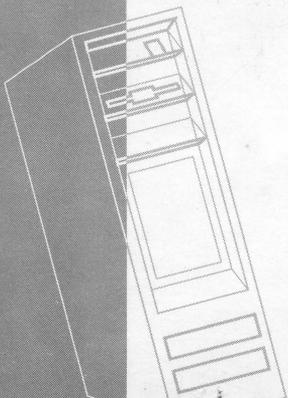
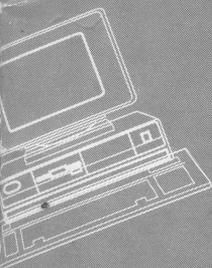


VL/ISA-PB486GRN



User Manual

**PC Main Board**



## **DISCLAIMER**

The information in this manual has been carefully checked and is believed to be accurate. We assume no responsibility for any inaccuracies that may still be contained in this manual. We reserve the right to make changes to this material at any time without notice.

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# 1. Introduction

This manual has two purposes. First, help users get familiar with the system board. Second, serve as a guide of procedures and specifications for future system upgrade.

OPTi 895 GREEN PC MB provides a highly integrated solution for fully compatible, high performance PC/AT platforms. It supports Intel's 80486DX4/DX2/DX/SX/SL Enhanced CPU, AMD486 and Cyrix microprocessor.

## Features

- CPU* --Intel 80486SX/DX/DX2/SL-Series  
--Intel P24C (DX4)  
--AMD Am486DX/DX2  
--Cyrix Cx486DX/DX2(M7)
- System Clock* --Use system clockchip generator IMI468, CPU operating frequency 8-100MHz
- DRAM Memory* --Support 4 banks of 72pin SIMM module.  
--Support 1MB to 64MB DRAM memory on board
- Cache Memory* --Support 128KB, 256KB or 512KB  
Secondary Cache memory on board  
--Support 486 Burst mode on Secondary Cache memory
- Shadow RAM* --Main BIOS Shadow function programmable  
--Video BIOS Shadow function programmable  
--Adapter BIOS Shadow function programmable  
--Shadow RAM Cacheable function programmable
- Green Function* --System Timeout Timer from 15 seconds to 4 hours  
--Auto-Mode is used to accommodate non SL-Series CPU, system clock slow down to 8 MHz  
--SMI-Mode is used to accommodate SL-Series CPU, system clock slow down to 0 MHz  
--Support individual Monitor Standby Mode (Monitor off) control  
--Support IDE Hard Disk Drive Power Down Mode control  
--Support External Power Control Port for monitor power on/off.  
--Wake up system by all IRQs, DRQs, and HDD/FDD I/O Ports

## ***Introduction***

- I/O Bus Slots* --Support APM (Advanced Power Management) function
- I/O Bus Slots* --32-bit VL-Bus Slot x 3 (support two Bus Masters)
- I/O Bus Slots* --16-bit ISA Slot x 6
- I/O Bus Slots* --8-bit ISA Slot x 1
- BIOS* --Licensed with Advanced AMI WinBIOS, Support Flash ROM BIOS
- Dimension* --2/3 Baby AT size (22cm x 25cm)

## 2. Hardware Configuration

Note : "\*" represents default jumper setting

### 2.1 Memory Configuration

The OPTi895 GREEN PC supports 4-pcs 72 Pin SIMM RAM. Up to 64 MB main memory size can be accommodated. A total of 16 different memory configurations are shown in the following table :

| INDEX | BANK 0<br>J21 | BANK 1<br>J22 | BANK 2<br>J23 | BANK 3<br>J24 | TOTAL<br>MEMORY |
|-------|---------------|---------------|---------------|---------------|-----------------|
| 1     | 1MB-S         | ---           | ---           | ---           | 1MB             |
| 2     | 1MB-S         | 1MB-S         | 1MB-S         | 1MB-S         | 4MB             |
| 3     | 2MB-D         | ---           | 2MB-D         | ---           | 4MB             |
| 4     | 2MB-D         | ---           | 4MB-S         | ---           | 6MB             |
| 5     | 8MB-D         | ---           | ---           | ---           | 8MB             |
| 6     | 4MB-S         | ---           | 4MB-S         | ---           | 8MB             |
| 7     | 2MB-D         | ---           | 8MB-D         | ---           | 10MB            |
| 8     | 4MB-S         | ---           | 8MB-D         | ---           | 12MB            |
| 9     | 16MB-S        | ---           | ---           | ---           | 16MB            |
| 10    | 8MB-D         | ---           | 8MB-D         | ---           | 16MB            |
| 11    | 4MB-S         | ---           | 16MB-S        | ---           | 20MB            |
| 12    | 16MB-S        | ---           | 16MB-S        | ---           | 32MB            |
| 13    | 32MB-D        | ---           | ---           | ---           | 32MB            |
| 14    | 32MB-D        | ---           | 32MB-D        | ---           | 64MB            |
| 15    | 4MB-S         | 4MB-S         | 4MB-S         | 4MB-S         | 16MB            |
| 16    | 16MB-S        | 16MB-S        | 16MB-S        | 16MB-S        | 64MB            |

"S" stands for single memory bank.

"D" stands for double memory bank.

**Note:**

At least 1MB main memory must be installed. The memory banks must be filled from BANK 0, then BANK 1, 2, 3. In addition, each memory bank must use the same type of SIMM RAM module.

