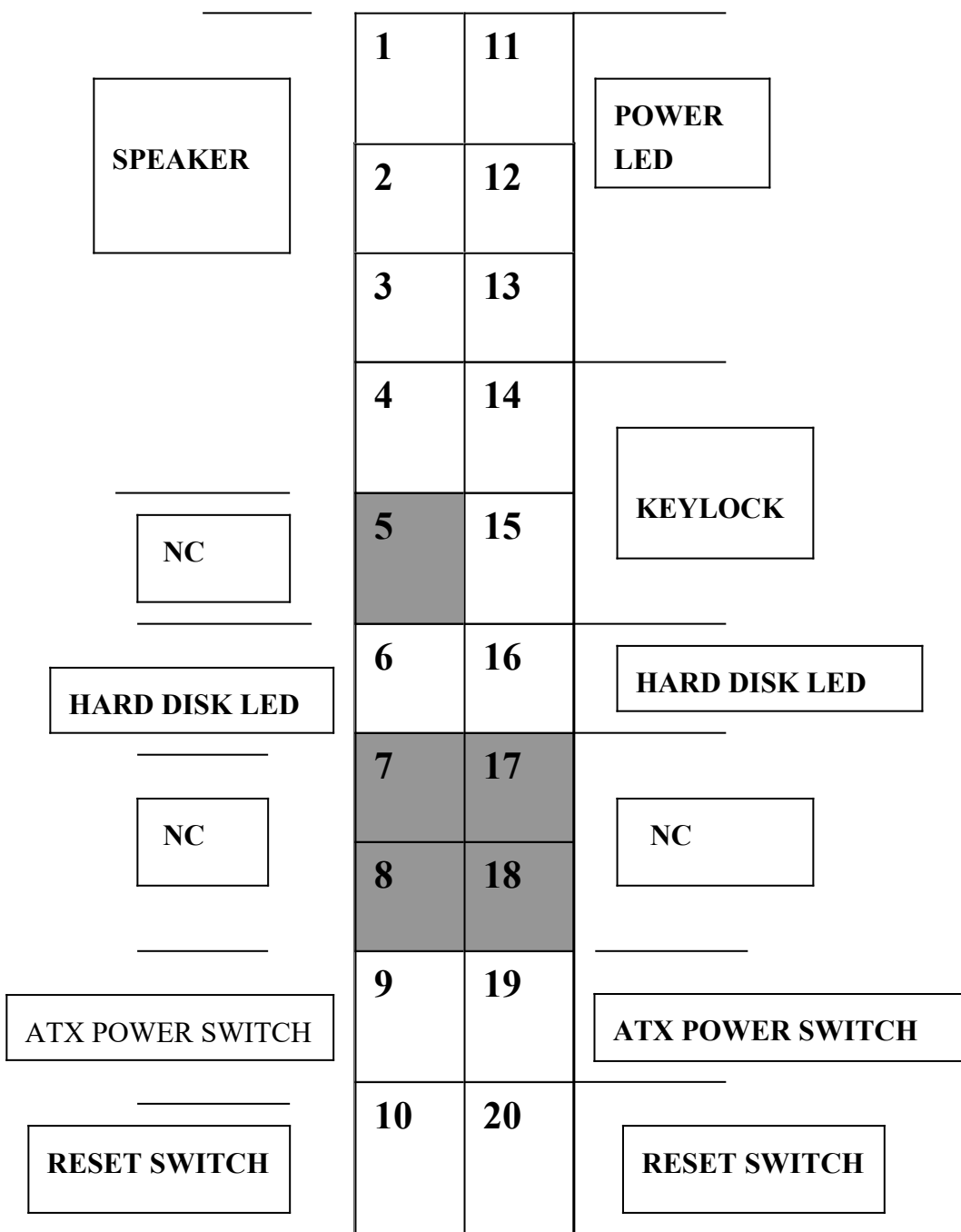
☞ PCB Dimension

- ATX Form Factor : 30.3 cm (L) x 19.9cm (W) x 4 layers PCB.
- Double deck I/O connectors, compatible with Intel Venus Mainblard.

