

## Table of Contents

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<b>Chapter 1 : Introduction</b> .....	<b>1-1</b>
1.1 Main Features.....	1-1
1.2 Static Electricity Precautions.....	1-3
1.3 Mainboard Layout.....	1-4
1.4 BIOS-Supported Enhanced IDE Features.....	1-5
1.5 Power Conservation.....	1-7
<b>Chapter 2 : Hardware Installation</b> .....	<b>2-1</b>
2.1 Upgrading System Memory.....	2-1
2.2 Installing A CPU Upgrade.....	2-3
2.3 Updating the Flash BIOS (optional).....	2-6
<b>Chapter 3 : Technical Summary</b> .....	<b>3-1</b>
3.1 Jumper Settings.....	3-1
3.2 Connectors.....	3-11
<b>Chapter 4 : Software Guide</b> .....	<b>4-1</b>
4.1 Award BIOS Setup.....	4-1
Standard CMOS Setup.....	4-3
BIOS Features Setup.....	4-8
Chipset Features Setup.....	4-11
Power Management Setup.....	4-15
PCI Configuration Setup.....	4-19
Load BIOS Defaults.....	4-21
Load Setup Defaults.....	4-22
Setting Supervisor & User Passwords.....	4-23
IDE HDD Auto Detection.....	4-24
Save And Exit Setup.....	4-25
Exit Without Saving.....	4-26
4.2 Enhanced IDE Drivers.....	4-27

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## *Introduction*

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# **1. INTRODUCTION**

The R-418 PCI 486 mainboard is a high performance PC system board that supports all 486 serials CPU, and offers CPU voltage Detect 5v to 3.3v/3.45v/3.6v/3.75v/3.9v.

This board is designed with chipset 85c496/497. Which is based on PC/AT fully compatible with ISA Bus and PCI Local Bus Slots, On-board Local Bus IDE, two serial and one parallel.

There are some new feature allows you to operate the system with just the performance you want, and this manual also explains how to install the mainboard hardware for operation, and how to setup CMOS Configuration with BIOS Setup program.

### **1.1 Main Features**

The R-418 PCI 486 has many performance and system features integrated onto the mainboard, including the following:

- Supports most 486-type CPUs and SL enhanced versions, both 5-volt and 3.3-volt degree, Intel CPU and others. (AMD and Cyrix...).
- Power management "Green" features controlled via the BIOS Setup utility. Four Power Saving states.
- Supports the APM control and Sleep (Break) switch dryices.
- On-board voltage regulator for low-voltage CPUs.
- High-performance write-back "Level 2" external static RAM cache in 128K, 256K, 512K and 1M options.

## *Introduction*

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- Uses 72-pin and 30-pin DRAM modules in multiple configurations up to 255MB, "Table Free" DRAM SIMMs configuration.
- Four 16-bit ISA slots and three 32-bit PCI expansion slots, with one shared slot position. The PCI slots are Bus Master capable.
- On-board Local Bus IDE controller with two connectors supports four IDE devices in two channels at faster data transfer rates and direct support for large hard disk and other Enhanced IDE devices.
- On-board I/O chip: Fast UART compatible, supports 2 serial ports, 1 parallel port with EPP and ECP capabilities, a floppy disk drive connector which supports 2 drives up to 2.88MB.
- System BIOS support for Enhanced IDE up to four IDE hard disks or other IDE devices, and support for hard disks larger than 528 MB and up to 8.4GB.

## *Introduction*

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### **1.2 Static Electricity Precautions**

Make sure you ground yourself before handling the system board or other system components.

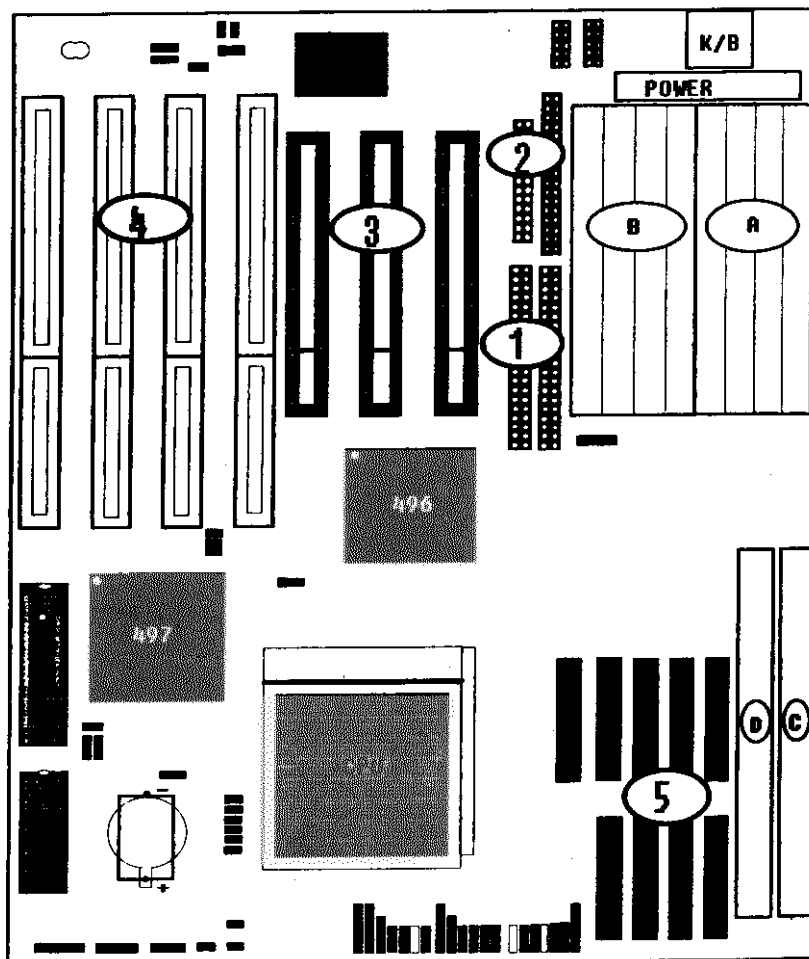
Electrostatic discharge can easily damage the components. Note that you must take special precaution when handling the system board in dry or air-conditioned environments.

Take these precautions to protect your equipment from electrostatic discharge:

- Do not remove the anti-static packaging until you are ready to install the system board and other system components.
- Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself grasp the expansion slot covers or other unpainted portions of the computer chassis.
- Frequently ground yourself while working, or use a grounding strap.
- Handle the system board by the edges and avoid touching its components.

## Introduction

### 1.3 Mainboard Layout



1. Local Bus IDE ports
2. I/O Connectors
3. PCI Bus slots
4. ISA Bus slots
5. L2 External Cache sockets

A,B : 30 Pin SIMM banks  
C,D : 72 Pin SIMM banks

## *Introduction*

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### **1.4 BIOS-Supported Enhanced IDE Features**

The original IDE implementation was limited to two hard disk drives with relatively slower data transfer rates. While this solution is simple and reliable, it has some limitations that have become more significant as the performance level of other system components and overall system performance have increased dramatically with the advent of new microprocessor, expansion bus and operating system technologies.

In response to these demands, the IDE specification has been updated to increase its capabilities and provide improved performance. Together these are referred to as "Enhanced IDE". The features comprise as following:

- Support for two IDE channels with two devices per channel, allowing the use of four IDE devices in one system.
- Support for IDE devices other than hard disk drives, including IDE Tape Backup and CD-ROM drives.
- Support for IDE hard disk drives larger than the former 528 MB limit imposed by various technical factors.
- Support for faster data transfer rates, particularly with IDE controllers that gave a PCI local bus interface.

This mainboard supports the use of these new features. The features work with the on-board Local Bus IDE controller which has two connectors built onto the board. you can use one or both connectors to connect up to four IDE devices.



## *Introduction*

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### ***Dual IDE Channel Support***

This board can connect up to four IDE peripheral devices from the on-board Local Bus IDE controller. With Enhanced IDE you can connect two devices to each connector. All devices are categorized the same way IDE hard disks have been in the past, with the first device per channel set as the "Master" device and the second as the "Slave" device.

### ***Large IDE Hard Disks***

The BIOS provides three modes to support both normal IDE hard disks and also drives larger than 528MB:

Normal - for IDE drives smaller than 528MB

Large-for drives larger than 528MB that do not use LBA. These can only be used with the MS-DOS operating system.