# Hardware Configuration

## 2.2. CPU & Frequency Selection

### (I) CPU Selection (JP8, JP17, JP18, JP19, JP20, JP23, JP26, JP27, JP28, JP29, JP31, JP32, JP36)

| CPU TYPE | 486SX | 486DX/DX2 | SL - 486SX | SL - 486DX |
|----------|-------|-----------|------------|------------|
| JP8      | 2-3   | 2-3       | 2-3        | 2-3        |
| JP17     | OPEN  | OPEN      | OPEN       | OPEN       |
| JP18     | OPEN  | OPEN      | OPEN       | OPEN       |
| JP19     | 1-2   | 1-2       | 1-2        | 1-2        |
| JP20     | OPEN  | OPEN      | OPEN       | OPEN       |
| JP23     | 1-2   | 1-2       | 2-3        | 2-3        |
| JP26     | OPEN  | OPEN      | CLOSE      | CLOSE      |
| JP27     | OPEN  | OPEN      | CLOSE      | CLOSE      |
| JP28     | OPEN  | OPEN      | OPEN       | OPEN       |
| JP29     | OPEN  | 1-2       | OPEN       | 1-2        |
| JP31     | 2-3   | 1-2       | 2-3        | 1-2        |
| JP32     | OPEN  | 2-3       | OPEN       | 2-3        |
| JP36     | OPEN  | OPEN      | OPEN       | OPEN       |

| CPU TYPE | AMD 3.3V CPU | INTEL 486DX4   | Cyrix 486 DX                 |
|----------|--------------|----------------|------------------------------|
| JP8      | 2-3          | 2-3            | 5V CPU : 2-3<br>3V CPU : 1-2 |
| JP17     | OPEN         | OPEN           | 1-2                          |
| JP18     | 1-2 : 3X CLK | OPEN           | OPEN                         |
|          | 2-3 : 2X CLK |                |                              |
| JP19     | 1-2          | 1-2            | 2-3                          |
| JP20     | OPEN         | OPEN : 3X CLK  | OPEN                         |
|          |              | 1-2 : Reserved |                              |
|          |              | 2-3 : Reserved |                              |
| JP23     | 1-2          | 2-3            | 1-2                          |
| JP26     | OPEN         | CLOSE          | OPEN                         |
| JP27     | OPEN         | CLOSE          | OPEN                         |
| JP28     | OPEN         | OPEN           | 1-2 : M7 1X CLK              |
|          |              |                | 2-3 : M7 2X CLK              |
| JP29     | 1-2          | 1-2            | 1-2                          |
| JP31     | 1-2          | 1-2            | 1-2                          |
| JP32     | 2-3          | 2-3            | 2-3                          |
| JP36     | OPEN         | CLOSE          | OPEN                         |

### (II) Frequency selection (JP34, JP35)

| CPU                | JP34  | JP35    |
|--------------------|-------|---------|
| 25MHz              | CLOSE | OPEN    |
| 33MHz/66MHz/100MHz | OPEN* | CLOSE * |
| 40MHz/80MHz        | OPEN  | OPEN    |
| 50MHz              | CLOSE | CLOSE   |

### 2.3. Cache Size Selection (JP43, JP44, JP41, JP22)

| Cache Size | JP22 | JP41 | JP43  | JP44  | SRAM 8Kx8 | SRAM 32Kx8 | SRAM 128Kx8 |
|------------|------|------|-------|-------|-----------|------------|-------------|
| 128K       | 1-2  | 1-2  | OPEN  | CLOSE | U13       | U5-U8      | ---         |
| 256K       | 1-2  | 2-3  | CLOSE | CLOSE | ---       | U5-U13     | ---         |
| 512K       | 2-3  | 1-2  | CLOSE | CLOSE | ---       | U13        | U5-U8       |

### 2.4. VESA Local Bus Selection (JP38, JP39)

| JUMPER | SETTING | FUNCTION |
|--------|---------|----------|
| JP38   | OPEN *  | 0WS      |
|        | CLOSE   | 1WS      |
| JP39   | OPEN *  | <= 33MHz |
|        | CLOSE   | > 33MHz  |

*Note : J18 & J19 are VESA MASTER 0, J20 is VESA MASTER 1*

### 2.5. Green Device Connector (JP13)

| PIN NUMBER | FUNCTION   |
|------------|--|
| 1          | GND  |
| 2          | CONNECT TO EXTERNAL DEVICE FOR GREEN (AC POWER, VGA etc.)<br>NORMAL = HIGH<br>GREEN MODE = LOW |

When the system turns into Auto mode or SMI mode, the JP13-pin 2 will change from HIGH to LOW level. When the system is resumed, the pin 2 will return to high level. The jumper is used to connect the green function for monitor power on/off control.

### 2.6. External Power Management Interface (JP12)

| PIN NUMBER | FUNCTION   |
|------------|--|
| 1          | GND  |
| 2          | EXTERNAL POWER MANAGEMENT INTERFACE<br>NORMAL = HIGH<br>GREEN MODE = LOW |

JP12 is used to connect the external device to set Green Mode manually.

### 2.7. On Board CPU Voltage Selection CPU (JP21)

There are two choices available for the CPU speed :

| JP21  | FUNCTION                |
|-------|-------------------------|
| OPEN  | FOR 3.3V CPU (DX4 etc.) |
| CLOSE | FOR 5V CPU              |

If there is an on board Auto Detect 5V-3.3V Voltage regulator(Q4 on board), then there is no need to selection any CPU Voltage jumper setting. If there is no on board Auto Detect 5V-3.3V Voltage regulator, then you need to select the CPU Voltage manually using jumper JP21 .