2. Connectors and jumpers

Jp1: FLASH ROM VOLTAGE SETTING

| JP1 | FUNCTION |
|-----|----------|
| 1-2 | +12V |
| 2-3 | VCC |

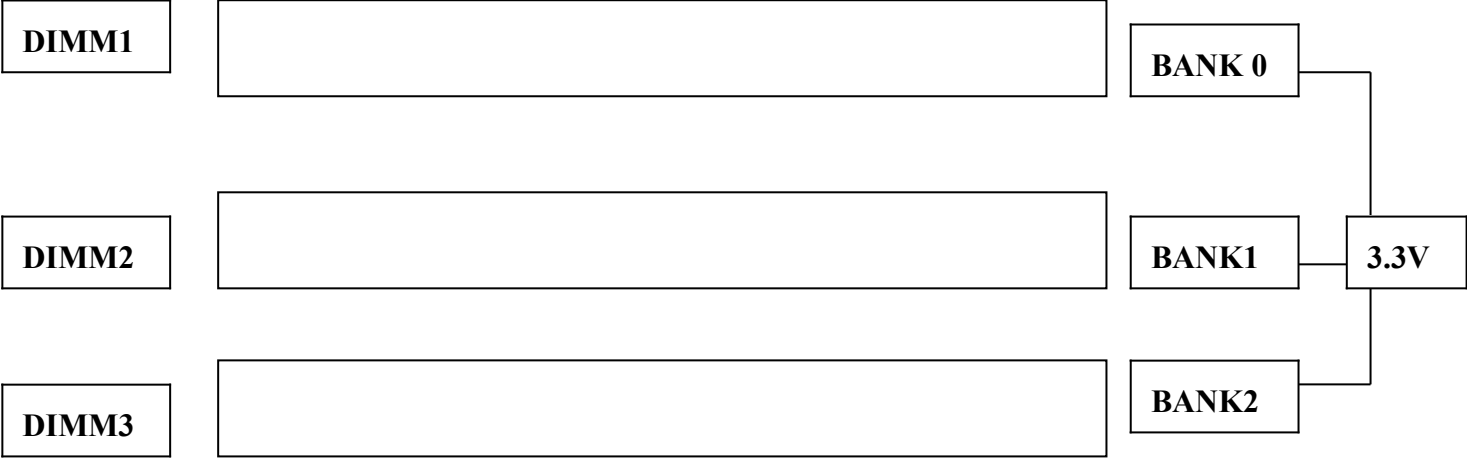


CPU CLOCK (JP5~JP7) AND CPU RATIO (SW1)

| PRODUCT NAME | CPU SPEED | BUS CLK | JP5~JP7 CONNECT | | | SW1 A B C D | | | | MULTIPLIER |
|----------------|-----------|---------|-----------------|---|---|-------------|---|---|---|------------|
| | | | | | | | | | | |
| PENTIUM II-200 | 200 | 66 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3X |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 3 | 3 | 3 | 2 | 2 | 2 | 2 | |
| PENTIUM II-233 | 233 | 66 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3.5X |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 3 | 3 | 3 | 2 | 2 | 2 | 2 | |
| PENTIUM II-266 | 266 | 66 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4X |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 3 | 3 | 3 | 2 | 2 | 2 | 2 | |
| PENTIUM II-300 | 300 | 66 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4.5X |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 3 | 3 | 3 | 2 | 2 | 2 | 2 | |
| PENTIUM II-333 | 333 | 66 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5X |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 3 | 3 | 3 | 2 | 2 | 2 | 2 | |

SUPPORT 168PIN DIMM x 3 FOR SDRAM/EDO DRAM

| SDRAM | | | STATUS |
|--------------|--------------|--------------|---------------|
| BANK0 | BANK1 | BANK2 | |
| DIMM1 | DIMM2 | DIMM3 | |
| INSTALLED | NONE | NONE | OK |
| NONE | INSTALLED | NONE | OK |
| NONE | NONE | INSTALLED | OK |
| INSTALLED | INSTALLED | NONE | OK |
| NONE | INSTALLED | INSTALLED | OK |
| INSTALLED | NONE | INSTALLED | OK |
| INSTALLED | INSTALLED | INSTALLED | OK |



