
AIO8449
SYSTEM SECTION

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RMA FORM

CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

The *AIO8449* is complemented by a 256KB second level Write-Back cache providing workstation level computing performance, and SIMM sockets support up to 64MB of DRAM.

The *AIO8449* motherboard provides the foundation for cost effective, high performance, highly expandable platforms which deliver the latest in CPU and I/O technologies.

1.2 SYSTEM FEATURES

- ☐ Supports INTEL 486SX-S, DX, DX2, DX4, P24T, P24D, S-SERIAL
AMD DX, DX2, DX4, AMD+
CYRIX (TI), SX, DX, DX2, 5x86, UMC U5
- ☐ Supports EDO DRAM
- ☐ Supports L1/L2 Write Back/Write Through Cache Feature
- ☐ Supports 128KB/256KB Cache Size
- ☐ Supports 72pin SIM Modules
- ☐ Supports SMI/SMM/PMU/APM Power Controllers
- ☐ Enhanced PCI IDE on Board (Two Channels)
- ☐ Supports 2S1P, Floppy on Board
- ☐ BIOS has been Hardware Integrated with Enhanced IDE Driver for Best Hard Disk Performance
- ☐ Supports Parallel Port EPP/ECP Mode

1.3 SYSTEM SPECIFICATIONS

Processor : INTEL 486SX, DX, DX2, DX4, P24T, P24D 486CPU
CYRIX (TI)486, SX, DX, DX2, 486CPU, 5x86
AMD DX, DX2, DX4 486CPU, AMD+
UMC U5

CPU Clock : 25/33/40 MHz CPU

Memory : Up to 64MB

Memory Configuration : 1MB, 2MB, 4MB, 8MB, 16MB, 32MB
64MB

SRAM Configuration : 128KB/256KB

BIOS Subsystem : AMI BIOS

I/O Subsystem No. Slot : Intel LPX Expand Slot

Dimension : 22cm x 23cm, 2/3 Baby AT Size

Additional Features

Miscellaneous Connectors : Reset Button, Internal Battery, Turbo SW,
Flash LED(Turbo LED) for Power Green

Board Design : Four-layer Implementation for Low Noise Operation

1.4 SYSTEM PERFORMANCE

SOFTWARE CPU TYPE	LANDMARK V2.0	POWER METER V1.8 MIPS	NORTON V8.0 CPU SPEED
AMD DX- 40MHz	133.78MHz	13.0MIPS	86.4
AMD DX2- 80MHz	267.57MHz	23.3MIPS	158.4
AMD DX4- 100+MHz	332.98MHz	32.3MIPS	215.0
AMD DX4- 120MHz	401.38MHz	39.0MIPS	259.2
CYRIX 5x86- 100MHz	423.61MHz	35.5MIPS	262.7
INTEL DX- 33MHz	110.96MHz	10.8MIPS	71.7
INTEL DX-2 50MHz	165.77MHz	15.8MIPS	105.8
INTEL DX2- 66MHz	221.97MHz	20.9MIPS	143.3
INTEL DX4- 100MHz	361.59MHz	27.6MIPS	197.1
INTEL P24T	478.60MHz	37.4MIPS	262.8

CHAPTER 2

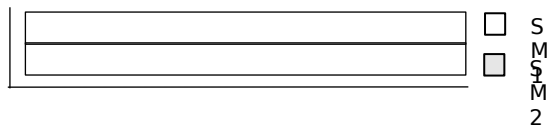
INSTALLATION

Before the system is ready to operate, the hardware must be set up for various functions of the system. To set up the *AIO8449* motherboard is a simple task. The user only has to set a few jumpers, connectors and sockets.

2.1 DRAM INSTALLATION

The *AIO8449* motherboard can support expanded memory from 1MB to 64MB. Either 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, SIM Modules can be used on the *AIO8449* motherboard.

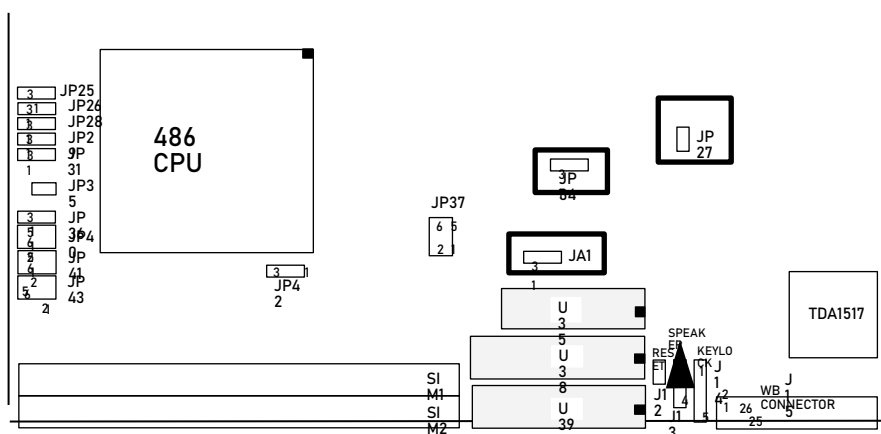
v The board layout below shows the locations of the DRAM memory banks :



v TABLE 1

SM1	SM2	TOTAL MEMORY
4MB	None	4MB
4MB	4MB	8MB
8MB	4MB	12MB
8MB	8MB	16MB
16MB	None	16MB
16MB	4MB	20MB
16MB	16MB	32MB
32MB	32MB	64MB

2.2 SRAM INSTALLATION



CACHE CONFIGURATION SIZE

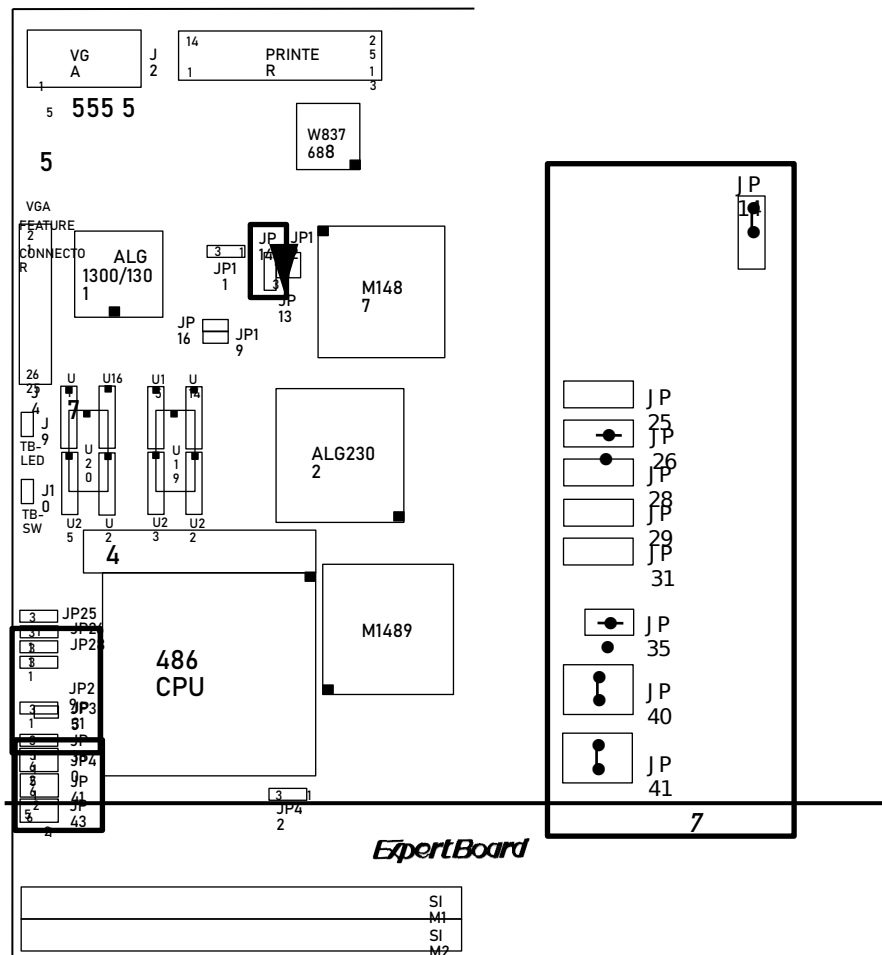
128K		256K		9 256K	
8KX8 U35	32KX32 U39	16KX8 U35	32KX32 U38, U39	32KX8 U35	32KX32 U38, U39
JA1 JP2 JP3		JA1 JP2 JP3		JA1 JP2 JP3	
3 2 1		3 2 1		3 2 1	