LBA-for drives larger than 528MB and up to 8.4 GB that use Logic Block Addressing mode

### ***Other IDE Devices***

To use IDE devices other than hard disks with this main-board you may need to install a device driver in your system software configuration. Refer to the documentation that comes with any device you will install for instructions about this and any other installation requirements.

Enhanced IDE allows the use of IDE devices other than hard disks. Two devices that previously required non-standard or adapted interfaces and are now available as standard IDE devices are Tape Backup and CD-ROM drives. These will now be able to take advantage of the ease of installation, lower cost and in some cases superior performance of Enhanced IDE, putting an end to the system configuration complications created by their earlier interfaces.

## *Introduction*

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### ***Faster Data Transfer***

Enhanced IDE includes a scheme to support a significant increase in the rate of data transfer from the IDE device to the rest of the system compared to the previous standard. One aspect of this scheme is support for the Mode 3 timing scheme. If you use both the on-board controller and hard disks that support Mode 3 operation you can increase the data transfer rate up to as much as 11MB per second.

### **1.5 Power Conservation**

The R418 M/B incorporates the power conservation technology, which you can set up in the BIOS Setup Utility, where the Power Management Setup section controls the board's power management scheme. The power management features include hard disk and video controls. For more information see the section on Power Management Setup in Chapter 4.



## **2. HARDWARE INSTALLATION**

This chapter explains how to install options on your mainboard. It covers the most likely and technically accessible upgrades you might want to do, including increasing system memory, changing the CPU chip, increase the size of the Level 2 cache and adding IDE hard disks.

### **2.1 Upgrading System Memory**

System DRAM is the main source of data for the CPU. Data remains stored in DRAM as long as the system is truned on, and is lost when you turn it off. The Level 2 cache memory is Static RAM (SRAM), which is faster than DRAM memory. When the CPU looks for data, it first searches the cache. If the information is not there, the search continues in the DRAM. With this design, the CPU looks in the fastest source of data first, which lets it operate as fast as possible.

This mainboard can use 72-pin and 30-pin SIMMs in seven sizes:1MB, 2MB, 4MB, 8MB, 16MB, 32MB and 64MB (mega-bytes). Depending on the combination of modules you use, you can install between 1MB and 255MB. The 32-bit modules used for this board come with memory chips on either one or both sides of the module.

This mainboard requires fast page mode DRAM with a speed of at least 70ns.

#### ***Memory Combinations***

You can configure the system memory in a variety of ways, using different combinations of SIMM modules. You can use any combination of modules as long as they are the same speek.

## *Hardware Installation*

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The only restrictions are:

- Both modules must be the same speed.
- Required Memory Specifications:
  - DRAM Mode: Fast Page Mode
  - Module Size: 1MB,2MB,4MB,8MB,16MB,32MB,or64MB
  - Dram Speed: 70ns (or faster)
  - CAS access time{ $T_{cac}$ }: 10ns-25ns
  - RAS access time{ $T_{rac}$ }: 60ns-70ns
  - Parity: Either parity or non-parity

### ***Installing SIMMs***

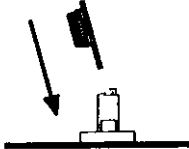


To install SIMMs as following instructions:

1. The modules will only insert in a socket in one orientation. An orientation cut-out will prevent you from inserting them the wrong way. See the figures at right.
2. Press the module edge connector into the socket at a moderate angle to the board. See the figures below.
3. Press the module forward onto the socket's vertical posts, so that the alignment pins at the top of each post go into the circular holes at each end of the module.
4. The module should click into place, as the retaining clips at each end of the socket snap behind the module to secure it.
5. Repeat this procedure for each module you install.

## Hardware Installation

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### Installing a SIMM Module

- A.  Insert the SIMM into the socket at an angle.
- B.  Press it forward onto the positioning pins.
- C.  The retaining clips should fit over the edge and hold the SIMM in place.

### 2.2 Installing A CPU Upgrade

If you want to install an upgrade CPU in the ZIF socket. You must first remove the existing CPU, and then set the CPU selection jumpers for the new CPU. Be sure to follow static electricity precautions very carefully. The CPU is one of the most expensive parts of your system and can be damaged or destroyed by static electric discharge.

There are several jumpers you need to set when changing the CPU. The jumpers settings define these specifications:

CPU Type – the kind of CPU is installed

External Clock Speed – the external operation speed. This is also the speed the PCI bus will operate at.

## ***Hardware Installation***

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You must have all of this information ready before you can install a CPU upgrade. Remember that the chip speed will be listed according to the faster internal clock speed.

To check what jumper settings are required to upgrade the CPU, refer to the Jumper Setting Summary in Chapter 3. Make sure to take full precautions against static electric discharge before you work on the board.

To install an upgrade CPU first do as follows:

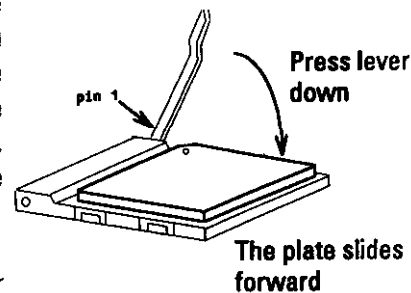
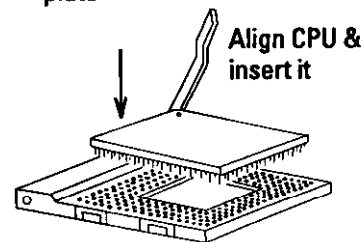
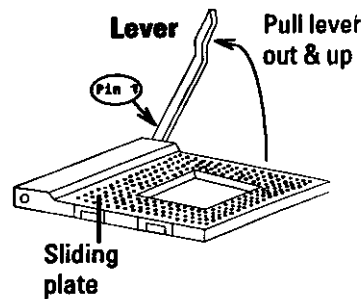
1. Identify the existing external clock speed setting on the board. The external clock speed is set by jumpers JP25, JP38, JP39 and JP40.
2. Identify the external clock speed of the CPU you will install.
3. Identify the CPU type and check what the required jumper settings for JP12, JP13 through JP24 are for that type. If you are installing any intel DX4, AMD DX4 or Cyrix DX2-V CPU you will also need to set the correct voltage. (JP42-JP46, JP48)
4. Once you have made any required jumper settings, you can install the CPU chip in the ZIF socket. Refer to the next page for unstructions on this if you'er not familiar with how to use the Zero Insertion Force socket.

## Hardware Installation

### Installing a CPU in the ZIF Socket

1. Make sure the ZIF socket lever is up. To raise the lever, pull it out to the side a little and raise it as far as it will go. Pin 1 is at the arm corner.
2. Align the CPU and socket Pin 1 corners. The pins on the bottom should align with the inner 3 rings of holes in the socket, then place the CPU in the socket. It should insert easily. If it doesn't, pull the lever up a little more.
3. Press the lever down. The plate will slide forward. You will feel some resistance as the Pressure starts to secure the CPU in the socket. When the CPU is installed, the lever should snap into place at the side of the socket.

**Note:** To remove a CPU, pull the lever out to the side a little and raise it as far as it will go. Lift out the CPU chip.



## *Hardware Installation*

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### **2.3 Updating the Flash BIOS (optional)**

This mainboard has two BIOS ROM chip options. It can use either of two programmable "flash" EPROM chips, 5-volt or 12-volt, either of which you can update when BIOS upgrades are available.

Jumpers JP52&53 enable programming for the voltage of the BIOS ROM chip installed. With programming enabled, you use the Flash Memory Writer utility to update the BIOS. The jumper settings are in Chapter 3 and instructions for the FMW utility are in Chapter 4.

**Note:** When you finish programming, always set the JP52&53 back to the default EPROM setting which disables programming and is also for Normal Read of either voltage flash chip.

The following example illustrates this procedure for a 12-volt flash ROM chip.

1. Set JP52&53 to the voltage of the installed ROM chip (e.g. 12V).
2. Refer to chapter 4 for instructions on using the flash Memory Writer Utility to install a new BIOS file in the flash chip.
3. When you have successfully installed the new BIOS, set JP52 &53 back to the EPROM setting to disable programming.

## 3. TECHNICAL SUMMARY

This Chapter explains how to setting the jumpers and install the connectors on the mainboard.

### 3.1 Jumper Settings

Regarding hardware settings on the board. They specify configuration options for various features. The settings are made using something called a "jumper". A jumper is a set of two or more metal pins in a plastic base attached to the mainboard. A plastic jumper "cap" with a metal plate inside fits over two pins to create an electrical contact between them. The contact establishes a hardware setting.