## 2.8. Turbo Switch Connector (JP49)

There are two choices available for the CPU speed :

| TURBO  | SPEED | TURBO LED |
|--------|-------|-----------|
| CLOSE  | LOW   | OFF       |
| OPEN * | HIGH  | ON        |

## 2.9. CMOS Power Source (JP10)

| JP10  | OPERATION        |
|-------|------------------|
| 1-2   | CLEAR CMOS       |
| 2-3 * | ON BOARD BATTERY |

## 2.10. Mono/Color Display Selection (JP14)

Jumper JP14 inform the system what type of display is currently in use.

| JP14    | DISPLAY ADAPTER TYPE |
|---------|----------------------|
| OPEN    | MONO DISPLAY         |
| CLOSE * | COLOR DISPLAY        |

## 2.11. Reserved Jumper Settings (JP9, JP15, JP16, JP30, JP33, JP37, JP40, JP50)

Factory use only, Do not alter.

| JP9  | JP15 | JP16 | JP30 | JP33 | JP37 | JP40 | JP50 |
|------|------|------|------|------|------|------|------|
| OPEN | OPEN | OPEN | 1-2  | 1-2  | 2-3  | 2-3  | 2-3  |

## 2.12. Connectors

There are several connectors located on the OPTi 895 main board, They are used to connect some peripheral devices to enhance the performance of the system operation.

| CONNECTOR | FUNCTION                      |
|-----------|-------------------------------|
| PL1       | POWER CONNECTOR               |
| J3        | KEYBOARD CONNECTOR            |
| JP48      | TURBO LED CONNECTOR           |
| JP46      | POWER LED & KEYLOCK CONNECTOR |
| JP47      | SPEAKER CONNECTOR             |
| JP45      | HARDWARE RESET CONNECTOR      |



# Reconfigure Your System

## 3.2. Standard Setup

The WinBIOS setup options described in this section are selected by choosing the appropriate high-level icon from the WinBIOS Setup main menu selection screen. The selected windows is as follows.

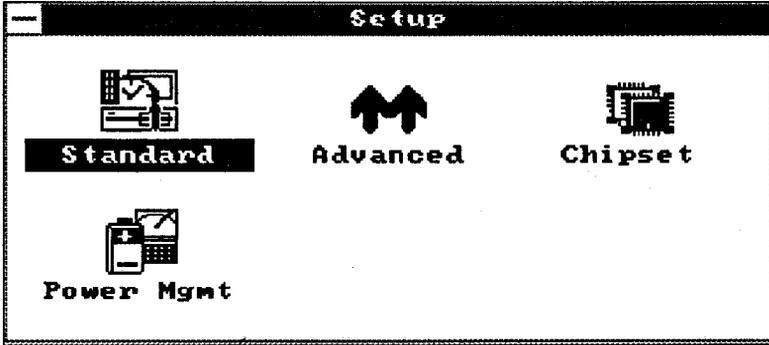


Figure 3-2 The screen of STANDARD SETUP

You can move the cursor to select the “Date/Time”, “Floppy A”, “Floppy B”, “Master Disk” or “Slave Disk” icons, then press the <Enter> key to set them up.

The STANDARD SETUP screen is as follows.

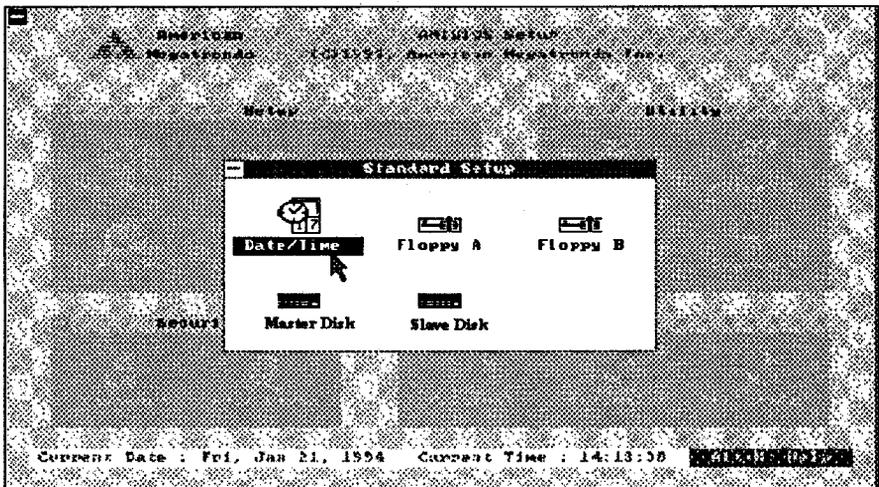


Figure 3-3 The screen of STANDARD SETUP

### 3.3. Advanced Setup

| <b>ADVANCED SETUP</b>            |            |
|----------------------------------|------------|
| System Keyboard                  | : Present  |
| Primary Display                  | : VGA/EGA  |
| Above 1MB Memory Test            | : Disabled |
| Extended BIOS RAM Area           | : 0:300    |
| System Boot up Num Lock          | : On       |
| Floppy Drive Seek At Boot        | : Disabled |
| System Boot Up Sequence          | : C:, A:   |
| System Boot Up CPU Speed         | : High     |
| External Cache                   | : Enabled  |
| Internal Cache                   | : Enabled  |
| Password Checking                | : Setup    |
| Video Shadow C000, 16K           | : Enabled  |
| Video Shadow C400, 16K           | : Enabled  |
| Shadow C800, 16K                 | : Disabled |
| Shadow CC00, 16K                 | : Disabled |
| Shadow D000, 16K                 | : Disabled |
| Shadow D400, 16K                 | : Disabled |
| Shadow D800, 16K                 | : Disabled |
| Shadow DC00, 16K                 | : Disabled |
| Shadow E000, 64K                 | : Disabled |
| Block Mode                       | : Disabled |
| IDE Prim Controller 32Bit xfer   | : Disabled |
| IDE Prim Master HDD LBA Mode     | : Disabled |
| IDE Prim Slave HDD LBA Mode      | : Disabled |
| Number of HDDs in Sec Controller | : None     |
| IDE Sec Controller 32Bit xfer    | : Disabled |
| IDE Sec Master HDD LBA mode      | : Disabled |
| IDE Sec Slave HDD LBA mode       | : Disabled |