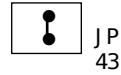
9 Default Setting

2.3 CPU INSTALLATION

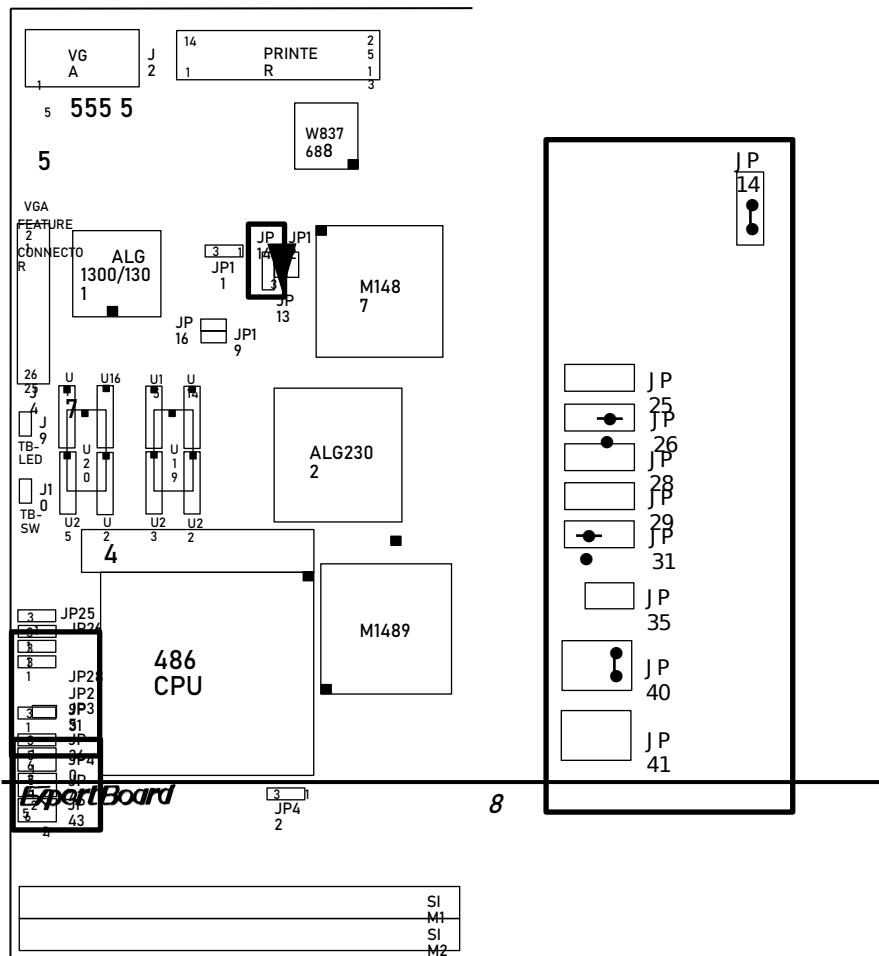
2.3.1 CPU TYPE SELECTION

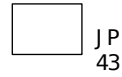
INTEL & UMC 486SX-S



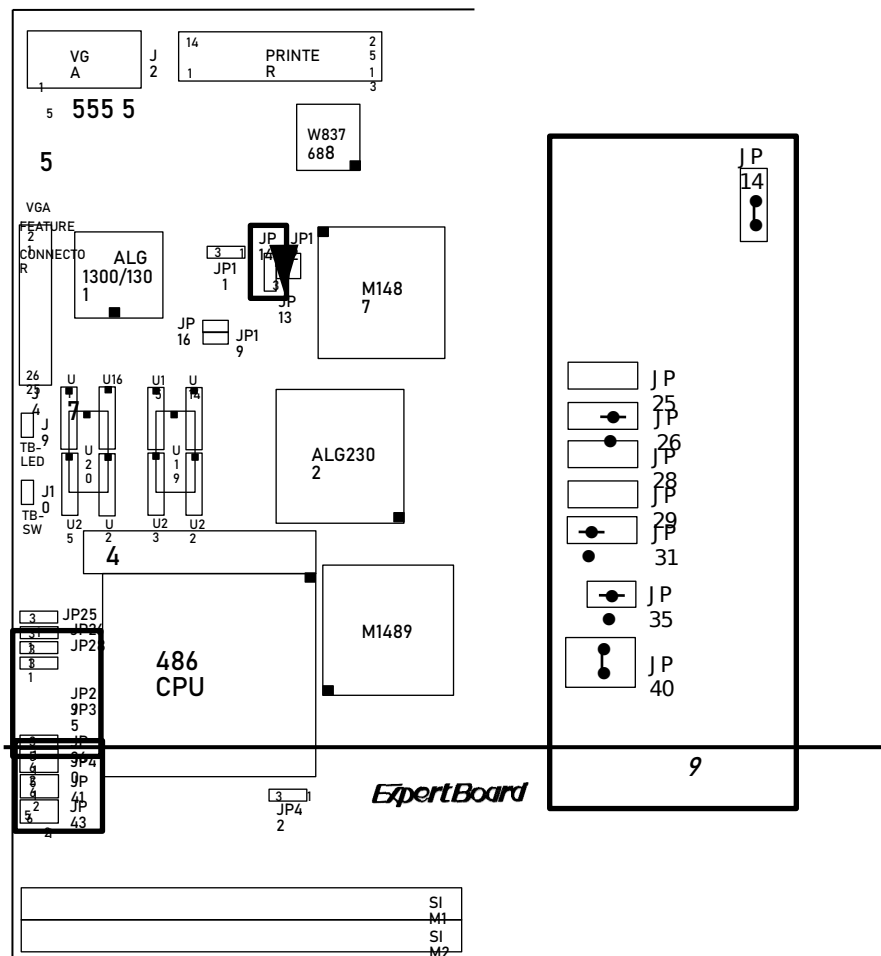