Some jumpers have two pins, other have three or more. The jumpers are sometimes combined into sets called jumper "blocks", where all the jumpers in the block must be set together to establish a hardware setting. The next figures show how this looks.

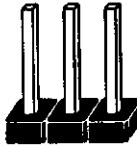
#### Jumpers and caps



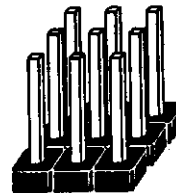
**Jumper cap**



**2-pin jumper**



**3-pin jumper**



**Jumper block**

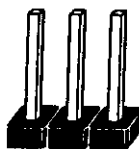
## Technical Summary

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Most jumper settings are printed on the board in a stylized bird's-eye view, with which pins to connect for each setting marked by a bar connecting two pins. For example, if a jumper has three pins, connecting, or "shorting", the first and second pins creates one setting and shorting the second and third pins creates another. The same type of diagrams are used in this manual. The jumpers are always shown from the same point of view as shown in the wholeboard diagram in this chapter.

### Jumpers diagrams

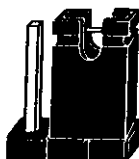
Jumpers are shown like this



Jumper caps like this



Jumper settings like this

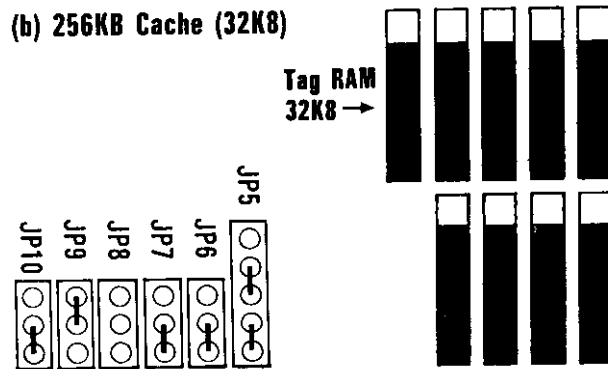
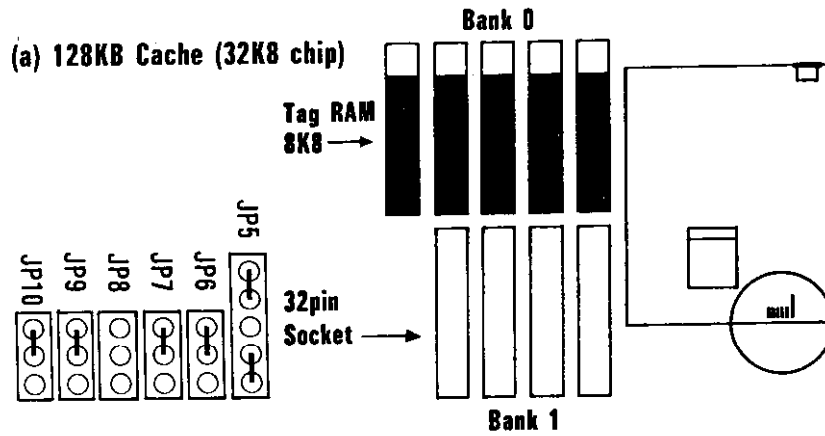




## Technical Summary

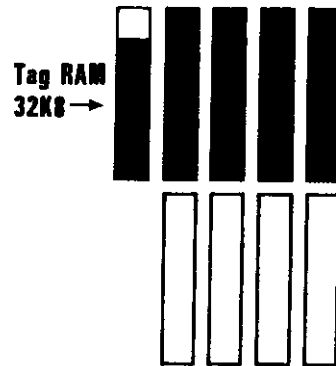
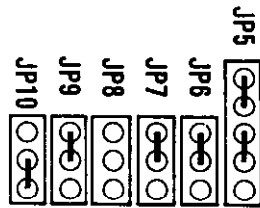
### Cache Size Selection: JP5, JP6, JP7, JP9, JP10

	SRAM Type	JP5	JP6	JP7	JP9	JP10
128K	32K8	1-2,4-5	1-2	1-2	1-2	1-2
256K	32K8	2-3,4-5	2-3	2-3	1-2	2-3
	64K8	1-2,3-4	1-2	1-2	1-2	2-3
512K	64K8	2-3,4-5	2-3	2-3	2-3	2-3
	128K8	1-2,4-5	1-2	1-2	2-3	2-3
1M	128K8	2-3,4-5	2-3	2-3	2-3	2-3

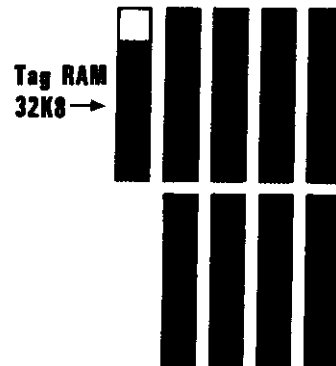
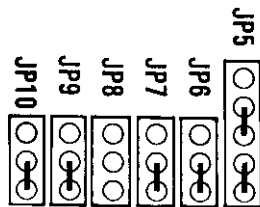


## Technical Summary

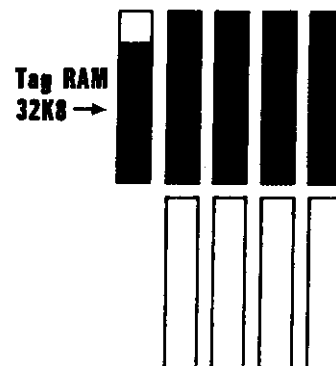
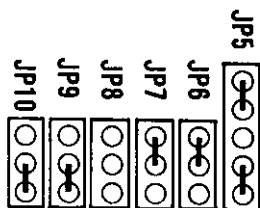
(c) 256KB (64K8)



(d) 512KB (64K8)



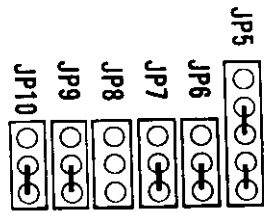
(e) 512KB Cache (128K8)



## Technical Summary

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(f) 1MB Cache (128KB)

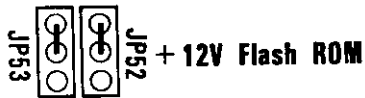
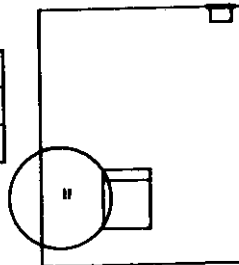


Tag RAM  
64 KB →



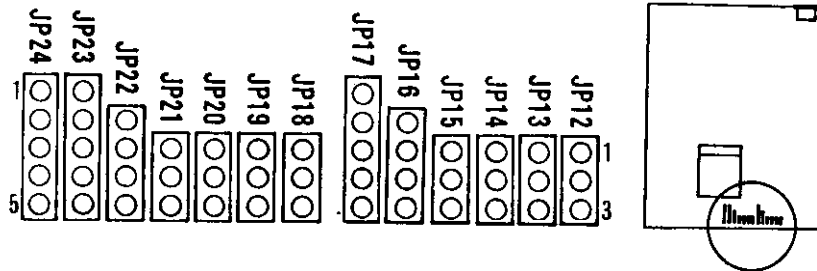
**ROM Type Selection: JP52, JP53**

JP52, JP53	ROM Type
1-2 Short	+12V Flash ROM
2-3 Short	EEPROM



## Technical Summary

### CPU Type Selection: JP21-JP24



#### (a) INTEL CPU

CPU Type	DX/DX2/DX4	486SX	P24T	P24D
JP12	2-3	2-3	1-2	1-2
JP13	2-3	Open	1-2	2-3
JP14	2-3	2-3	2-3	2-3
JP15	Open	Open	1-2	Open
JP16	3-4	3-4	3-4	1-2,3-4
JP17	3-4	3-4	1-2	1-2
JP18	2-3	Open	Open	1-2
JP19	Open	Open	Open	Open
JP20	Open	Open	Open	1-2
JP21	Open	Open	1-2or3-4	Open
JP22	1-2,3-4	2-3	1-2,3-4	1-2,3-4
JP23	4-5	4-5	1-2	4-5
JP24	Open	Open	Open	2-3

## Technical Summary

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### (b) AMD CPU.