**NOTE:**

- *Your BIOS can support 4 Hard Disk by changing "None" to "2" of Number of HDDs in Sec Controller*
- *Block Mode : Disabled. If your hard disk drive supports IDE block transfer mode, enable this option for faster IDE hard disk drive transfer rate.*
- *IDE Prim(Sec) Master (Slave) LBA Mode : Disabled. LBA (Logical Block Addressing) mode is for a new HDD accessing method to overcome the 528 Megabyte bottleneck.*

## Reconfigure Your System

### 3.4. Chipset Setup

| <b>CHIPSET SETUP</b>         |             |
|------------------------------|-------------|
| Auto Config                  | : Enabled   |
| Hidden Refresh               | : Enabled   |
| Slow Refresh                 | : Disabled  |
| Single ALE Enable            | : No        |
| Keyboard Reset Control       | : Disabled  |
| Master Mode Byte Swap        | : Disabled  |
| AT Cycle Wait State          | : Enabled   |
| AT Cycle Between I/O Cycles  | : 3         |
| AT Bus Clock Selection       | : CLKI/4    |
| AT Bus Clock Control         | : Synchro   |
| Fast AT Cycle                | : Disabled  |
| DRAM Burst Cycle             | : 4-3-3-3 * |
| Memory Write Wait State      | : 1W/S      |
| Cache Read Cycle             | : 2-2-2-2   |
| Cache Write Wait State       | : 0W/S      |
| Non - Cacheable Block-1 Size | : Disabled  |
| Non - Cacheable Block-1 Base | : Disabled  |
| Non - Cacheable Block-2 Size | : Disabled  |
| Non - Cacheable Block-2 Base | : Disabled  |
| Video Cacheable C000, 16K    | : No        |
| Video Cacheable C400, 16K    | : No        |
| Cacheable C800, 16K          | : No        |
| Cacheable CC00, 16K          | : No        |
| Cacheable D000, 16K          | : No        |
| Cacheable D400, 16K          | : No        |
| Cacheable D800, 16K          | : No        |
| Cacheable E000, 64K          | : No        |

**Auto Config Function : Enabled.** The BIOS automatically configures six features that are listed below, based on detection of the CPU clock speed.

**Auto Config Function : Disabled.** Allow user manually configures those features.

## Reconfigure Your System

If CPU clock is 33MHz, 40MHz, 50MHz, 66MHz, 80MHz or 100MHz, then change the chipset setup as shown as following table :

|                         | DX33MHz   | DX40MHz<br>DX2/80MHz | DX50MHz | DX2-<br>50MHz | DX2-<br>66MHz | DX4-<br>100MHz |
|-------------------------|-----------|----------------------|---------|---------------|---------------|----------------|
| AT Bus Clock Selection  | CLKI/4    | CLK/5                | CLKI/6  | CLK/3         | CLKI/4        | CLKI/4         |
| DRAM Burst Cycle        | 4-3-3-3 * | 5-4-4-4              | 5-4-4-4 | 5-4-4-4       | 4-3-3-3 *     | 5-4-4-4        |
| Memory Write Wait state | 0         | 1                    | 1       | 1             | 1             | 1              |
| Cache Read Cycle        | 2-2-2-2   | 3-2-2-2              | 3-2-2-2 | 3-2-2-2       | 2-2-2-2       | 2-2-2-2        |
| Cache Write Wait State  | 0         | 0                    | 1       | 1             | 0             | 0              |
| AT Cycle Wait State     | Disabled  | Enabled              | Enabled | Enabled       | Enabled       | Enabled        |

### 3.5. Power Management Setup

| <b>POWER MANAGEMENT SETUP</b> |            |
|-------------------------------|------------|
| IDE Power Down                | : Disabled |
| Power Management Mode Select  | : Disabled |
| System Timeout                | : 5 Min    |
| IRQ 1 Monitor                 | : Enabled  |
| IRQ 3 Monitor                 | : Enabled  |
| IRQ 4 Monitor                 | : Enabled  |
| IRQ 5 Monitor                 | : Disabled |
| IRQ 6 Monitor                 | : Enabled  |
| IRQ 7 Monitor                 | : Disabled |
| IRQ 8 Monitor                 | : Disabled |
| IRQ 9 Monitor                 | : Disabled |
| IRQ 10 Monitor                | : Disabled |
| IRQ 11 Monitor                | : Disabled |
| IRQ 12 Monitor                | : Disabled |
| IRQ 14 Monitor                | : Disabled |
| IRQ 15 Monitor                | : Disabled |
| DRQ 0 Monitor                 | : Disabled |
| DRQ 1 Monitor                 | : Disabled |
| DRQ 2 Monitor                 | : Disabled |
| DRQ 3 Monitor                 | : Disabled |
| DRQ 5 Monitor                 | : Disabled |
| DRQ 6 Monitor                 | : Disabled |
| DRQ 7 Monitor                 | : Disabled |
| Keyboard IO Port Monitor      | : Disabled |
| Floppy IO Port Monitor        | : Disabled |
| Hard Disk IO Port Monitor     | : Enabled  |
| Video IO Port Monitor         | : Disabled |
| Video Memory Monitor          | : Disabled |
| Screen Sleep                  | : Sleep    |
| APM Function                  | : Enabled  |

The OPTi 895 GREEN PC provides two GREEN Modes in Power Management Mode.