**INTEL 486DX / 486DX2
AMD 486DX / 486DX2 / 486DX4**

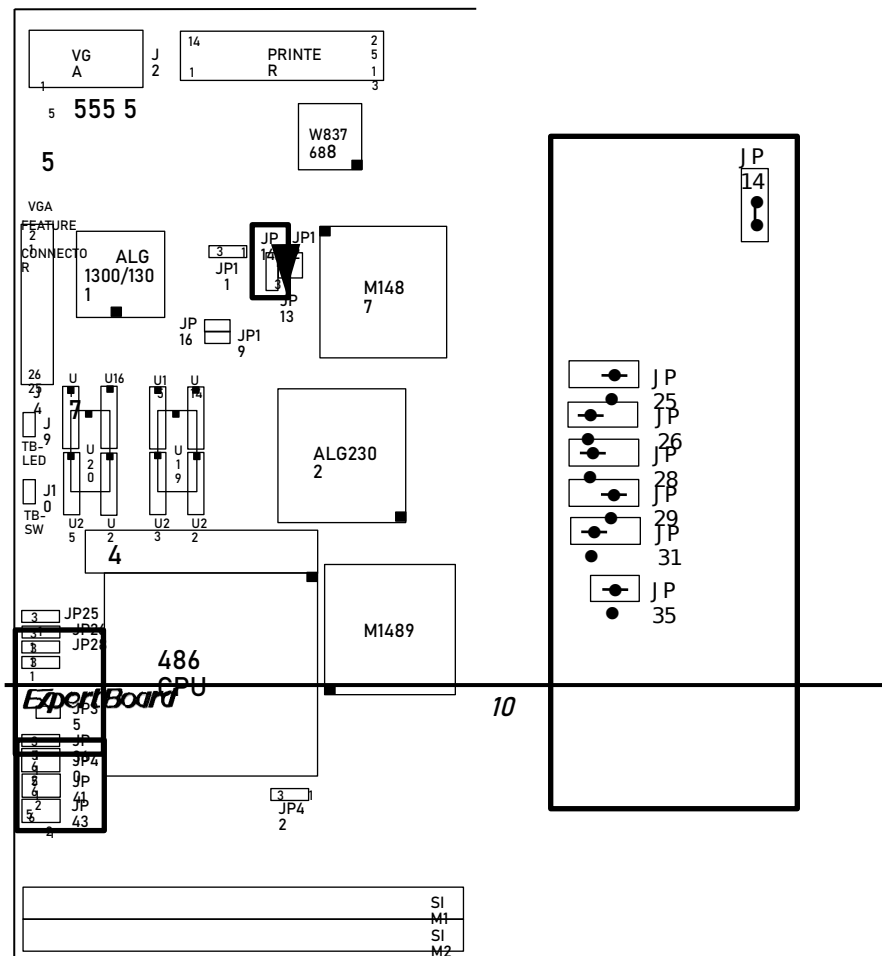




INTEL (S-Serial) 486DX / DX2 / DX4



INTEL P24D & AMD+



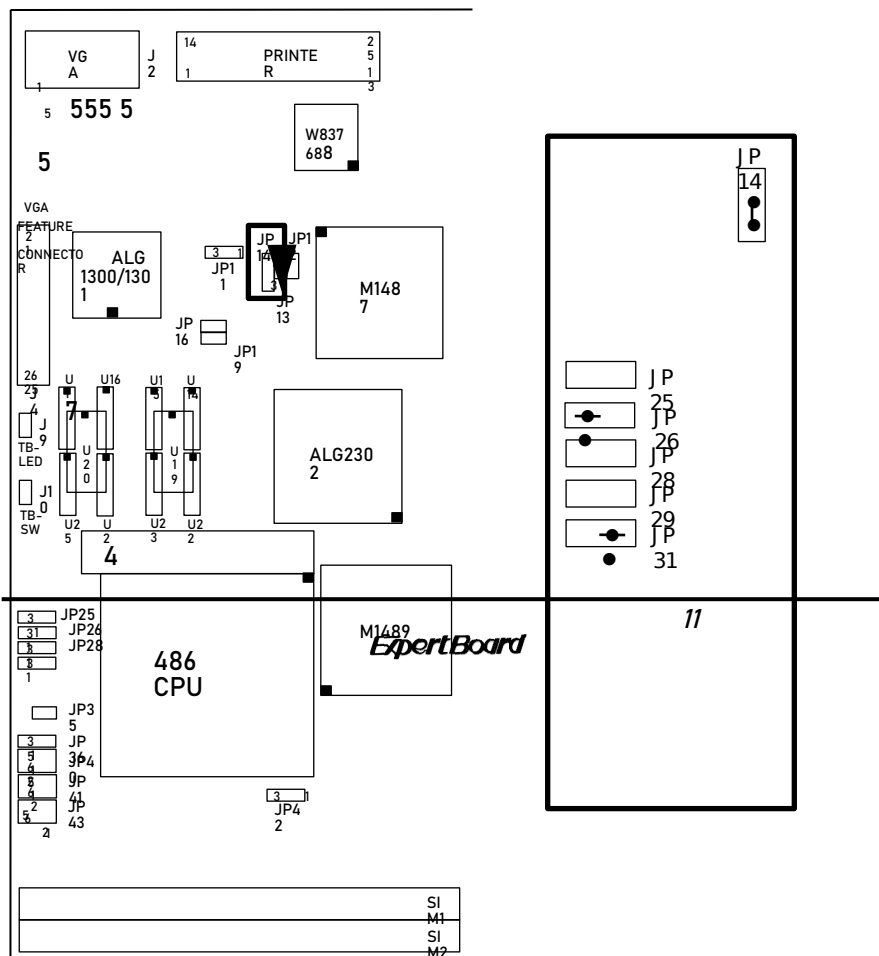
JP2
JP31
1

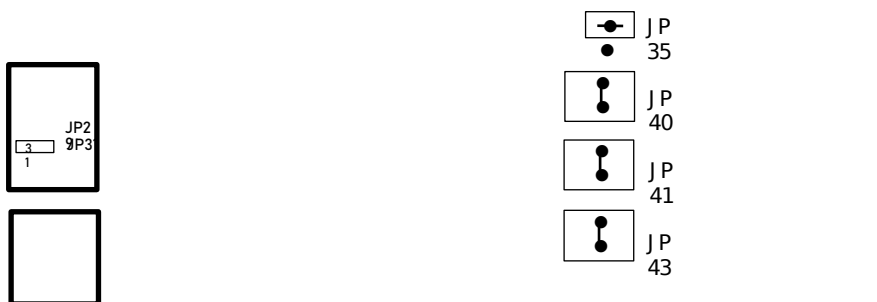
JP
40