3.1 Main Menu

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

ROM PCI/ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

| | |
|-------------------------------|---------------------------|
| STANDARD CMOS SETUP | INTEGRATED PERIPHERALS |
| BIOS FEATURES SETUP | SUPERVISOR PASSWORD |
| CHIPSET FEATURES SETUP | USER PASSWORD |
| POWER MANAGEMENT SETUP | IDE HDD AUTO DETECTION |
| PNP/PCI CONFIGURATION SETUP | HDD LOW LEVEL FORMAT |
| LOAD BIOS DEFAULTS | SAVE & EXIT SETUP |
| LOAD SETUP DEFAULTS | EXIT WITHOUT SAVING |
| Esc : Quit | ↑↓→← : Select Item |
| F10 : Save & Exit Setup | (Shift) F2 : Change Color |
| Time, Date, Hard Disk Type... | |

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Setup

This setup page includes all the items in a standard, AT-compatible BIOS.

BIOS Features

This setup page includes all the items of Award special enhanced features.

Super/User Password Setting

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

Chipset Features Setup

This setup page includes all the items of chipset special features.

Power Management Setup

This entry only appears if your system supports Power Management, “Green PC”, standards.

PNP/PCI Configuration Setup

This entry appears if your system supports PNP/PCI.

Load BIOS Defaults

The BIOS defaults have been set by the manufacturer and represent settings which provide the minimum requirements for your system to operate.

Load Setup Defaults

The chipset defaults are settings which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

Integrated Peripherals

This section page includes all the items of IDE hard drive and Programmed Input/Output features.

IDE HDD Auto Detection

Automatically detect and configure hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk’s parameters.

HDD Low Level Format

If supported by your system, this provides a hard disk low level format utility.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Save

Abandon all CMOS value changes and exit setup.

3.2 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each

category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

ROM PCI/ISA BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE. INC.

| Date (mm:dd:yy) : Thu, Jun 4 1998 | | | | | | | | | |
|--|--------|------|------|------|---------|---------------------------|--------|------|------|
| Time (hh:mm:ss) : 14 : 11 : 1 | | | | | | | | | |
| HARD DISKS | TYPE | SIZE | CYLS | HEAD | PRECOMP | LANDE | SECTOR | MODE | |
| Primary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Primary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Secondary Master | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Secondary Slave | : Auto | 0 | 0 | 0 | 0 | 0 | 0 | 0 | AUTO |
| Drive A : 1.44M, 3.5 in. | | | | | | | | | |
| Drive B : None | | | | | | | | | |
| | | | | | | Base Memory : 640K | | | |
| | | | | | | Extended Memory : 261120K | | | |
| Video : EGA/VGA | | | | | | Other Memory : 384K | | | |
| Halt On : All Errors | | | | | | Total Memory : 262144K | | | |
| ESC : Quit ↑↓→← : Select Item PU/PD/+/- : Modify | | | | | | | | | |
| F1 : Help (Shift) F2 : Change Color | | | | | | | | | |

Date

The date format is <day>, <date> <month> <year>. Press<F3> to show the calendar.

| | |
|-------|--|
| day | The day, from Sun to Sat, determined by the BIOS and is display-only |
| date | The date, from 1 to 31 (or the maximum allowed in the month) |
| month | The month, Jan through Dec. |
| year | The year, from 1900 through 2099 |

Time

The time format is <hour><minute><second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00

Daylight saving

The category adds one hour to the clock when daylight-saving time begins. It also subtracts one hour when standard time returns

| | |
|----------|--------------------------|
| Enabled | Enabled daylight-saving |
| Disabled | Disabled daylight-saving |

Primary Master/ Primary Slave/Secondary Master/

Secondary Slave

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type user is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type “User” to define your own drive type manually.