- The AUTO\_GREEN Mode is used to accommodate non-SL CPU's.
- The SMI\_GREEN Mode is used to accommodate SL CPU's.

You can monitor the following events for GREEN Mode.

### IDE Power Down

This option specifies the length of time of hard disk drive inactivity that must expire before the IDE hard drive enter the IDE Standby Power Down Mode. The settings are from *1 Min* to *15 Min* or *Disabled*. *IDE Power Down* is an individual feature with independent timeout timer and not affected by *Power Management Mode Select*.

#### **ATTENTION**

*Some Hard Disk Drives may not be power down even if the IDE Standby Power Down Mode is selected. Those Hard Disk Drive do not accept the BIOS IDE Power Down Command because of their build-in old version firmware.*

### Power Management Mode Select

OPTi 895 mainboard provides two Power Management mode, *Auto\_mode* for non SL-Series dynamic CPU, it slows down CPU clock speed to 8 MHz; *SMI\_mode* for SL-Series/P24C CPU, it may slow down CPU clock speed to 0 MHz (stop\_clock) when system timeout timer expires. Please refer to section 3.6 *Definition of Power Management States*.

### System Timeout

This option specifies the length of time for system enter *Auto\_mode* or *SMI\_mode* power management state. The timer options are 15sec, 2min, 5min, 30min, 45min, 1hr, or 4hr. The timer can be reloaded by any IRQs, DRQs, keyboard, video, hard disk and floppy accesses.

## Reconfigure Your System

### IRQ 1 (~15) Monitor

Enabled these options will allow the IRQs (Interrupt Request) input to be monitored for both inactivity for entering Auto\_mode/SMI\_mode and activity for entering Normal\_mode.

|                    |                  |                    |
|--------------------|------------------|--------------------|
| IRQ1:              | Keyboard         | Default - Enabled  |
| IRQ3:              | COM2, 4          | Default - Enabled  |
| IRQ4:              | COM1, 3          | Default - Enabled  |
| IRQ5:              | LPT2             | Default - Disabled |
| IRQ6:              | Floppy Disk      | Default - Enabled  |
| IRQ7:              | LTP1             | Default - Disabled |
| IRQ8:              | RTC              | Default - Disabled |
| IRQ9:              | Redirection IRQ2 | Default - Disabled |
| IRQ14:             | Hard Disk        | Default - Disabled |
| IRQ10, 11, 12, 15: | Reserved         | Default - Disabled |

### DRQ 0 (~ 7) Monitor

Enabled these options will allow the DRQ (DMA Request) input to be monitored for both inactivity for entering Auto\_mode/SMI\_mode and activity for entering Normal\_mode.

|                       |             |                    |
|-----------------------|-------------|--------------------|
| DRQ2:                 | Floppy Disk | Default - Disabled |
| DRQ 0, 1, 3, 5, 6, 7: | Reserved    | Default - Disabled |

### Keyboard I/O Port Monitor

Enabled this option will allow you to gain accesses on port 60h and 64h to be monitored for both entering Auto\_mode/SMI-mode and exiting Auto\_mode/SMI\_mode.

### Floppy I/O Port Monitor

Enabled this option will allow floppy port (3F5h) accesses to be monitored for both entering Auto\_mode/SMI\_mode and exiting Auto\_mode/SMI\_mode.

### Hard Disk I/O Port Monitor

Enabled this option will allow hard disk port (1F0h to 3F6H) accesses to be monitored for both entering Auto\_mode/SMI\_mode and exiting Auto\_mode/SMI\_mode.

### Video Memory Monitor

Enabled this option will allow video memory (A0000 to BFFFFF) accesses to be monitored for both entering Auto\_mode/SMI\_mode and exiting Auto\_mode/SMI\_mode.

### Video I/O Port Monitor

Enabled this option will allow video ports accesses to be monitored for both entering Auto\_mode/SMI\_mode and exiting Auto\_mode/SMI\_mode.

### Screen Sleep

This option specifies *screen sleep* when system enter Auto\_mode or SMI\_mode power management state. If the option is Sleep, the display will turn to blank when system enter to Auto/SMI\_mode. If the option is *Non-Sleep*, the display will freeze when system enter Auto/SMI\_mode.

### APM Function

This option specifies the system *Enabled* or *Disabled* APM (Advanced Power Management) Function.

It is no need to install an APM program for most CPUs, but you must install the APM program if you use the stop clock Green function (SMI).

*Caution:* If you don't install the APM program and enable the "System Timeout" item. After the timer stops, the system will has timer problems when the system wakes up.

### For an OS that provides APM function :

At present, only Microsoft DOS 6.x and Windows 3.1 provide APM programs.

1. For Microsoft DOS 6.x, the APM program's filename is POWER.EXE.

To install the APM , add the following statement to your config.sys file:

Device = C:\DOS\POWER.EXE

2. To install the APM in the Microsoft Windows 3.1 program:

In the Windows directory, execute **Setup** and highlight the item "**COMPUTER**," then choose the option "**MS-DOS system with APM.**" In the Windows "**MAIN**" group, execute **Control Panel** and choose "**POWER**," then set "Power Management in Advance." APM installation is then completed.