JP
41

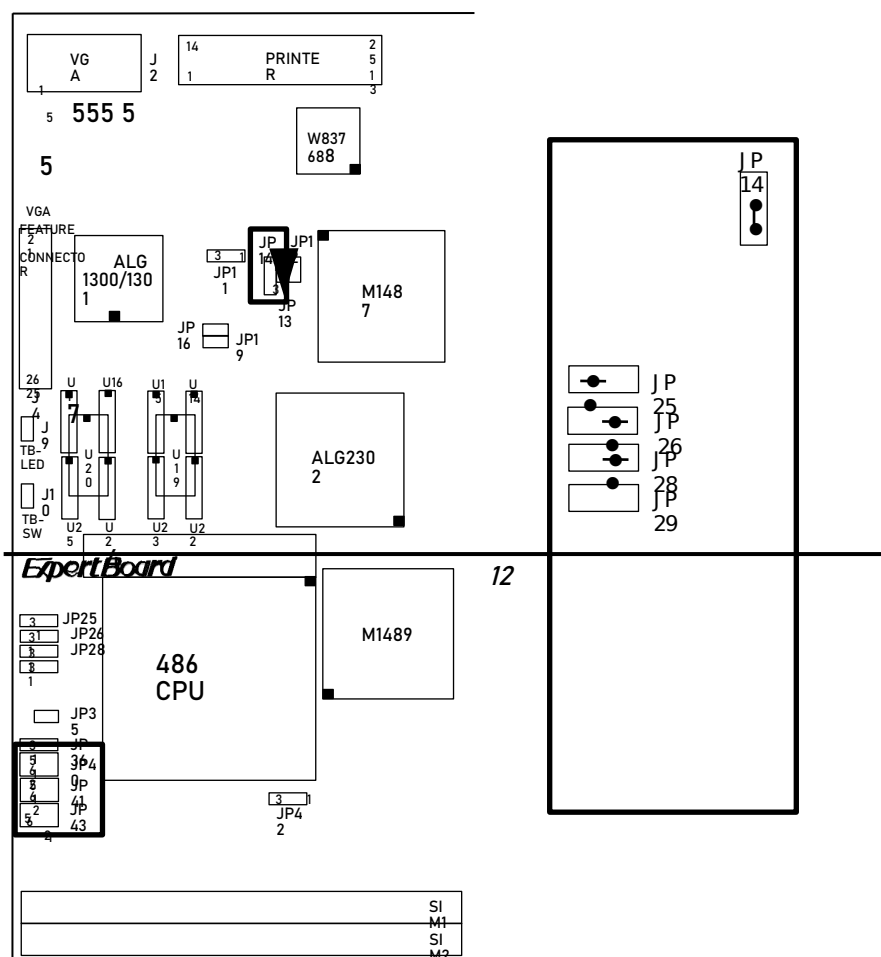
JP
43

INTEL P24T



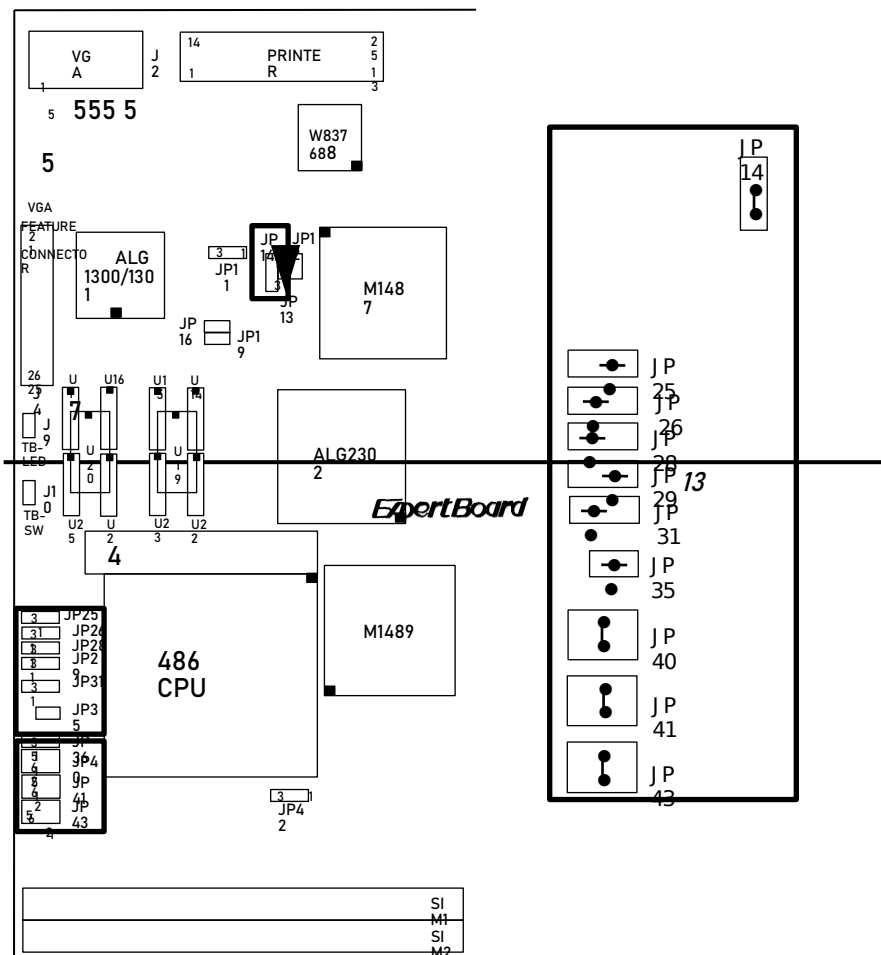


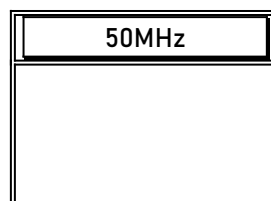
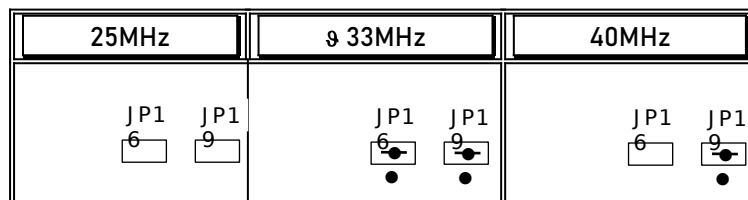
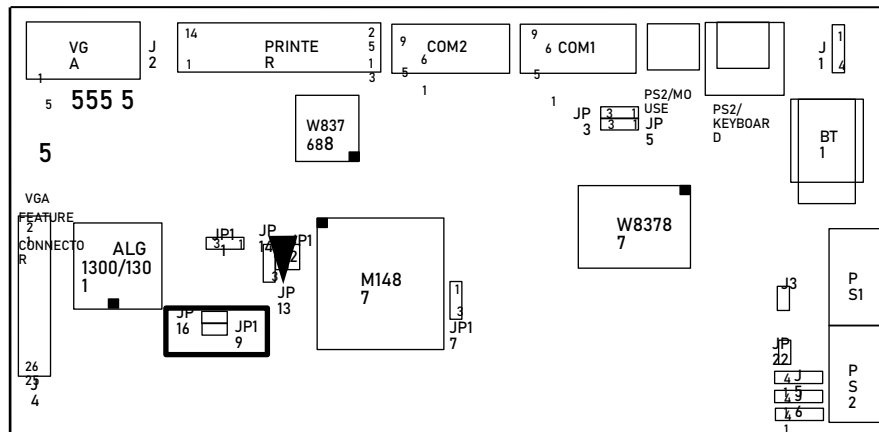
CYRIX (TI) DX/DX2