CPU Type	DX/DX2/DX4 & DX4-133 (V8T)	DX4-100 (V8T) DX4-120 (V8T)	DX4-100 (V8B) DX4-120 (V8B)	X5-133 X5-160
JP12	2-3	2-3	1-2	1-2
JP13	2-3	2-3	2-3	2-3
JP14	2-3	2-3	2-3	2-3
JP15	Open	Open	Open	Open
JP16	3-4	3-4	1-2,3-4	1-2,3-4
JP17	3-4	3-4	1-2,3-4	1-2,3-4
JP18	2-3	Open	1-2	1-2
JP19	Open	Open	Open	2-3
JP20	Open	Open	1-2	1-2
JP21	Open	Open	Open	Open
JP22	1-2,3-4	1-2,3-4	1-2,3-4	1-2,3-4
JP23	4-5	4-5	4-5	4-5
JP24	Open	Open	2-3	2-3

### New Type CPU Frequency Select.

CPU Type	System Frequency
DX2-80	40MHz
DX4-100	33MHz
DX4-120	40MHz
DX4-133	33MHz
X5-133	33MHz
X5-160	40MHz

## Technical Summary

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### (c) Cyrix CPU

CPU Type	486DX/DX2/ DX4 (5V)	486DX/DX2/ DX4 (3.45V)	5 × 86-100 5 × 86-120	5 × 86-133
JP12	2-3	2-3	2-3	2-3
JP13	2-3	2-3	2-3	2-3
JP14	1-2	1-2	2-3	2-3
JP15	2-3	2-3	Open	Open
JP16	2-3	2-3	1-2,3-4	1-2,3-4
JP17	2-3	2-3,4-5	1-2,3-4	1-2,3-4
JP18	Open	Open	1-2	1-2
JP19	Open	Open	Open	2-3
JP20	Open	Open	1-2	1-2
JP21	Open	Open	Open	Open
JP22	1-2,3-4	1-2,3-4	1-2,3-4	1-2,3-4
JP23	2-3	2-3	4-5	4-5
JP24	Open	Open	2-3	2-3

### New Type CPU Frequency Select.

CPU Type	System Frequency
5 × 86-100	33MHz
5 × 86-120	40MHz
5 × 86-133	33MHz

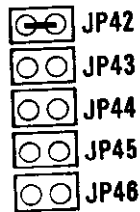
## Technical Summary

### CPU Voltage Support: JP42-JP46 & JP48 (default-JP43 short)

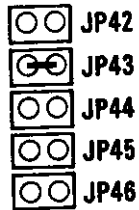
	JP42	JP43	JP44	JP45	JP46	JP48
3.3V	Short	Open	Open	Open	Open	Open
3.45V	Open	Short	Open	Open	Open	Open
3.6V	Open	Open	Short	Open	Open	Open
3.75V	Open	Open	Open	Short	Open	Open
3.9V	Open	Open	Open	Open	Short	Open
5V	Open	Open	Open	Open	Open	1-2&3-4 Short

— NOTE: If JP48 is not exist, this mainboard is 5v auto-detect, you don't need to setting JP48 - when installing a 5V CPU.

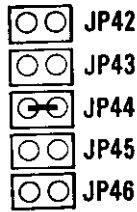
#### 3.3V



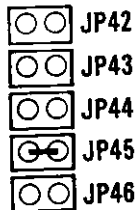
#### 3.45V



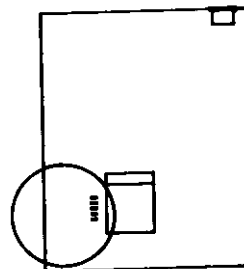
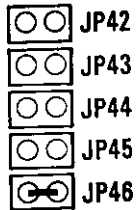
#### 3.6V



#### 3.75V



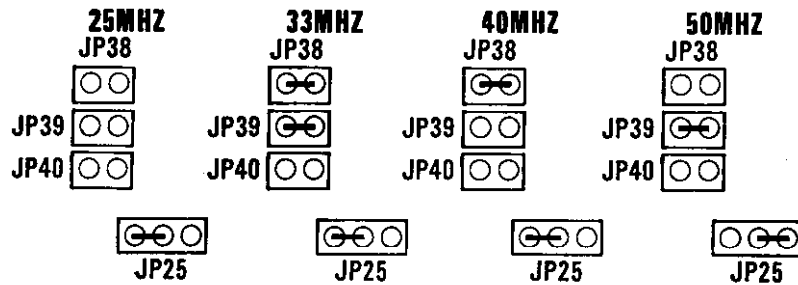
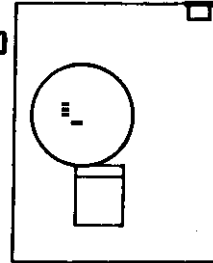
#### 3.9V



## Technical Summary

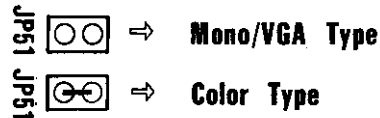
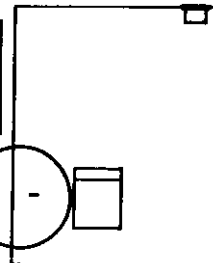
### System Speed Selection: JP25, JP38, JP39, JP40

Speed	JP25	JP38	JP39	JP40
25 MHZ	1-2	Open	Open	Open
33 MHZ	1-2	Short	Short	Open
40 MHZ	1-2	Short	Open	Open
50 MHZ	2-3	Open	Short	Open



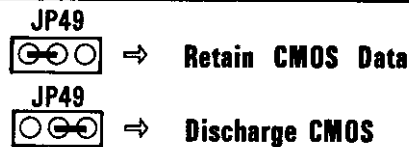
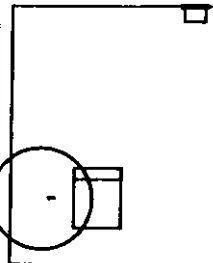
### Display Type Selection: JP51

JP51	Function
Open	Mono/VGA Type
Short	Color Type



### CMOS Clear Jumper: JP49

JP49	Function
1-2	Retain CMOS Data
2-3	Discharge CMOS



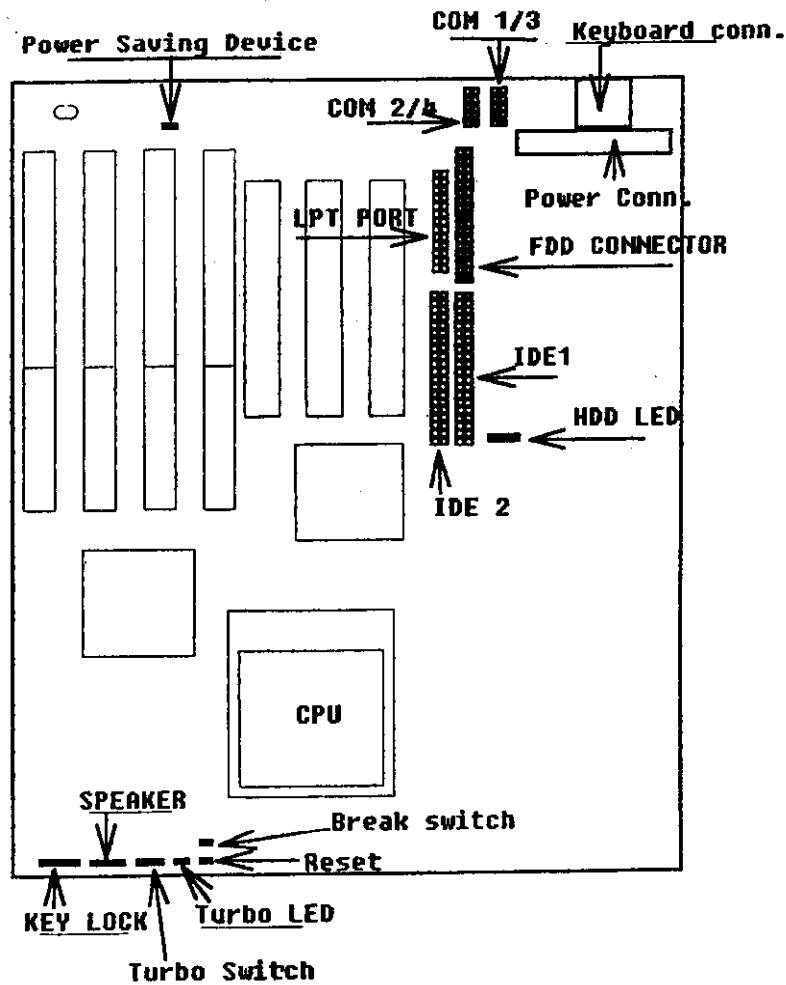


## Technical Summary

### 3.2 Connectors

The connectors are made of the same component as the umper switches. There are connectors for the switches and indicator lights from the system case. There are also connectors for the on-board I/O port and the leads from a system power supply.