If you select Type “User”, you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be included in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be “Type 1”.
If the controller of HDD interface is SCSI, the selection shall be “None”.

If you select Type “Auto”, BIOS will Auto-Detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

| | |
|----------|---------------------|
| TYPE | drive type |
| CYLS. | number of cylinders |
| HEADS | number of heads |
| PRECOMP | write precom |
| LANDZONE | landing zone |
| SECTORS | number of sectors |
| MODE | mode type |

If a hard disk has not been installed select NONE and press <Enter>.

Drive A Type/ Drive B Type

The category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

| | |
|---------------|--|
| None | No floppy drive installed |
| 360K, 5.25 in | 5-1/4 inch PC-type standard drive; 360 kilobyte capacity |
| 1.2M, 5.25 in | 5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity |
| 720M, 3.5 in | 3-1/2 inch double-sided drive; 720 kilobyte capacity |
| 1.44M, 3.5 in | 3-1/2 inch double-sided drive; 1.44 megabyte capacity |

| | |
|---------------|---|
| 2.88M, 3.5 in | 3-1/2 inch double-sided drive; 2.88 megabyte capacity |
|---------------|---|

Video

The category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

| | |
|---------|--|
| EGA/VGA | Enhanced Graphics Adapter/Video Graphics Array, For EGA, VGA, SEGA, SVGA, or PGA monitor adapters. |
| CGA 40 | Color Graphics Adapter, power up in 40 column mode |
| CGA 80 | Color Graphics Adapter, power up in 80 column mode |
| NONO | Monochrome adapter, includes high resolution monochrome adapters |

Error Halt

The category determines whether the computer will stop if an error is detected during power up.

| | |
|----------------------|--|
| No errors | Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted. |
| All errors | The system boot will not be stopped for any error that may be detected. |
| All, But Keyboard | The system boot will not stop for a keyboard error, it will stop for all other errors. |
| All, But Diskette | The system boot will not stop for a disk error; it will stop for all other errors. |
| All, But Disk/Key | The system boot will not stop for a keyboard or disk error; it will stop for all other errors. |

Memory

The category is display-only which is determined by POST (Power on Self Test) of the BIOS.

Base Memory

The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for system with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU'S memory address map.

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. The BIOS is the most frequent user of this RAM area since this is where it shadows RAM.

3.3 BIOS Features Setup

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

ROM PCI/ISA BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE. INC.

| | | | |
|----------------------------|--------------|--------------------------|--------------------|
| Virus Warning | : Disabled | Video BIOS Shadow | : Enabled |
| CPU Internal Cache | : Enabled | C8000-CBFFF Shadow | : Disabled |
| External Cache | : Enabled | CC000-CFFFF Shadow | : Disabled |
| | | D0000-D3FFF Shadow | : Disabled |
| Quick Power On Self Test | : Enabled | D4000-D7FFF Shadow | : Disabled |
| Boot Sequence | : C, A, SCSI | D8000-DBFFF Shadow | : Disabled |
| Swap Floppy Drive | : Disabled | DC000-DFFFF Shadow | : Disabled |
| Boot Up Floppy Seek | : Enabled | | |
| Boot Up NumLock Status | : On | | |
| Boot Up System Speed | : High | | |
| Gate A20 Option | : Fast | | |
| Typematic Rate Setting | : Disabled | | |
| Typematic Rate (Chars/Sec) | : 6 | ESC : Quit | ↑↓→← : Select Item |
| Typematic Delay (Msec) | : 250 | F1 : Help | PU/PD/+/- : Modify |
| Security Option | : Setup | F5 : Old Values | (Shift) F2 : Color |
| PCI/VGA Palett Snoop | : Disabled | F6 : Load BIOS Defaults | |
| OS Select For DRAM > | : Non-OS2 | F7 : Load Setup Defaults | |
| 64MB | | | |

Virus Warning

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an antivirus program to locate and remove the problem before any damage is done.