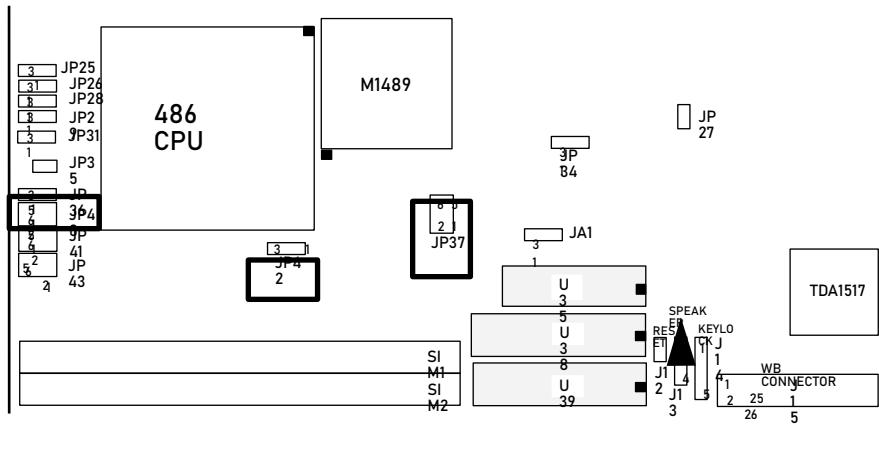
CYRIX 5x86





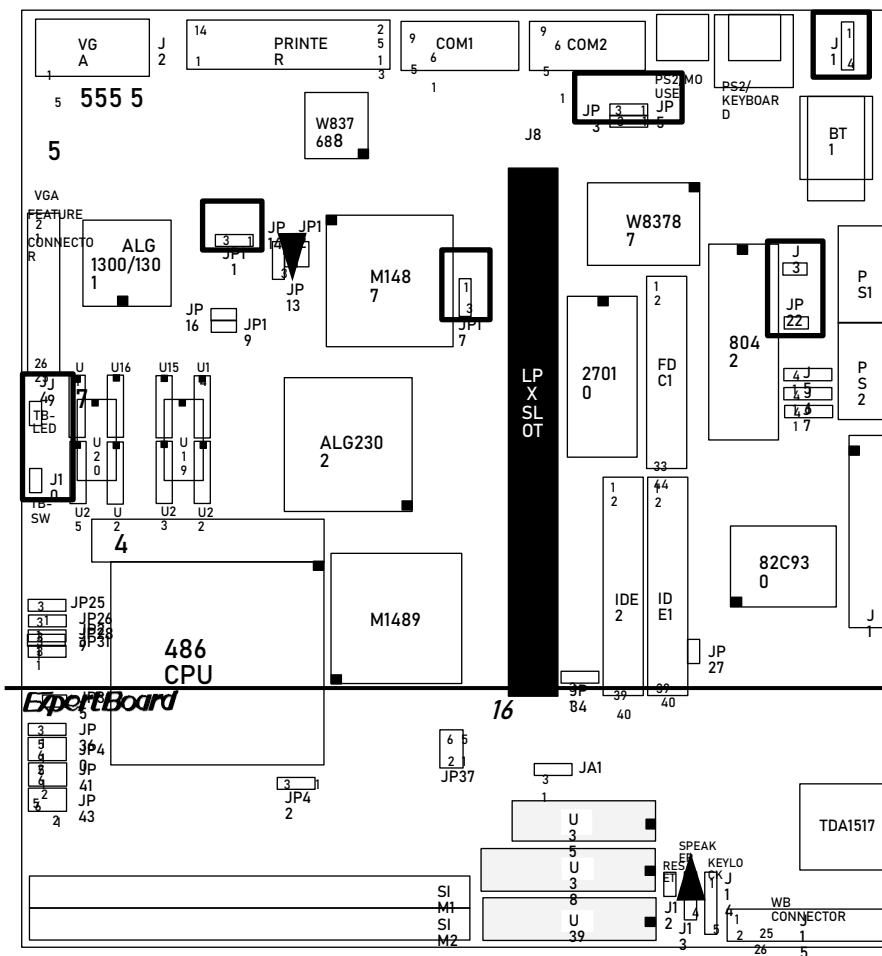
Expert Board

2.3.3 CPU POWER VOLTAGE



CPU POWER VOLTAGE







PCI CLOCK

	§ CPU CLOCK *1	CPU CLOCK *2
J P11		

PARALLEL EPP / ECP

DMA 1	DMA 3	IRQ 5	§ IRQ 7
 	 		

OTHER JUMPER DESCRIPTION

JUMPER	DESCRIPTION	
JP22	§ ☒ COL ● OR	☐ MONO

§ **Default Setting**

CONNECTOR DESCRIPTION

CONNECTOR	PIN OUT	SIGNAL NAME
J1:		1-2 Clear CMOS 2-3 For Internal Battery 1-4 External Battery Connector (1: Ground) (4: External Battery Power In)
J3:	On Board IDE LED	
J12 : RESET	1 2	Ground Reset In
J9 : TURBO LED	1 2	+Anode -Cathode
J10 : TURBO SWITCH	 Normal Speed	 Turbo Speed
J14 : KEY LOCK	1 2 3 4 5	Power LED Not Used Ground Keyboard Inhibitor Ground
J13 : SPEAKER	1 2 3 4	1-4 For External Speaker 2-3 For Internal Buzzer
KB1: KEYBOARD CONNECTO R	1 2 3 4 5	Keyboard Clock Keyboard-Data Space Ground +5V
PS1 & PS2 : POWER CONNECTO R	1 2 3 4 5,6,7,8 9 10,11,12	Power Good +5V DC +12V DC -12V DC Ground -5V DC +5V DC
IDE1, IDE2	On Board IDE Connector	
FDC1	Floppy Connector	
COM 1	RS-232 1	

COM 2	RS-232 2
MS1	PS2/Mouse Connector
PRN1	Printer Connector

J Default Setting

CHAPTER 3

SYSTEM BIOS SETUP

WinBIOS Setup can be accessed via keyboard, mouse, or pen. The mouse click functions are:

- single click to change or select both global and current fields and
- double click to perform an operation in the selected field.

Using the keyboard with WinBIOS Setup

WinBIOS Setup has a built-in keyboard driver that uses simple keystroke combinations:

KEYSTRO KE	FUNCTION
<Tab>	Move to the next window or field.
→, ←, ↑, ↓	Move to the next field to the right, left, above, or below.
<Enter>	Select in the current field.
+	Increments a value.
-	Decrements a value.
<Esc>	Closes the current operation and return to previous level.
<PgUp>	Returns to the previous page.
<PgDn>	Advances to the next page.
<Home>	Returns to the beginning of the text.
<End>	Advances to the end of the text.
<Alt>, <H>	Access a help window.
<Alt><Spacebar>	Exit WinBIOS Setup.
Alphabetic Keys	A to Z are used in the Virtual Keyboard, and are not case sensitive.
Numeric Keys	0 to 9 are used in the Virtual Keyboard and Numeric

Keypad.

The hardware features and options of the *AIO8449* are on-site selectable for maximum flexibility. You will need to configure these options through the built-in Setup Utility prior to using *AIO8449* for the first time. This setup Utility is a multi-screen, menu driven program and is contained within the BIOS EPROM.

The following sections show the procedures that you may need to configure the *AIO8449*:

1. Press while turning on or rebooting the system to invoke Setup Utility program.
2. The main menu will be shown as follows:

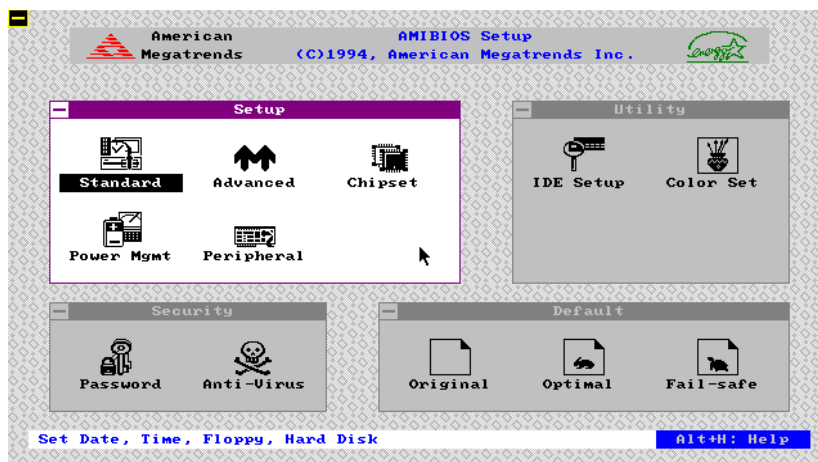


Figure 1

3. The functions are grouped into four categories which are Setup, Utility, Security and Default.
4. By using <TAB> key or mouse cursor to select the function group.