#### External Connectors On-board Position.



## Technical Summary

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### **J1:** Keyboard Connector

Pin No.	Function
1	Key Clock.
2	Key Data.
3	NC.
4	VCC (+ 5V).
5	GND.

### **J2:** Power Connector

Pin No.	Function
1	Power Good.
2, 10, 11, 12	VCC (+ 5V).
3	+ 12V.
4	- 12V.
5, 6, 7, 8	GND.
9	- 5V.

### **KEYLOCK:** Power(Green) LED & Key-lock Connector

Pin No.	Function
1	LED anode (+).
2	NC.
3	LED cathode (-).
4	Key Lock.
5	GND.

### **SPEAKER:** Speaker Connector

Pin No.	Function
1	VCC.
2	NC.
3	NC.
4	Data.

## Technical Summary

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### **TB.SW:** Turbo Switch

Pin No.	Function
Pin 2-3 short	For high speed (Turbo Mode.)
Pin 1-2 short or 2-3 open	For low speed (Non-Turbo Mode).

### **TB.LED:** Turbo LED Connector

Pin No.	Function
1	LED cathode (-).
2	LED anode (+).

### **RESET:** Reset Switch

open	Normal operation.
short	Hardware reset system.

### **BK.SW:** Green Function Switch

Pin No.	Function
short	System entering Suspend mode.
open	Normal operation.

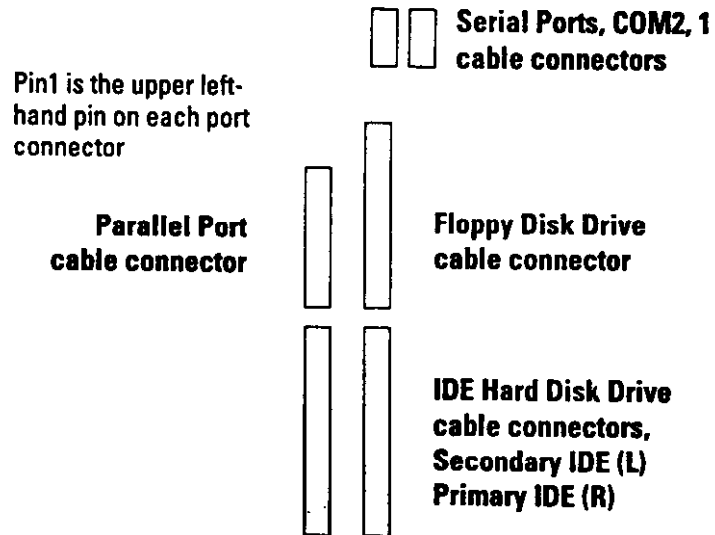
### **JP 33:** Power Saving Device.

Pin No.	Function
1	High Level.
2	GND.

## Technical Summary

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**I/O Port Connectors: IDE1, IDE2, FDC, LPT, COM1/3, COM2/4**



When you connect a ribbon cable to any of these I/O connectors, you must orient the cable connector so that the Pin 1 edge of the cable is at the Pin 1 end of the on-board connector. The Pin 1 edge of the ribbon cable is colored to indentify it.

**HDD-LED** : HD LED indicator.

**IDE 1** : On board Primary IDE Connector.

**IDE 2** : On board Secondary IDE Connector.

**COM 1/3** : On board Serial 1 Connector.

**COM 2/4** : On board Serial 2 Connector.

**FDC** : On board FDC Connector.

**LPT** : On board Parallel Port Connector.

## Technical Summary

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### ***Port & Controller Cables***

The mainboard comes with the following cables:

- 1 serial port and one parallel port ribbon cables attached to one mounting bracket
- 1 serial port ribbon cable with mounting bracket
- 1 IDE ribbon connector cables
- 1 floppy disk drive ribbon connector cable.

### ***Connector and Port Cables***

**Floppy Drive ribbon cable**



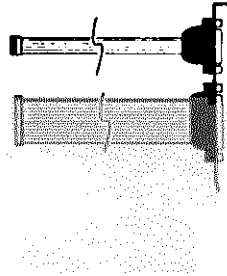
**Serial ribbon cable**



**IDE ribbon cables**



**Serial & parallel ribbon cables**



## **4. SOFTWARE GUIDE**

This chapter explains the Setup Utility for the Award BIOS, the SCSI BIOS and drivers, and the system BIOS flash memory update utility.(the BIOS flash memory is optional)

### **4.1 Award BIOS Setup**

All computer mainboards of this type have a 'Setup' utility program stored in the BIOS ROM that is used to create a record of the system configuration and settings. If you received your mainboard installed as part of a system, the proper entries have probably already been made. If so, you might want to call up the Setup Utility, as described later, to take a look at them, and perhaps record them for future reference, particularly the hard disk specifications.

If you are installing the board or reconfiguring your system, you'll need to enter new setup information. This section explains how to use the program and make the appropriate entries.

The Setup Utility is stored in the BIOS ROM. When you turn the computer on, a screen message appears to give you an opportunity to call up the Setup Utility. It displays during the POST (Power On Self Test). If you don't have a chance to respond, reset the system by simultaneously typing the < Ctrl >, < Alt > and < Delete > Keys, or by pushing the "Reset" button on the system cabinet. You can also restart by turning the system OFF then ON.

This message will then reappear:

TO ENTER SETUP BEFORE BOOT PRESS < Ctrl > < Alt > < Esc > or < Del > Key.

After you press the < Del > key the main program screen will appear, displaying the following choices.

## Software Guide

### Main Program Screen

ROM PCI/ISA BIOS (2A41BR02) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
<b>STANDARD CMOS SETUP</b> BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PCI CONFIGURATION SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	PASSWORD SETTING IDE HDD AUTO DETECTION HDD LOW LEVEL FORMAT SAVE & EXIT SETUP EXIT WITHOUT SAVING
ESC : Quit F10 : Save & Exit Setup	↑↓←→ : Select Item (SHIFT)F2 : Change Color
Time, Date, Hard Disk Type...	

This screen provides access to the utility's various functions.

**Note:**The "BIOS Defaults" are minimized settings for troubleshooting. Use the "Setup Defaults" to load optimized defaults for regular use. If you choose defaults at this level, it modifies all applicable settings.

A section at the bottom of the screen explains the controls for this screen. Use the arrow keys to move between items, < Shift > + < F2 > to change the color scheme of the display and < Esc > to exit the utility. If you want to save changes, press the < F10 > key to save the changes you made and exit the utility. Another section at the bottom of the screen displays a brief explanation of the item highlighted in the list.

## Software Guide

### Standard CMOS Setup

“STANDARD CMOS SETUP” records some basic system hardware information and sets the system clock and error handling. If your mainboard is already installed in a working system you will not need to do this. If the configuration record which gets stored in the CMOS memory on the board is lost or corrupted, or if you change your system hardware configuration, you will need to recreate the record. The configuration record can be lost or corrupted if the on-board battery that maintains it weakens or fails.

### Standard CMOS Setup Screen

ROM PCI/ISA BIOS (2A41BR02)								
STANDARD CMOS SETUP								
AWARD SOFTWARE, INC.								
Date (mm:dd:yy) : Wed, Apr 19 1995								
Time (hh:mm:ss) : 17:48:56								
HARD DISKS	TYPE	SIZE	CYLS	HEADS	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 : 1.2M , 5.25 in.								
Drive B : None								
Video : EGA/VGA								
Halt On : All Errors								
Base Memory: 640K								
Extended Memory: 7168K								
Other Memory: 384K								
Total Memory: 8192K								
ESC : Quit		↑↓←→ : Select Item		PU/PD/+/- : Modify				
F1 : Help		(SHIFT)F2 : Change Color						

“STANDARD CMOS SETUP” displays a screen with a list of entries. Follow the on-screen instructions to move around the screen. Instructions at the bottom of the screen list the controls for this screen. Use the arrow keys to move between fields, and the <Page Up>, <Page Down> or plus and minus keys to change the option shown in the selected field: pressing <shift>+<F2> changes the color scheme of the display, and <Esc> exits this level and returns to the main screen.



## Software Guide

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Modifiable fields appear in a different color. If you need information about what changes to make, press the < F1 > key. The help menu will then give you information on the item highlighted. The display of available memory at the lower right-hand side of the screen functions automatically.

### ***Date & Time***

The first two lines on the screen are the date and time settings for the system clock. You can correct them if they are wrong.