## 3.6. Definition of Power Management States

|  | <b>Normal_Mode</b><br>(Power Management Mode set to "Disabled") |
|--|---|
| CPU Type   | Non SL- Series CPU or SL-Series CPU                             |
| System Time-out Timer                              | Not Available   |
| CPU Clock  | Full Speed  |
| Screen Sleep                                       | Not Available   |
| Monitor Power Down<br>(By Ext. power control port) | Not Available   |
| IDE Standby Power Down                             | Available<br><br>(Independent Time-out Timer 1Min~15 Min)       |

|  | <b>Auto_Mode</b><br>(Power Management Mode set to "Auto")  |
|--|--|
| CPU Type   | Non S- Series CPU  |
| System Time-out Timer                              | 15 sec ~ 4 hours   |
| CPU Clock  | Slow Down to 8 MHz<br>(When system Time-out Timer Expires) |
| Screen Sleep                                       | Available<br>(Screen Sleep set to "Sleep")                 |
| Monitor Power Down<br>(By Ext. power control port) | Not Available  |
| IDE Standby Power Down                             | Available<br><br>(Independent Time-out Timer 1Min~15 Min)  |

## Reconfigure Your System

|  |  |
|--|--|
|  | <b>SMI_Mode</b><br>(Power Management Mode set to "SMI")    |
| CPU Type   | SL- Series CPU and Intel P24C                              |
| System Time-out Timer                              | 15 sec ~ 4 hours   |
| CPU Clock  | Slow Down to 0 MHz<br>(When system Time-out Timer Expires) |
| Screen Sleep                                       | Available<br>(Screen Sleep set to "Sleep")                 |
| Monitor Power Down<br>(By Ext. power control port) | Available<br>(Green Power Supply is needed)                |
| IDE Standby Power Down                             | Available<br>(Independent Time-out Timer 1Min~15 Min)      |

### 3.7. Utility

| ICON          | FUNCTION                                     |
|---------------|--|
| Detect Master | Automatically detect & configure Master Disk |
| Detect Slave  | Automatically detect & configure Slave Disk  |
| Color Set     | Set the color of WinBIOS Setup screen        |

## 3.8. Password Setup

WinBIOS Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system is booted or when you select the password icon in the "Security" window.

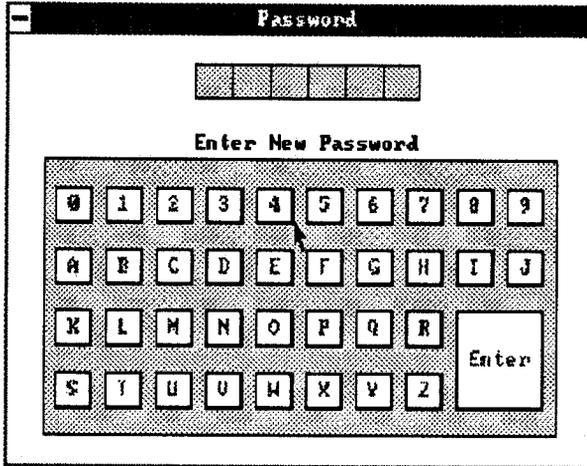


Figure 3-4 The screen of PASSWORD SETUP

You can enter a password by :

- Typing the password on the keyboard.
- Selecting each letter via the mouse, or
- Selecting each letter via the pen stylus.

Pen access must be customized for each specific hardware platform.

The password check option in ADVANCED SETUP (P.3-3) can be enabled by choosing either *always* (the password prompt appears every time the system is power on) or *setup* (the password prompt will appear only when WinBIOS setup is run). The password entered is stored in CMOS RAM.

Enter a 1-6 character password. The password does not appear on the screen when typed. WinBIOS will ask you to retype the password. WinBIOS will then display the following :