!WARNING!
Disk boot sector is to be modified
Type "Y" to accept write or "N" to abort write
Award Software, Inc.

| | |
|----------|---|
| Enabled | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table. |
| Disabled | No warning message will appear when anything attempts to |

| | |
|--|--|
| | access the boot sector or hard disk partition table. |
|--|--|

NOTE:

Many disk diagnostic programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you first disable Virus Protection beforehand.

CPU Internal Cache/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is enable.

| | |
|----------|---------------|
| Enabled | Enabled cache |
| Disabled | Disable cache |

Quick Power On Self Test

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

| | |
|----------|-------------------|
| Enabled | Enable quick POST |
| Disabled | Normal POST |

Boot Sequence

The category determines which drive to search first for the disk operating system (i.e., DOS). Default value is A, C.

| | |
|-------------|---|
| C,A | System will first search for hard disk drive then floppy disk drive. |
| A,C | System will first search for floppy disk drive then hard disk drive. |
| CDROM, C,A | System will first search for CDROM drive, then hard disk drive and then floppy disk drive. |
| C, CDROM, A | System will first search for hard disk drive, then CDROM drive, and then floppy disk drive. |

Swap Floppy Drive

This item allows you to determine whether enable the swap floppy drive or not. The choice: Enabled/Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

| | |
|---------|---|
| Enabled | BIOS searches for floppy disk drive to determine if it is 40 or |
|---------|---|

| | |
|----------|---|
| | 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks. |
| Disabled | BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K. |

Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

| | |
|-----|-----------------------|
| On | Keypad is number keys |
| Off | Keypad is arrow keys |

Boot Up System Speed

Selects the default system speed- the normal operating speed at power up.

| | |
|------|-----------------------|
| High | Set the speed to high |
| Low | Set the speed to low |

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.

| | |
|--------|----------|
| Normal | keyboard |
| Fast | chipset |

Typematic Rate Setting

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down.

When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and , if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.

| | |
|----------|------------------------|
| Enabled | Enabled typematic rate |
| Disabled | Disable typematic rate |

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, this selection allows you select the rate at which the keys are accelerated.

| | |
|----|--------------------------|
| 6 | 6 characters per second |
| 8 | 8 characters per second |
| 10 | 10 characters per second |
| 12 | 12 characters per second |

| | |
|----|--------------------------|
| 15 | 15 characters per second |
| 20 | 20 characters per second |
| 24 | 24 characters per second |
| 30 | 30 characters per second |

Typematic Delay (Msec)

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins.

| | |
|------|-----------|
| 250 | 250 msec |
| 500 | 500 msec |
| 750 | 750 msec |
| 1000 | 1000 msec |

Security Option

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

| | |
|--------|---|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. |

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS Select for DRAM > 64

This item allows you to access the memory that over 64MB in OS/2.

The choice: Non-OS2, OS2.

PCI/ VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not.

| | |
|----------|---|
| Enabled | When PCI/VGA working with MPEG ISA/VESA VGA Card. |
| Disabled | When PCI/VGA not working with MPEG ISA/VESA VGA Card. |

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

| | |
|----------|--------------------------|
| Enabled | Video shadow is enabled |
| Disabled | Video shadow is disabled |

C8000-CBFFF Shadow/DC000-DFFFF Shadow

These categories determine whether option ROMs will be copied to RAM.

An example of such option ROM would be support of on-board SCSI.

| | |
|----------|-----------------------------|
| Enabled | Optional shadow is enabled |
| Disabled | Optional shadow is Disabled |

3.4 Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

supervisor password: can enter and change the options of the setup menus.

user password: just can enter but do not have the right to change the options of the setup menus.