### ***Hard Drive Type***

You must enter the specifications of certain types of hard disk drive if they are installed in your system. MFM, ESDI and IDE hard disks all need to have their specifications recorded here.

If you have one or more SCSI hard disks installed in your system, you do not need to enter their specifications here. SCSI drives operate using device drivers and are not supported directly by any current PC BIOS.

There are four hard disks listed "Primary Master", "Primary Slave", "Secondary Master" and "Secondary Slave". For each IDE channel, the first device is the 'master' and the second device the 'slave'. Note that these refer to the physical drive (think of them as 'Drive 1' and 'Drive 2' etc.), not to any logical drives or partitions you might create under an operating system such as MS-DOS. You can install only two MFM or ESDI hard disks, which require a separate controller card, as "Primary Master" or "Primary Slave". If you use the on-board Local Bus IDE controller which supports Enhanced IDE features, you can install four IDE hard disk drives.

## Software Guide

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To enter the specifications for an MFM or ESDI hard disk drive, you must first select a 'type'. You can select the "User" option and enter the specifications yourself manually or there are 46 pre-defined drive specifications which you can look through to see if the specifications for your drive are assigned a type number. Do this by using the <Page Up> or <Page Down> key to change the option listed after the drive letter.

For an IDE hard drive, you should use the auto-detection utility described later to enter the drive specifications automatically. If you want to do this, leave the drive set to "None". You can enter the specifications yourself manually by using the User option if you want to.

There are six categories of information you must enter: Cyls. (number of cylinders), "Heads" (number of read/write heads), "Precomp" (write precompensation), "LandZone" (landing zone), "Sectors" (number of sectors) and "Mode". The size entry is automatically determined by the other entries. The hard disk vendor's or system manufacturer's documentation should provide you with the drive specifications. If you have an IDE drive, unless your drive is already formatted with specifications different from those detected by the auto-detection utility, the easiest thing to do is use the auto-detection feature to enter the drive specifications.

### **Mode Setting For Hard Disk Drives Larger Than 528MB**

The last of the specification entries, Mode, requires additional explanation. The Mode settings are for IDE hard disks only. You can ignore this item for MFM and ESDI drives. There are three entries you can select from in the Mode field, "Normal", "Large" and "LBA".

## Software Guide

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Set Mode to the Normal setting for IDE hard disk drives smaller than 528MB. Use the LBA setting for drives over 528 MB that use Logical Block Addressing mode to allow larger IDE hard disks. The Large setting is for drives over 528MB that do not use the LBA mode. This type of drive can only be used with MS-DOS and is uncommon. The majority of IDE drives over 529MB use the LBA mode.

**Note:** Entering incorrect drive specifications will result in a hard disk drive functioning improperly or not at all.

### ***Floppy Disk Drives***

The next two lines record the types of floppy disk drive present. The five options for drives A and B are:

360KB, 5.25 in.

1.2MB, 5.25 in.

720KB, 3.5 in.

1.44MB, 3.5in.

2.88MB, 3.5in.

None

Highlight the listing after each drive name and select the appropriate entry.

## Software Guide

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### ***Video Display Types***

**`Video`** refers to the type of video display card your system has. The five options are:

EGA/VGA

Mono(for Hercules or MDA)

CGA 40

CGA 80

You should select the setting that matches your video display card. If you have a VGA or any higher resolution card, choose the EGA/VGA setting.

### ***Error Handling***

The last line **`Halt On`** controls whether the system stops in case of an error. The options are:

All Errors

No Errors

All, But Keyboard

All, But Diskette

All, But Disk/Key

For most purposes, we suggest that you leave the setting on the default, **`All Errors`**, unless you know why you want to use a different setting.

When you have made your selections, exit to the main program screen by pressing the < Esc > key.

## Software Guide

### BIOS Features Setup

“BIOS FEATURES SETUP” is a list of system configuration options. Some entries are defaults required by the main-board’s design. Others will improve your system’s performance if enabled, or let you set up some system features according to your preference.

### BIOS Features Setup Screen

ROM PCI/ISA BIOS (2A41BR02) BIOS FEATURES SETUP AWARD SOFTWARE INC			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CFFFF Shadow	: Disabled
External Cache	: Enabled	D0000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DFFFF Shadow	: Disabled
Boot Sequence	: C,A		
Swap Floppy Drive	: Disabled		
Boot Up Floppy seek	: Disabled		
Boot Up NumLock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 280		
Security Option	: Setup		
		* ESC : Quit      ↑↓← : Select Item	
		F1 : Help      PU/PD/+/- : Modify	
		F5 : Old Values (SHIPT) F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

A section at the lower right of the screen explains how to navigate and make changes. The controls are the same as for the Standard CMOS Setup.

If you need information about what changes to make, highlight an entry and press the < F1 > key. A pop-up help menu will display information about the highlighted item. Press the < F5 > key to recall the last set of values saved for this page. Pressing the < F6 > key loads the BIOS default values for this page and < F7 > loads the Setup default values.

## Software Guide

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The following explains the options for each entry and indicates the default settings (Setup Defaults) for this screen.

### ***Virus Protection***

The "Virus Warning" default setting is "Disabled". This feature protects the boot sector and partition table of your hard disk. Any attempt to write to them will halt the system and cause a warning message to appear. If this happens, you can either allow the operation to continue or stop it and use an anti-virus utility on a virus-free bootable floppy disk to reboot and investigate your system.

### ***Cache Control***

The "CPU Internal Cache" and "External Cache" default settings are "Enabled". These settings enable CPU's 'Level 1' built-in cache and the 'Level 2' secondary cache.

### ***Boot Up Features***

The "Quick Power On Self Test" default setting is "Enabled". This speeds up the Power On Self Test (POST) by skipping some items that are normally checked during the full POST. If your system is functioning normally, you can use this feature to speed the boot up process.

The "Boot Sequence" default setting is "C:, A:", the other option is "A:, C:". The setting determines where the computer looks first for an operating system, the hard disk or the floppy drive.

The "Swap Floppy Drive" default setting is "Disabled". When enabled, the BIOS will swap floppy drive assignments so that Drive A will function as Drive B and Drive B as Drive A:-

## Software Guide

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under DOS.

The **Boot Up Floppy Seek** default setting is **Disabled**. When enabled, the BIOS will check if there is a 360KB floppy disk drive installed. Don't change this unless there is a 360KB drive installed.

The default **Boot Up NumLock Status** setting is **On**. When the computer boots, the numbers on the numeric keypad of an IBM-compatible extended keyboard will be active. If you turn this off the keypad cursor controls will be active.

### **Keyboard Interface**

The **Typematic Rate Setting** default setting is **Disabled**. If enabled, you can set the typematic controls that follow.

The **Typematic Rate (Char/Sec)** controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 characters per second (default is 6).

The **Typematic Delay (Msec)** controls the time between the display of the first and second characters. There are four delay rate choices: 250ms, 500ms, 750ms and 1000ms (default is 250 ms).

### **Password Control**

The **Security Option** controls the Password Setting in the main screen. The default setting is **Setup**. This will allow the system to boot, and use the Supervisor Password only to protect the Setup Utility settings from being tampered with. The other setting is **system** uses the User password feature every time you boot up. You create a password by using the Supervisor or User Password command from the main screen as explained later in this section.

## Software Guide

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### **Shadow Controls**

An unlisted default automatically copies the system BIOS into the system DRAM to improve performance.

the default setting for the Video BIOS Shadow is Enabled. This copies the video display card BIOS into system DRAM to improve performance.

The next 3 lines, C800-CFFF Shadow to D8000-DFFFF Shadow are for shadowing other expansion card ROMs. The default setting for these areas is Disabled. If you have other expansion cards with ROMs on them, you will need to know which addresses the ROMs use to shadow them specifically. If you don't know and cannot find out, you can enable all of the ROM shadow settings. This ensures that any ROMs present will be shadowed. It will also reduce the memory available between 640KB and 1024KB.

After you have made your selections in BIOS Features Setup, press the <Esc> key to go back to the main screen.

### **Chipset Features Setup**

This screen controls the settings for the board's chip set. The controls for this for this screen are the same as for the previous screen.