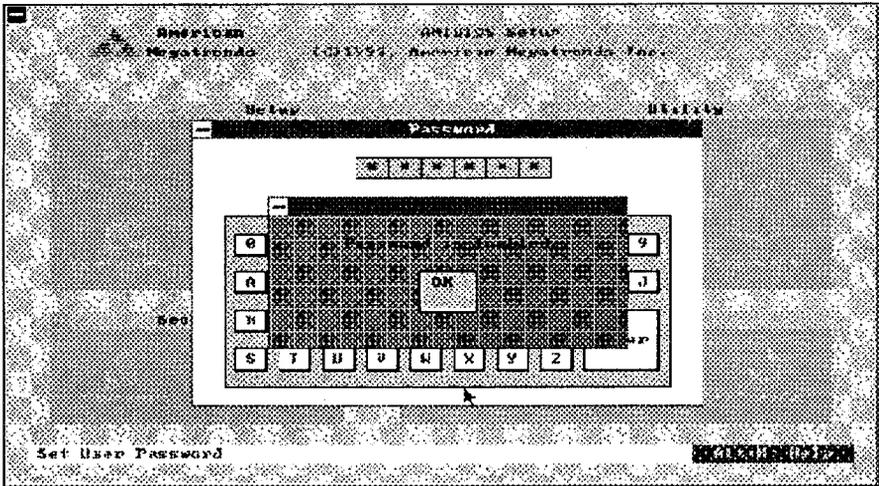


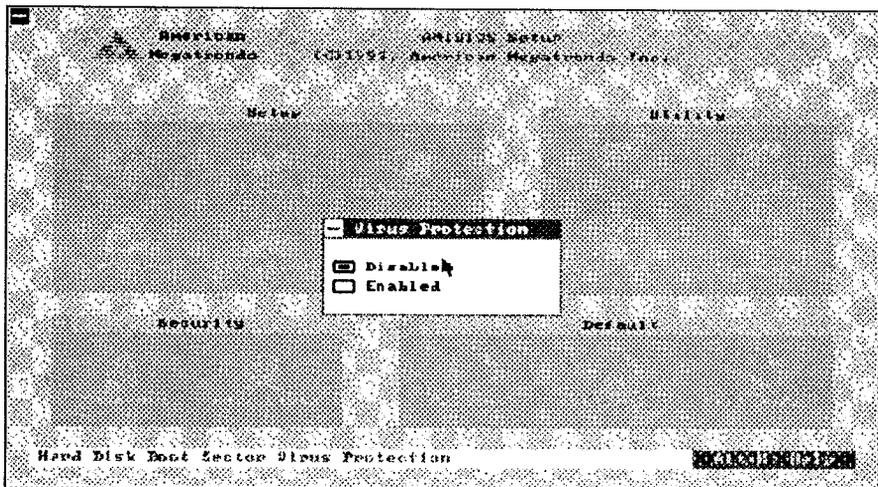
Figure 3-5 The screen of PASSWORD SETUP

Select the "Password" icon from the "security" section of the WinBIOS Setup main menu, Enter the password and press <Enter>. The screen does not display the characters entered. After the current password is entered, enter the new password as prompted and press <Enter>.

If the password confirmation is incorrect, an error message appears. If the new password is correctly entered, press <Esc> to return to the WinBIOS Setup main menu, the password is stored in CMOS RAM after WinBIOS Setup completed. The next time the system reboots, you are prompted for the password if the password function is present and is enabled.

## 3.9. Anti-Virus

When this icon is selected from the Security section of the WinBIOS Setup main menu, WinBIOS gives a warning when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The following screen appears when you select the Anti-Virus icon :



There are two settings, Enabled or Disabled. If enabled, the following message appears when a write is attempted to the boot sector. You may have to type N several times to prevent the boot sector write.

Boot Sector Write !!!  
Possible VIRUS : Continue (Y/N)? \_

The following message will be displayed after any attempt to format any cylinder, head, or sector of any hard disk drive via the BIOS INT13 Hard Disk Drive Service :

Format !!!  
Possible VIRUS : Continue (Y/N)? \_

You should disable *anti-virus protection* when you try to format a hard disk drive.

If the anti-virus feature is enabled, a virus warning message will be displayed when you attempt to format the hard disk drive.

If you select continue, formatting proceeds as normal.

If you do not want to continue formatting, you may have to press N several times (depending on how many retries are performed by the upper-level software). DOS, for example, does at least five retries before the format utility is actually aborted.

### **3.10. Default**

The icons in this section allow you to select a group of settings for all WinBIOS Setup options. You can use these icons to configure system parameters quickly for preferable settings.

#### **Original**

Choose the Original icon to return to the system configuration values present in WinBIOS Setup .

#### **Optimal**

You can load the *optimal* default settings for the WinBIOS Setup options by selecting the Optimal icon. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the Optimal settings are loaded automatically.

#### **Fail-Safe**

You can load the *Fail-Safe* WinBIOS Setup option settings by selecting the Fail-Safe icon from the Default section of the WinBIOS Setup main menu.

The Fail-Safe settings provide far from optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically.