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

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disabled a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 4). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

3.5 Setup/Integrated Peripherals Features Setup

ROM PCI/ISA BIOS

CHIPSET FEATURES SETUP

AWARD SOFTWARE. INC.

| | | | |
|--------------------------|------------|---------------------------|--------------|
| Auto Configuration | : Enabled | SDRAM CAS latency Time | : 3 |
| DRAM Speed Selection | : 60ns | Auto Detect DIMM/PCI Clk | : Enabled |
| MA Wait State | : Slow | Spread Spectrum Modulated | : Disabled |
| EDO RAS# To CAS# Delay | : 3 | CPU Clock Frequency | : 66MHz |
| EDO RAS# Precharge Time | : 3 | CPU Warning Temperature | : 70°C/158°F |
| EDO DRAM Read Burst | : x333 | Current CPU Temperature | : 41°C/105°F |
| EDO DRAM Write Burst | : x222 | | |
| DRAM Data Integrity Mode | : Non-ECC | | |
| CPU-To-PCI IDE Posting | : Enabled | | |
| System BIOS Cacheable | : Disabled | | |

| | | | |
|--------------------------|------------|--------------------------|--------------------|
| Video BIOS Cacheable | : Disabled | | |
| Video RAM Cacheable | : Disabled | | |
| 8 bit I/O Recovery Time | : 1 | | |
| 16 bit I/O Recovery Time | : 1 | | |
| Memory Hole At 15M-16M | : Disabled | | |
| Passive Release | : Enabled | ESC : Quit | ↑↓→← : Select Item |
| Delayed Transaction | : Disabled | F1 : Help | PU/PD/+/- : Modify |
| AGP Aperture Size (MB) | : 64 | F5 : Old Values | (Shift) F2 : Color |
| SDRAM RAS-to-CAS Delay | : Slow | F6 : Load BIOS Defaults | |
| SDRAM RAS Precharge Time | : Slow | F7 : Load Setup Defaults | |

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

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Auto Configuration

Pre-defined values for DRAM, cache.. Timing according to CPU type & system clock.

The Choice: Enabled, Disabled.

Note: When this item is Enabled, The pre-defined items will becomes SHOW-ONLY.

Follow as:

MA Wait State : Slow (default)

EDO RAS# To CAS# Delay: 3

EDO RAS# Precharge Time: 3

EDO DRAM Read Burst : X333

EDO DDRAM Write Burst : X222

DRAM Data Intergrity Mode

this item allows you to select Non-ECC,ECC. The default is Non-ECC.

CPU-To-PCI IDE Posting

This item allows you to select Enabled, Disabled. The default is Enabled.

System BIOS Cacheable

This item allows you to select Enabled, Disabled. The default is Disabled.

Video BIOS Cacheable

This item allows you to select Enabled, Disabled. The default is Disabled.

Video RAM Cacheable

This item allows you to select Enabled, Disabled. The default is Disabled.

8 bit I/O Recovery Time

This item allows you to select 1 to 7 Wait and NA. The default is 1.

16 bit I/O Recovery Time

This item allows you to select 1 to 4 Wait and NA. The default is 1.

Memory Hole At 15M-16M

This item allows you to select Enabled, Disabled. The default is Disabled.

Passive Release

This item allows you to select Disabled, Enabled. The default is Enabled.

Delayed Transaction

This item allows you to select Enabled, Disabled. The default is Disabled.

AGP Aperture Size (MB)

This item allows you to select 4,8,16,32,64,128,256. The default is 64.

SDRAM RAS-to-CAS Delay

This item allows you to select Slow, Fast. The default is Slow.

SDRAM RAS Precharge Time

This item allows you to select Slow, Fast. The default is Slow.

SDRAM CAS latency Time

This item allows you to select 3,2. The default is 3.

Auto Detect DIMM/PCI C1k

This item allows you to select Enabled, Disabled . The default is Enabled.

Spread Spectrum Modulated

This item allows you to select Disabled, Enabled. The default is Disabled.

CPU Clock Frequency

This item allows you to select 66MHz, 66+MHz. The default is 66MHz.

CPU Warning Temperature

You can set the temperature of CPU from 50°C to 70°C by yourself when the CPU running and its temperature become too hot then the temperature sensor will be limited CPU speed with your default value and make the system stable.

Current CPU Temperature

Display current CPU Temperature.