## Software Guide

### Chipset Features Screen

ROM PCI/ISA BIOS (2A41BR02) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	Enable	IDE 1 Master Mode	Auto
ISA Bus Clock	1/4 PCLK	IDE 1 Slave Mode	Auto
Cache Write Cycle	2 CCLK	IDE HDD Block Mode	Disable
DRAM Speed	Slowest		
DRAM Slow Refresh	Disable		
CPU Burst Write	Disable		
L2 Cache Policy	Write Back		
L2 Cache Tag Bits	8 bits		
Onboard FDC Controller	Enabled		
Onboard Serial Port 1	COM1		
Onboard Serial Port 2	COM2		
COM3 & COM4 Address	338H, 238H		
Onboard Parallel Port	278H		
Parallel Port Mode	Normal	ESC : Quit	↑↓←→ : Select Item
Onboard 496B IDE Port	Enable	F1 : Help	PU/PD/+/- : Modify
IDE 0 Master Mode	Auto	F5 : Old Values (SHIFT)F2	: Color
IDE 0 Slave Mode	Auto	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

All the entries on the left side of the screen are optional settings for this mainboard that are defined by the Auto Configuration feature, which configures the settings based on the CPU clock speed. Some of the settings are fixed under auto-configuration, others can still be changed. Generally, you should not change the settings unless you know what you doing. The exception to these are the CPU Internal Cache setting, which you can set to either Write Back or Write Through if you know which protocol the CPU internal cache is (although the Auto setting will do this automatically) and the IDE Mode settings.

### ***Onboard Local Bus IDE Settings***

The default setting for "Onboard Local Bus IDE" is "Enable". This enables both the Primary and Secondary IDE channels for the onboard Local Bus IDE controller. If you are not using the on-board IDE feature, you can set this entry to "Disable" to free

## Software Guide

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IRQ 14 & 15, which the on-board IDE controller uses when enabled.

### ***IDE Mode Settings***

The default setting for the "IDE 0 Master Mode", "IDE 0 Slave Mode", "IDE 1 Master Mode" and "IDE 1 Slave Mode" are "Auto". With this setting, the BIOS will automatically determine the optimum IDE drive mode for the installed drives and set the IDE wait state for both IDE 0, the primary channel, and IDE 1, the Secondary channel. You can set the mode here manually to Mode 0, 1, 2, 3 or 4, but we do not recommend doing this because your drives may not work properly if you use the wrong setting.

The "IDE HDD Block Mode" default settings is "Disable". This feature enhances hard disk performance by making multi-sector transfers instead of one sector per transfer. Most IDE drives, except very early designs, can use this feature. If you are going to use the driver software for the on-board IDE controller, disable this feature.

### ***I/O Controller Settings***

The default setting for the "Onboard FDC Controller" is "Enabled". This setting allows you to connect your floppy disk drives to the onboard "Floppy" connector instead of a separate controller card. Choose the "Disabled" setting if you want to use a separate controller card.

## Software Guide

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### **Serial Ports**

“Onboard Serial Port 1” and “Onboard Serial Port 2” control the mainboard’s two on-board serial ports. The options are:

COM1 address is 3F8H (Onboard Serial Port 1 default)

COM2 address is 2F8H (Onboard Serial Port 2 default)

COM3 default address is 338H

COM4 default address is 238H

Disabled turns off the on-board ports

Make sure both ports have different COM assignments.

The options for the “COM3 & COM4 Address” line are:

3E8H, 2E8H

2E8H, 2E0H

220H, 228H

338H, 238H Default setting

In a normal system configuration, it should be unnecessary to change these defaults.

### **Parallel Port**

The options for “Onboard Parallel Port” are:

378H

3BCH

278H Default setting

378H

Disabled

This line controls the on-board parallel port. If you use an I/O

## Software Guide

card with a parallel port, make sure the addresses don't conflict. IBM PC-compatible computers can have three parallel ports.

### Parallel Port Mode

The options for "Onboard LPT Port Mode" are:

Normal      Default setting  
EPP  
ECP  
ECP&EPP

If you have a parallel interface peripheral device that uses one of the parallel port enhancements listed, set this line for the enhanced mode your peripheral supports.

When you are done with this section, press the <Esc> key to go back to the main screen.

### Power Management Setup

Power Management Setup controls the mainboard's "green" features. The features shut down the video display and hard disk to save energy.

#### The Power Management Setup Screen

ROM PCI/ISA BIOS (2A41BR02) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	: User Define	IRQ3 (COM 2)	: Enable
Video Off Option	: Susp, Stdby->Off	IRQ4 (COM 1)	: Enable
Video Off Method	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Enable
Suspend Switch	: Enable	IRQ6 (Floppy Disk)	: Enable
		IRQ7 (LPT 1)	: Enable
		IRQ8 (RTC Alarm)	: Disable
		IRQ9 (IRQ2 Redir)	: Enable
		IRQ10 (Reserved)	: Enable
		IRQ11 (Reserved)	: Enable
		IRQ12 (PS/2 Mouse)	: Enable
		IRQ13 (Coprocessor)	: Enable
		IRQ14 (Hard Disk)	: Enable
		IRQ15 (Reserved)	: Enable
		ESC : Quit	↑↓→← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (SHIPT)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	
** PM Timers **			
HDD Power Down	: Disable		
Dore Mode	: Disable		
Standby Mode	: Disable		
Suspend Mode	: Disable		
** PM Events **			
PCI Master Activity	: Enable		
COM Ports Activity	: Enable		
LPT Ports Activity	: Enable		
HDD Ports Activity	: Enable		
DMA Ports Activity	: Enable		
VGA Activity	: Disable		

## Software Guide

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### **Power Management**

"Power Management" is the master control for the power saving modes, Display Turn off and HDD Power down that together form the hardware power conservation scheme. There are four settings:

**Max Saving** Sets the power conservation options to maximize power saving by putting the system into power saving mode after a brief period of system inactivity.

**Min Saving** Another set of power saving assignments which activate each after a moderate period of system inactivity.

**Disable** Turns off all power saving

**User Defined** The default-allows you to set power saving options according to your requirements.

### **Min Saving**

The "Min Saving" defaults are "10sec" and "20sec".

### **Max Saving**

The "Max Saving" defaults are "40Min".

### **Video Off**

The "Video Off Option" default is "Susp, Stby-> Off". This line defines when the video off features activate. The next line sets how.

The "Video Off Method" default is "V/H SYNC + Blank". The DPMS (Display Power Management System) setting allows the BIOS to control the video display card if it has the DPMS fea-

## Software Guide

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ture. If your video display card supports "green" features you can use one of these settings. If not, set this line to the "Blank Screen" setting. When power management blanks the monitor screen, the default setting saves more power by turning off the CRT's vertical and horizontal scanning. With non-green monitors it blanks the screen but doesn't stop CRT scanning.

Note: "Screen Saver" software does not work with this feature. Screen savers are to prevent burning in a static image on the CRT while the monitor is on. A screen saver can't display while the monitor is shut down to save both energy and the screen.

### ***Suspend Switch***

The "Suspend Switch" default is "Enable". This enables the BK.SW on the mainboard. The BK.SW connects to the lead from a Suspend switch mounted on the system case.

### ***PM Timers***

The next lines control the time-out settings for the Power Management scheme. The features are "HDD Power Down", which puts the hard disk into its lowest power consumption mode, and the Doze, Standby and Suspend system inactivation modes.

The system automatically recovers from any power saving mode when there is system activity, as for example, when you type any key, or when there is an IRQ wake-up event such as moving the mouse or a modem ring.

"HDD Power Down" shuts down any IDE hard disk drives in the system if they are not accessed for the specified period. The time settings range from "1 Min" to "20 Min", or "Disable".

## Software Guide

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HDD Power Down does not affect SCSI hard disks.

The **Doze Mode**, **Standby Mode** and **Suspend Mode** lines set the period of time after which each of these modes activate.

### **PM Events**

If there is any activity from any part of the system listed in this group while the system is suspended, the system will wake up if that item is Enabled. You can set IRQs 3-15 individually in the list at the right of the screen.

Note: Normally, a Microsoft serial mouse or compatible will use either COM1 (IRQ4) or COM2 (IRQ3) and a PS/2-type mouse will use IRQ12. If you know which IRQ your mouse is using, you can make sure the Wake-up Event for that IRQ is turned on here and the system will wake up when you move the mouse or click a button

### **IRQ3 to IRQ15 Individual Settings**

You can set IRQs 3-15 individually. Activity from any enabled IRQ will wake up the system if the **IRQ1-15 Activity** item in PM Events is enabled.

When you are done here, press the <Ecs> key to go back to the main screen.

## Software Guide

### PCI Configuration Setup

This option sets the mainboard's PCI Slots. Run this option as follows:

1. Choose "PCI CONFIGURATION SETUP" from the Main Menu and the following screen appears. (The screen below shows default settings.)