# Appendix

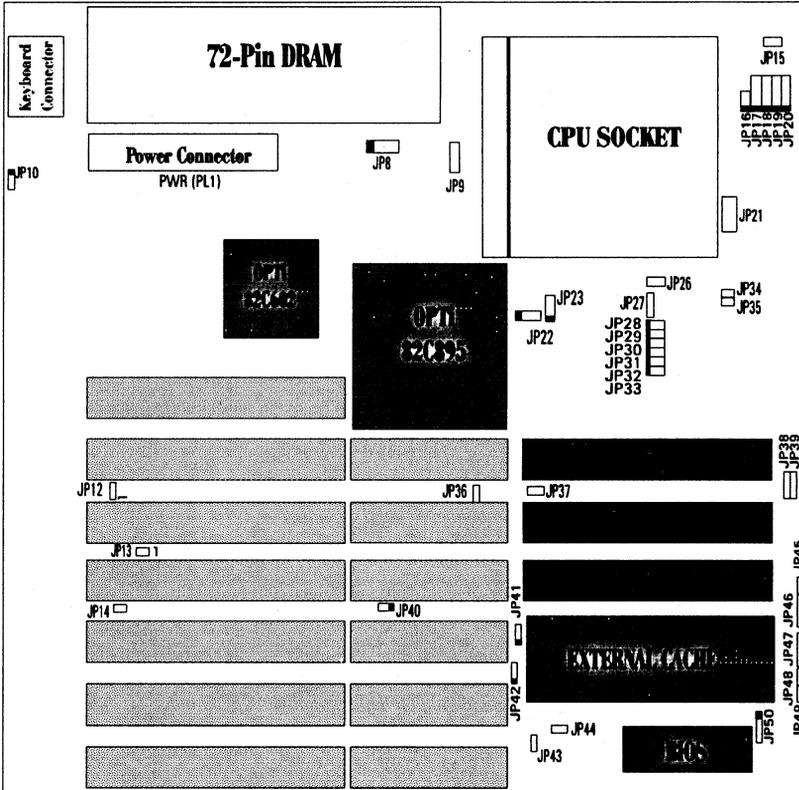
## 4. Appendix

### 4.1. Drive table

| Type | Cylinders | Heads | Write Precomp | LZ   | Sector | Size  |
|------|-----------|-------|---------------|------|--------|-------|
| 1    | 306       | 4     | 128           | 305  | 17     | 10MB  |
| 2    | 615       | 4     | 300           | 615  | 17     | 20MB  |
| 3    | 615       | 6     | 300           | 615  | 17     | 31MB  |
| 4    | 940       | 8     | 512           | 940  | 17     | 62MB  |
| 5    | 940       | 6     | 512           | 940  | 17     | 47MB  |
| 6    | 615       | 4     | 65535         | 615  | 17     | 20MB  |
| 7    | 462       | 8     | 256           | 511  | 17     | 31MB  |
| 8    | 733       | 5     | 65535         | 733  | 17     | 30MB  |
| 9    | 900       | 15    | 65535         | 901  | 17     | 112MB |
| 10   | 820       | 3     | 65535         | 820  | 17     | 20MB  |
| 11   | 855       | 5     | 65535         | 855  | 17     | 35MB  |
| 12   | 855       | 7     | 65535         | 855  | 17     | 50MB  |
| 13   | 306       | 8     | 128           | 319  | 17     | 20MB  |
| 14   | 733       | 7     | 65535         | 733  | 17     | 43MB  |
| 15   | —         | —     | —             | —    | —      | —     |
| 16   | 612       | 4     | 0             | 663  | 17     | 20MB  |
| 17   | 977       | 5     | 300           | 977  | 17     | 41MB  |
| 18   | 977       | 7     | 65535         | 977  | 17     | 57MB  |
| 19   | 1024      | 7     | 512           | 1023 | 17     | 60MB  |
| 20   | 733       | 5     | 300           | 732  | 17     | 30MB  |
| 21   | 733       | 7     | 300           | 732  | 17     | 43MB  |
| 22   | 733       | 5     | 300           | 733  | 17     | 30MB  |
| 23   | 306       | 4     | 0             | 336  | 17     | 10MB  |
| 24   | 925       | 7     | 0             | 925  | 17     | 54MB  |
| 25   | 925       | 9     | 65535         | 925  | 17     | 69MB  |
| 26   | 754       | 7     | 754           | 754  | 17     | 44MB  |
| 27   | 754       | 11    | 65535         | 754  | 17     | 69MB  |
| 28   | 699       | 7     | 256           | 699  | 17     | 41MB  |
| 29   | 823       | 10    | 65535         | 823  | 17     | 68MB  |
| 30   | 918       | 7     | 918           | 918  | 17     | 53MB  |
| 31   | 1024      | 11    | 65535         | 1024 | 17     | 94MB  |
| 32   | 1024      | 15    | 65535         | 1024 | 17     | 128MB |
| 33   | 1024      | 5     | 1024          | 1024 | 17     | 43MB  |
| 34   | 612       | 2     | 128           | 612  | 17     | 10MB  |
| 35   | 1024      | 9     | 65535         | 1024 | 17     | 77MB  |
| 36   | 1024      | 8     | 512           | 1024 | 17     | 68MB  |
| 37   | 615       | 8     | 128           | 615  | 17     | 41MB  |
| 38   | 987       | 3     | 987           | 987  | 17     | 25MB  |
| 39   | 987       | 7     | 987           | 987  | 17     | 57MB  |
| 40   | 820       | 6     | 820           | 820  | 17     | 41MB  |
| 41   | 977       | 5     | 977           | 977  | 17     | 41MB  |
| 42   | 981       | 5     | 981           | 981  | 17     | 41MB  |
| 43   | 830       | 7     | 512           | 830  | 17     | 48MB  |
| 44   | 830       | 10    | 65535         | 830  | 17     | 69MB  |
| 45   | 917       | 15    | 65535         | 918  | 17     | 114MB |
| 46   | 1224      | 15    | 65535         | 1223 | 17     | 152MB |
| 47   | —         | —     | —             | —    | —      | —     |

## 4.2. Board layout

Italic characters for CPU jumper settings



|  |  |  |   |
|--|--|--|---|
| JP8— Cyrix 3v CPU : 1-2<br>Normal: 2-3       | JP18 —3X CLK for AMD 3V CPU: 1-2<br>2X CLK for AMD 3V CPU : 2-3<br>Others : OPEN | JP33 — Reserved : 1-2                                      |   |
| JP9— Reserved : OPEN                         | JP19 — 2-3: Cyrix , 1-2: Others  | JP36 —DX4(Green 16MHz) : CLOSE<br>Other(Green 8MHz) : OPEN | JP23 JP26 JP27 JP29 JP32 JP31   |
| JP10— Clear CMOS : 1-2                       | JP20 — 1- 2 : Reserved   | JP37—Reserved: 2-3   | SLE/DX4/: 2-3 CLOSE CLOSE 486SX,<br>Others: 1-2 OPEN OPEN SL-486SX: OPEN OPEN 2-3 |
| JP12— External Power<br>Management Interface | JP21 — On Board CPU Voltage Selection  | JP38, JP39—VESA Local<br>BUS Selection                     | Others: 1-2 2-3 1-2   |
| JP13— Green Device Connector                 | JP28 —Cyrix DX : 1-2<br>Cyrix DX2 : 2-3<br>Others: OPEN                          | JP40—“2-3” Reserved  |   |
| JP14— Color : CLOSE<br>MONO : OPEN           | JP30 —Reserved: 1-2  | JP45—Reserved Switch Connector                             |   |
| JP15—Reserved: OPEN                          | JP50 — Reserved : 2-3  | JP46 —Keylock & Power<br>LED Connector                     | MCLK(MHz) JP34 JP35 JP43 JP44 JP41 JP22   |
| JP16—Reserved: OPEN                          |  | JP47 —Speaker Connector                                    | 25 Close Open 128K Open Close 1-2 1-2   |
|  |  | JP48 —Turbo LED Connector                                  | 33/66/100 Open Close 256K Close Close 2-3 1-2                                     |
|  |  | JP49 —Turbo Switch<br>Connector                            | 40/80 Open Open 512K Close Close 1-2 2-3<br>50 Close Close                        |



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