Integrated Peripherals

ROM PCI/ISA BIOS
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 UMDA | : Auto | | |
| IDE Primary Slave UMDA | : Auto | | |
| IDE Secondary Master UMDA | : Auto | | |
| IDE Secondary Slave UMDA | : Auto | | |
| On-Chip Primary PCI IDE | : Enabled | | |
| On-Chip Secondary PCI IDE | : Enabled | | |
| USB Keyboard Support | : Disabled | | |
| KBC input clock | : 8MHz | | |
| Onboard FDC Controller | : Enabled | ESC : Quit | ↑↓→← : Select Item |
| Onboard Serial Port 1 | : 2F8/IRQ4 | F1 : Help | PU/PD/+/- : Modify |

| | | | |
|-----------------------|------------|--------------------------|--------------------|
| Onboard Serial Port2 | : 2F8/IRQ3 | F5 : Old Values | (Shift) F2 : Color |
| UR2 Mode | : Standard | F6 : Load BIOS Defaults | |
| Onboard Parallel Port | : 378/IRQ7 | F7 : Load Setup Defaults | |

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

| | |
|----------|------------------------------------|
| Enabled | IDE controller uses block mode. |
| Disabled | IDE controller uses standard mode. |

Enabled is the default.

PCI Slot IDE 2nd Channel

This item allows you designate an IDE controller board inserted into one of the physical PCI slots as your secondary IDE controller.

| | |
|----------|--|
| Enabled | External IDE controller designated as the secondary controller |
| Disabled | No IDE controller occupying a PCI slot. |

Enabled is the default.

IDE PIO

IDE hard drive controllers can support up to two separate hard drives. These drives have a master / slave relationship which are determined by the cabling configuration used to attach them to the controller. Your system supports two IDE controllers-a primary and a secondary-so you have to ability to install up to four separate hard disks.

PIO means Programmed Input / Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. This simpler and more efficient (and faster).

Your system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When *Auto* is selected, the BIOS will select the best available mode. This is true for the next four setup items.

1. IDE Primary Master PIO
2. IDE Primary Slave PIO
3. IDE Secondary Master PIO
4. IDE Secondary Slave PIO

On-Chip Primary PCI IDE

As stated above, your system includes two built-in IDE controllers, both of which

operate on the PCI bus. This setup item allows you either to enable or disable the primary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

| | |
|----------|-------------------------------------|
| Enabled | Primary HDD controller used-Default |
| Disabled | Primary HDD controller not used. |

On-Chip Secondary PCI IDE

As above for the Primary controller, this setup item you either to enable or disable the secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

| | |
|----------|----------------------------------|
| Enabled | Primary HDD controller used |
| Disabled | Primary HDD controller not used. |

Enabled is the default

3.6 Setup Power Management

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

ROM PCI/ISA BIOS
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

| | | |
|----------------------|------------------|---|
| Power Management | : User Define | **Reload Global Timer Events** |
| PM Control by APM | : Yes | IRQ3 [3-7,9-15],NMI : Enabled |
| Video Off Method | : V/H SYNC+Blank | Primary IDE 0 : Disabled |
| Video Off After | : Standby | Primary IDE 1 : Disabled |
| MODEM Use IRQ | : 3 | Secondary IDE 0 : Disabled |
| Doze Mode | : Disabled | Secondary IDE 1 : Disabled |
| Standby Mode | : Disabled | Floppy Disk : Disabled |
| Suspend Mode | : Disabled | Serial Port : Enabled |
| HDD Power Down | : Disabled | Parallel Port : Disabled |
| Throttle Duty Cycle | : 62.5% | |
| VGA Active Monitor | : Disabled | |
| Soft-off By PWR-BTTN | : Delay 4 Sec. | |
| | : Enabled | |
| Resume by Ring | : Disabled | |
| Resume by Alarm | | |
| | | ESC : Quit ↑↓→←: Select |
| | | F1 : Help Item |
| IRQ 8 Break Suspend | : Disabled | F5 : Old Values PU/PD/+/- : Modify |
| | | F6 : Load BIOS Defaults (Shift) F2 : Color |
| | | F7 : Load Setup Defaults |

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings

| | |
|-------------------|--|
| Disable (default) | No power management. Disables all four modes |
|-------------------|--|

| | |
|-------------------|--|
| Min. Power Saving | Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min. |
| Max. Power Saving | Maximum power management -ONLY AVAILABLE FOR SL CPU'S . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min. |
| User Defined | Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 from 1 min. to 15 min. and disable. |

PM Control APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.