5. Use arrow keys or mouse to select the function icon within the group. Then press <Enter> key to invoke the setup function.
6. Use <Esc> Key to go back to the previous screen.

3.1 SYSTEM SETUP

There are five icons in the Setup Group.

Selecting Standard icon displays the following menu:

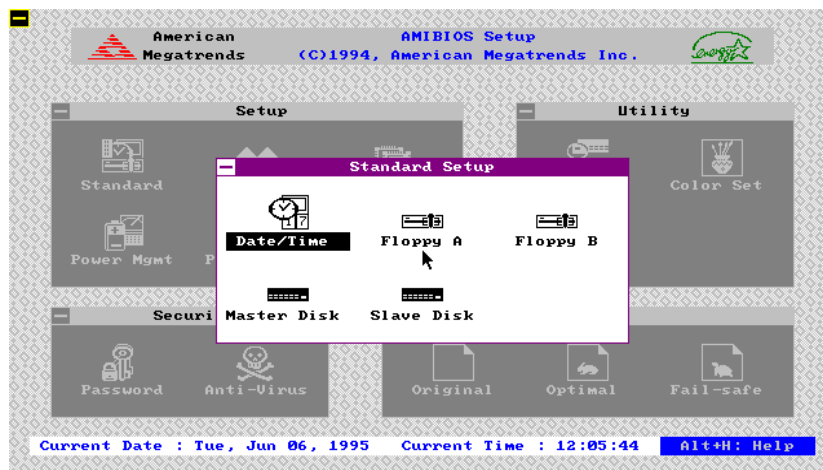


Figure 2

Selecting Date/Time icon displays the following menu:

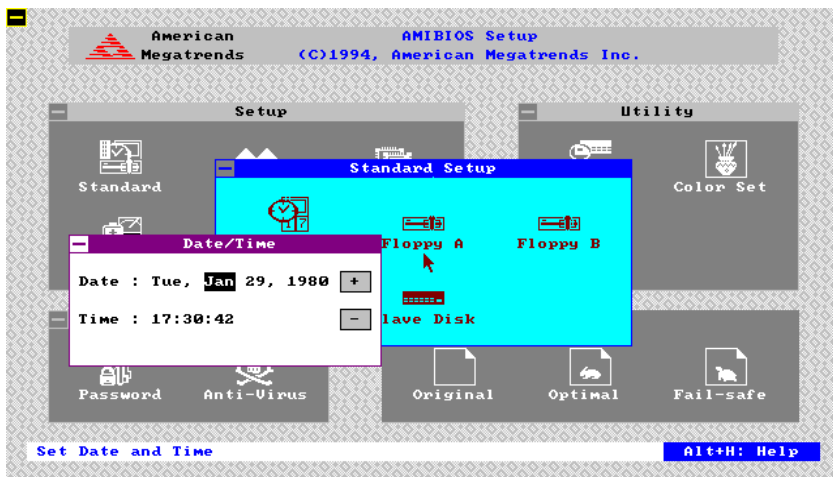


Figure 3

After entering correct date and time, press <Esc> to go back to the previous menu.

Selecting Floppy A/B icon displays the flowing menu:

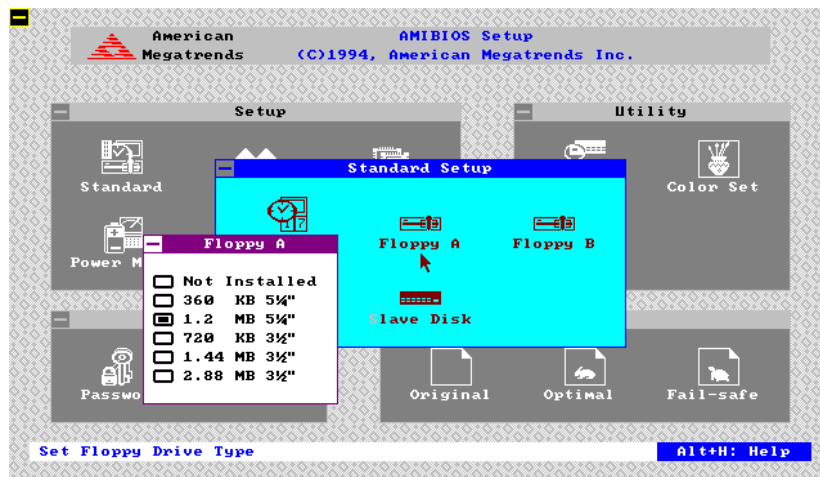


Figure 4

Using arrow keys or mouse to select the correct specification of floppy drive.
Press <Esc> key to go back to the previous menu.

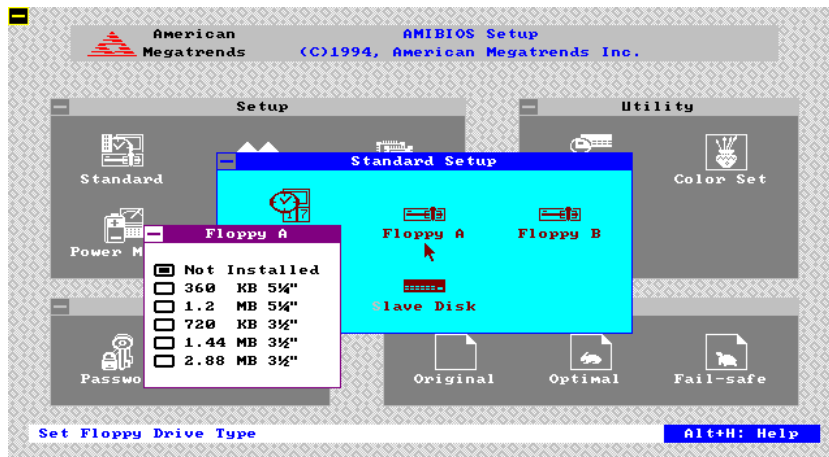


Figure 5

Selecting Master/Slave Disk icon displays the following menu:

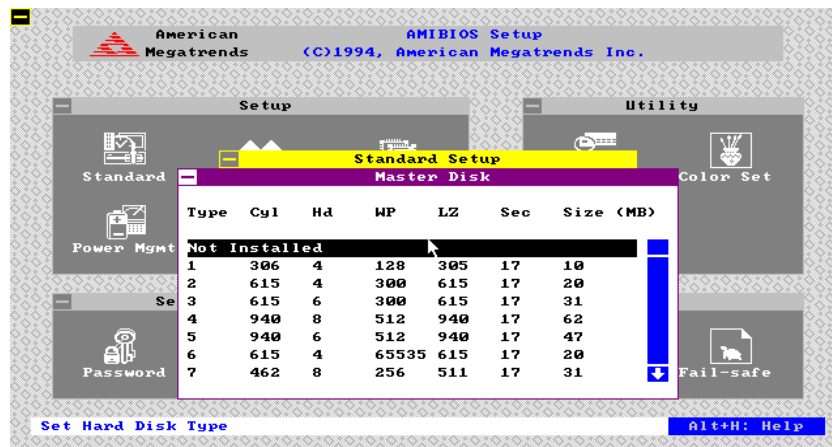


Figure 6

Use arrow keys or mouse to select or enter the Master Hard Disk specifications.
Press <Esc> to go back to the previous menu.