ROM PCI/ISA BIOS (2A4BR02)	
PCI CONFIGURATION SETUP	
AWARD SOFTWARE, INC	
Slot 1 Using INT#	: AUTO
Slot 2 Using INT#	: AUTO
Slot 3 Using INT#	: AUTO
1st Available IRQ	: 9
2nd Available IRQ	: 10
3rd Available IRQ	: 11
PCI IDE 2nd Channel	: Disable
PCI IDE IRQ Map To	: PCI-AUTO
Primary IDE INT#	: A
Secondary IDE INT#	: B

ESC : Quit	↑↓←→ : Select Item
F1 : Help	PGUP/PD/+/ - : Modify
F5 : Old Values (SHIFT)	F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

A short description of screen items follows:

- |   |  |
|---|--|
| <b>Slot 1 (2)(3)(4)<br/>Using INT#</b>        | Choose AUTO or assign PCI INT# number A, B, C, or D.<br>The default setting is AUTO.   |
| <b>1st (2nd)(3rd)<br/>(4th) Available IRQ</b> | If slot 1~4 is set to AUTO in the item above, then the BIOS automatically routes the INT# to the specified IRQ following the 1st (2nd)(3rd)(4th) IRQ order you assign. |



## Software Guide

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- PCI IRQ Activated by** Choose Edge or Level. Most PCI trigger signals are Level. This setting must match the PCI card.
- PCI IDE IRQ Map To** Select PCI-AUTO, ISA, or assign a PCI SLOT number (depending on which slot the PCI IDE is inserted). The default setting is PCI-AUTO, If PCI-AUTO does not work, then assign an individual PCI SLOT number.
- Primary IDE INT#** Choose INTA# , INTB# , INTC# , or INTD# . The default setting is INTB# .
- Secondary IDE INT#** Choose INTA# , INTB# , INTC# , or INTD# . The default setting is INTB# .
3. After you have finished with the PCI Slot Configuration, press the<Esc>key and follow the screen instructions to save or disregard your setting.

## Software Guide

### Load BIOS Defaults

"LOAD BIOS DEFAULTS" loads the troubleshooting default values permanently recorded in the BIOS ROM. These settings are non-optimal and turn off all high performance features.

The Standard CMOS Setup screen is not affected. To use this feature, highlight it on the main screen and press <Enter>. A line will appear asking if you want to load the BIOS default values. Press the <Y> key and then <Enter>. The default settings will load. Press <N> if you don't want to proceed.

### Load BIOS Defaults Screen

ROM PCI/ISA BIOS(PVI-4SP3) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PCI CONFIGURATION	SAVING
LOAD BIOS DEFAULTS	Load BIOS Defaults (Y/N)? N
LOAD SETUP DEFAULT	
ESC : Quit	↑↓←→ : Select Item
F10 : Save & Exit Setup	(SHIFT)F2 : Change Color
Load BIOS Defaults except Standard CMOS SETUP	

## Software Guide

### Load Setup Defaults

The "LOAD SETUP DEFAULTS" option loads optimized settings from the BIOS ROM. Use this option to load default settings for normal use.

The Setup Defaults default settings do not affect the Standard CMOS Setup screen. To use the Setup Defaults, highlight the entry on the main screen and press <Enter>. A line will appear asking if you want to load the Setup default values. Press the <Y> key and then press <Enter>. The Setup Defaults will load. Press <N> if you don't want to proceed.

### Load Setup Defaults Screen

ROM PCI/ISA BIOS (PVI-4SP3) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PCI CONFIGURATION	SAVING
LOAD BIOS DEFAULTS	Load SETUP Defaults (Y/N)? <b>Y</b>
LOAD SETUP DEFAULTS	
ESC : Quit	↑↓←→ : Select Item
F10 : Save & Exit Setup	(SHIFT)F2 : Change Color
Load SETUP Defaults except Standard CMOS SETUP	

## Software Guide

### Setting Supervisor & User Passwords

The "SUPERVISOR PASSWORD" and "USER PASSWORD" options set passwords. The Supervisor Password is for system and Setup Utility access. The User Password is for the system only. The mainboard ships with no passwords. To create a password, highlight the type you want and press the <Enter> key. At the prompt, type your password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press <Enter> after you have finished typing in the password. At the next prompt, confirm the new password by re-typing it and pressing <Enter> again. When you're done, the screen automatically reverts to the main screen. Remember, when you use this feature, the "Security Option" line in BIOS FEATURES SETUP will determine when entering the password will be required.

To disable either password, press the <Enter> key instead of entering a new password when the "Enter Password" dialog box appears. A message confirms the password has been disabled.

### Password Setting

ROM PCI/ISA BIOS (PVI-ASP3) CMOS SETUP UTILITY ANARD SOFTWARE, INC.	
STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PCI CONFIGURATION SETUP	BOOT WITHOUT SAVING
LOAD BIOS DEFAULTS	Enter Password: *****
LOAD SETUP DEFAULTS	
ESC : Quit	↑↓←→ : Select Item
F10 : Save & Exit Setup	(SHIFT)F2 : Change Color
Change/Set/Disable Password	

### **IDE HDD Auto Detection**

If your system has an IDE hard drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

This utility will detect as many as four IDE drives if your system configuration supports that many. In sequence, a set of parameters for each drive will appear in the box. To accept the entries displayed press the Y key, to skip to the next drive, press the N key. If you accept the values, the parameters will appear listed beside the drive letter on the screen and the next letter, without parameters will appear and the program will attempt to detect parameters for the next drive. If you press the N key to skip rather than accept a set of parameters, zeros are entered after that drive letter.

Remember, if you use another IDE controller that does not have Enhanced IDE support for four devices, you can only install two IDE hard disk drives. Your IDE controller must support Enhanced IDE features in order to use Drive E: and Drive F:. The on-board Local Bus IDE controller supports Enhanced IDE and has two connectors that support a total of four IDE devices. If you want to use another controller that supports four drives you must disable the on-board IDE controller in the Chipset Features Setup screen.

When you are finished, any entries you accepted are automatically entered on the line for that drive in the Standard CMOS Setup. Any entries you skipped are ignored and nothing is entered for that drive in Standard CMOS Setup.

## Software Guide

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### **IDE HDD Auto Detection Screen**

ROM PCI/ISA BIOS (FVI-4SP3) CMOS SETUP UTILITY ANARD SOFTWARE, INC.								
HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZ	SECTOR	MODE
Primary Master:								
Select Drive C Option (N=Skip)? N								
OPTIONS	SIZE	CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS	MODE	
1(Y)	307	790.	15	65535	790	57	NORMAL	

**Note:** If you are setting up a hard disk that supports LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not choose Large or Normal.

**Important!** This utility will only detect one set of parameters for an IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it. If the hard disk drive is already fully formatted when you install it, and different parameters than those detected here were used, you will have to enter them manually.

If the parameters listed don't match the ones used when the drive was formatted, the drive won't be readable. If the auto-detected parameters displayed do not match the ones that should be used for your drive, do not accept them. Press the <N> key to reject the values and enter the correct ones manually from the Standard CMOS Setup screen.

## *Software Guide*

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### **Save And Exit Setup**

The next selection on the Utilities menu is "SAVE AND EXIT SETUP". If you select this and press the <Enter> key the values entered during the current session will be recorded in the CMOS memory on the mainboard. The system will check it every time you turn your system on and compare it to what it finds as it checks the system. This record is required for the system to operate.

### **Exit Without Saving**

The last selection on the main screen is "EXIT WITHOUT SAVING". Selecting this option and pressing the <Enter> key lets you exit the Setup Utility without recording any new values or changing old ones. If you want to save a new configuration, do not use this option. If you use it, any new setting information will be lost.

You can now use your system without further reference to this utility unless you change the system hardware configuration. Remember, if the system configuration information stored in CMOS memory gets corrupted, you will have to reenter it.

## *Software Guide*

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### **4-2 Enhanced IDE Drivers**

This mainboard comes supplied with software drivers that enhance the performance of the on-board IDE controller and speed up hard disk drive I/O operations. The drivers are on the support floppy disk. The driver software includes drivers for MS-DOS, Windows, Windows For Workgroups, Windows NT, OS/2 and Novell Netware.

To install the drivers, follow the instructions in the "readme" text files that accompany the drivers

**NOTE:** To use the IDE driver you must set the "IDE HDD Block Mode" line in the BIOS Features Setup screen of the BIOS Setup utility to "Disabled".