If the Max. Power Saving is not enabled, this will be preset to *No*.

Video Off Method

This determines the manner in which the monitor is blanked.

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

PM Timers

The following four modes are Green PC power saving functions which are only user configurable when User Defined Power Management has been selected. See above for available selections.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Power Down & Resume Events

Power Down and Resume events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured a *On*, even when the system is in a power down mode.

As above, the choices are *On and Off*. *Off* is the default.

When set *On*, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (Reserved)
- IRQ13 (Coprocesor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

Soft-off By PWR-BTTN (For ATX POWER ONLY)

This item allows you to select Delay 4 sec or Instant-off.

Resume By Ring (For ATX POWER ONLY)

This item allows you to select Disabled ,Enabled.

If a Fax Modem was connected with serial ports, the computer will be awoken when it received a signal from outside.

Resume By Ring, Setup for MS-DOS mode

1. Select Resume By Ring: Enabled
2. Save the Value and Exit. This system will Reboot.
3. Power off your system by pressing the power button on the panel.

Resume By Ring, Setup for WIN95 mode

1. Select Resume By Ring: Enabled
2. Save the Value and Exit. This system will Reboot.
3. When you want leave WIN95 , select Shut down. The power off by software

Resume By Alarm (For ATX POWER ONLY)

This item allows you to select Disabled ,Enabled.

Which allows the user setting date(Day/Hour/Minute)

in advance for turning on the system with a range in 30 days.

The system will be awoken on the date according to the user' setup.

Resume By Alarm Setup for MS-DOS mode

1. Select Resume By Alarm: Enabled
2. Set the (Day/Hour/Minute) you desire to wake up your system
3. Save the Value and Exit. This system will Reboot.
4. Power off your system by pressing the power button on the panel.

Resume By Alarm Setup for win95 mode

1. Select Resume By Alarm: Enabled
2. Set the (Day/Hour/Minute) you desire to wake up your system
3. Save the Value and Exit. This system will Reboot.
4. When you want leave WIN95 , select Shut down. The power off by software

3.7 Setup PnP/PCI Configuration

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

ROM PCI/ISA BIOS
PNP/PCI CONFUGURATION
AWARD SOFTWARE. INC.

| | |
|---|--------------------------|
| PNP OS Installed : No Resources Controlled By : Auto Resources Configuration Data : Disable | PCI IDE IRQ Map To : ISA |
| ESC : Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults | |

Resource Controlled by

The Award Plug and Play BIOS has the capacity to automatically configure

all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play Operating system such as Windows® 95.

Choices are Auto and Manual (default).

Reset Configuration Data

This item allows you to determine reset the configuration data or not.

Choices are Enabled and Disabled (default).

IRQ3/4/5/7/9/10/11/12/14/15, DMA0/1/3/5/6/7 assigned to

This item allows you to determine the IRQ / DMA assigned to the ISA bus and is not available to any PCI slot.

Choices are *Legacy ISA* and *PCI/ISA PnP*.

PCI IRQ Activated by

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system's manufacturer.

Choices are *Level* (default) and *Edge*.

PCI IDE IRQ MAP to

This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA (Industry Standard Architecture) device rather than a PCI controller. The more apparent difference is the type of slot being used.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A,B,C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk itself, rather than individual partitions. Since each IDE controller supports two separate hard disk drivers, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in "*Slot x Using INT#*" above.

Selecting "*PCI Auto*" allows the system to automatically determine how your IDE disk system is configured.