Selecting Slave Disk icon displays the following menu:

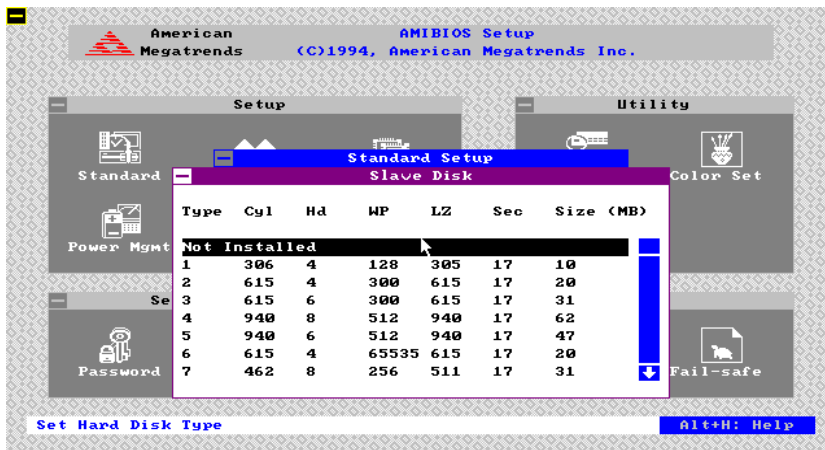


Figure 7

Selecting Advance icon displays the following menu:

Use arrow keys to select the desired entries and make changes. Press <Esc> key to go back to the previous menu.

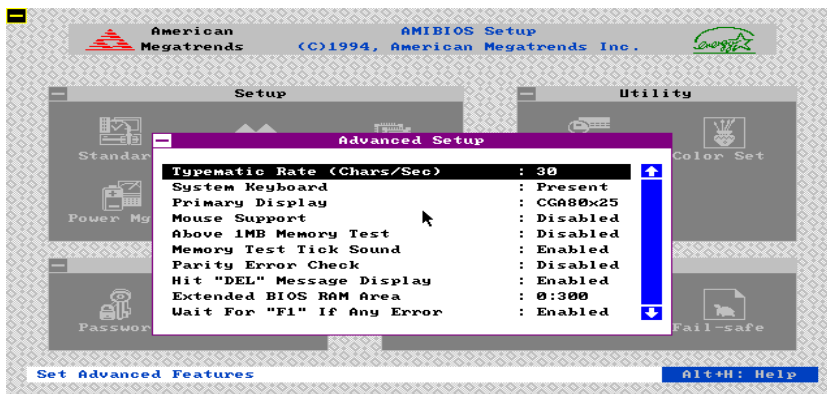


Figure 8

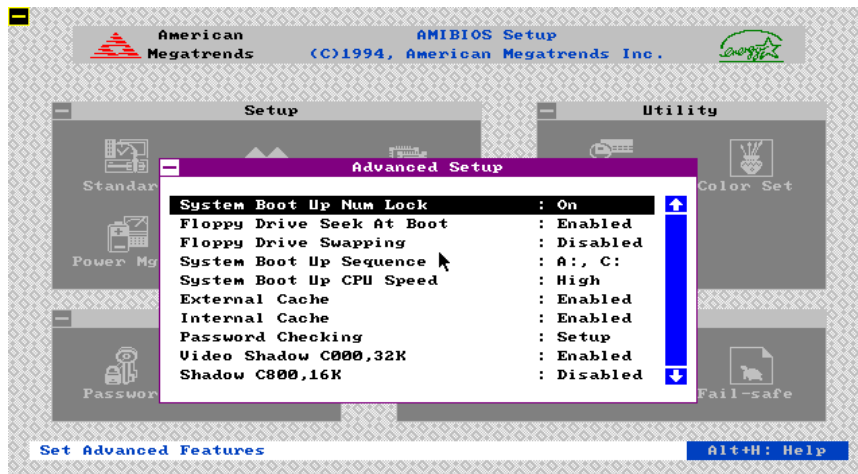


Figure 9

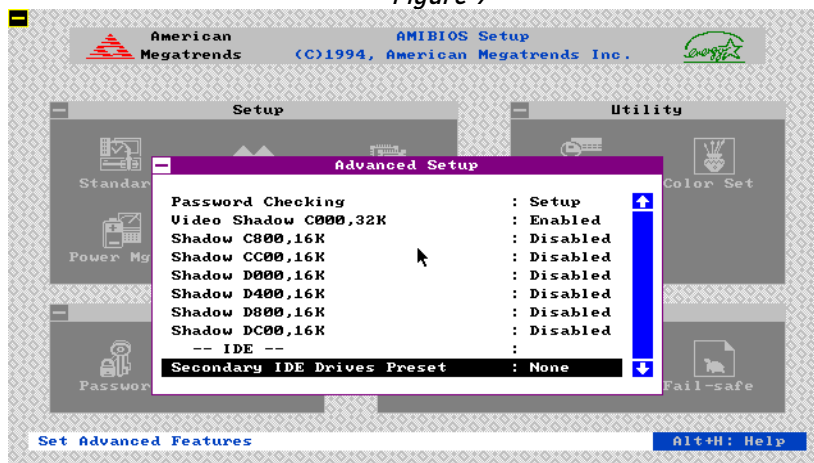


Figure 10

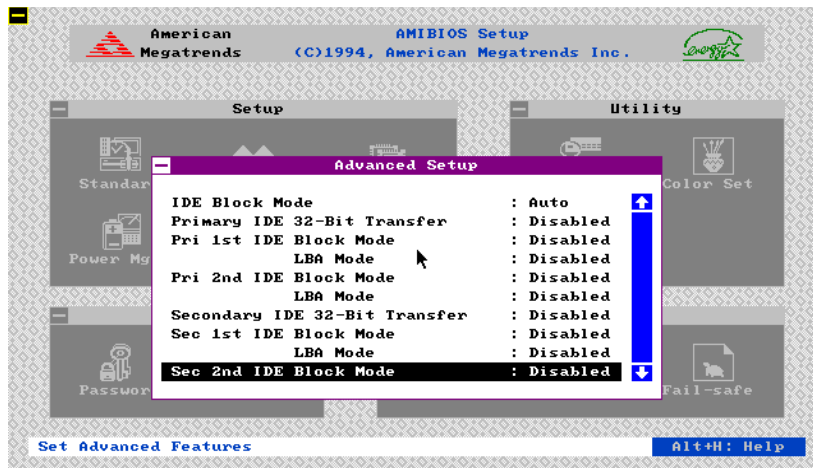


Figure 11

Selecting Chipset icon displays the following menu:

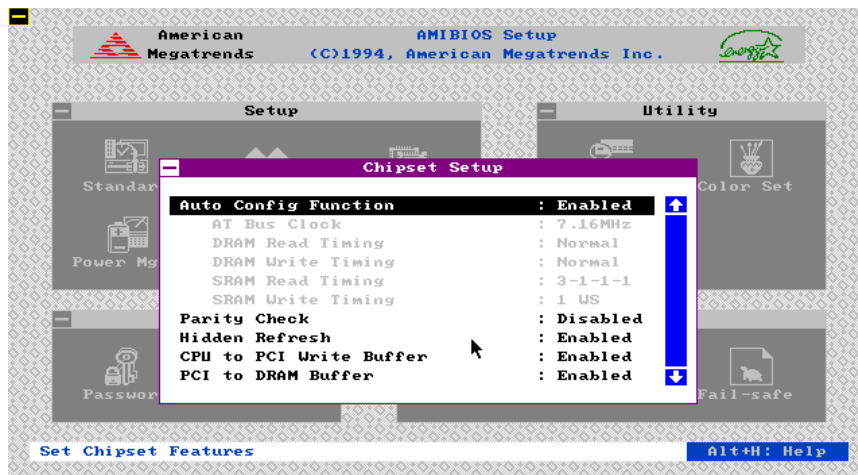


Figure 12

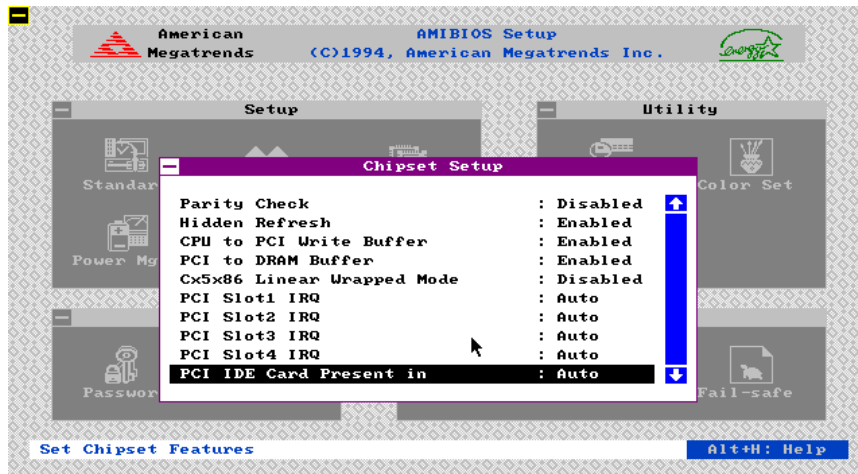


Figure 13

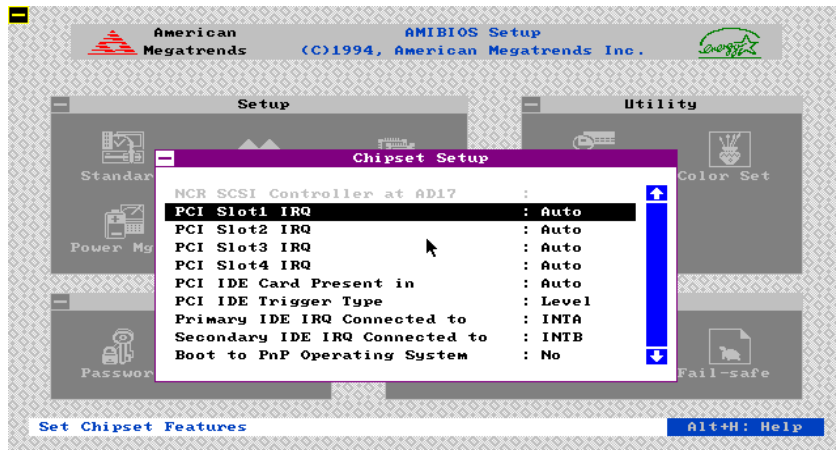


Figure 14

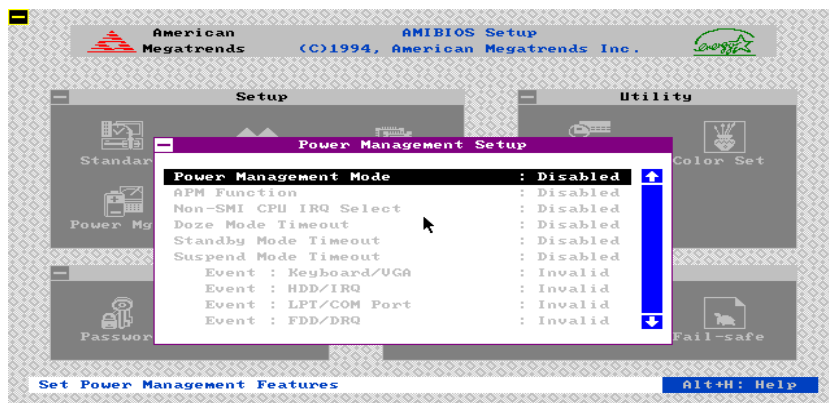


Figure 15

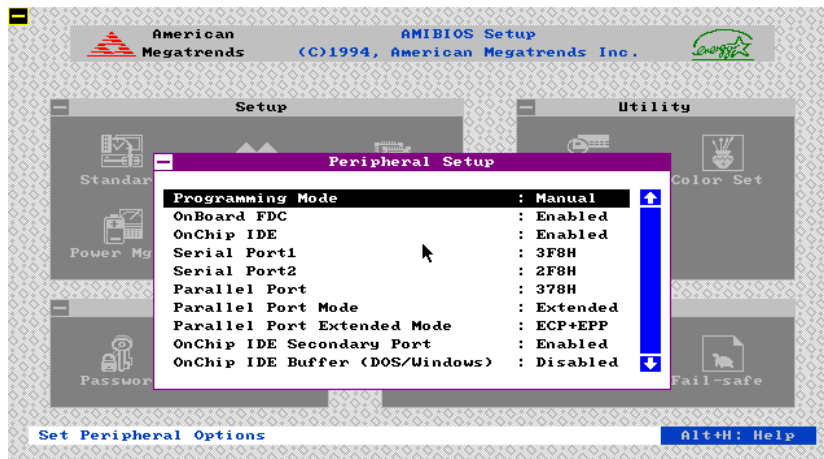


Figure 16

3.2 UTILITY

The following icons appear in this section:

IDE SETUP If drive C: or D: is an IDE drive, the hard disk drive parameters for drive C: or D: are automatically detected and reported to the Hard Disk Drive C: or D: screen in Standard Setup, so you can easily configure drive C: or D:.

Color Set Set the WinBIOS Setup screen colors.

Language Permits you to select a foreign language-specific screen character set.

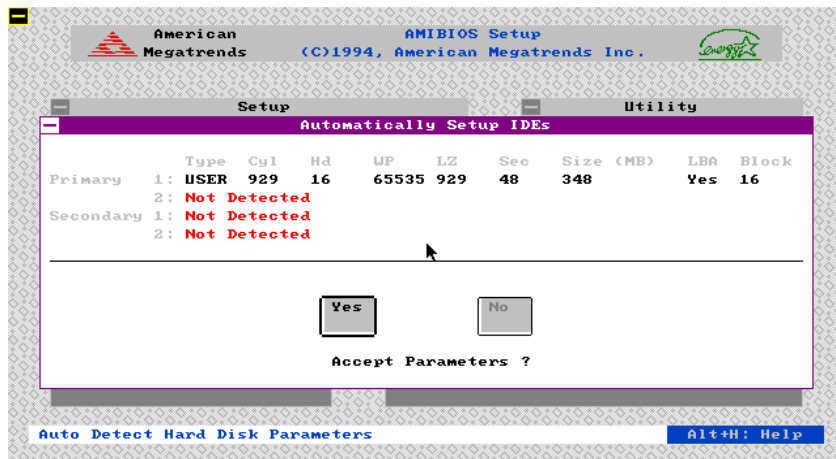


Figure 17

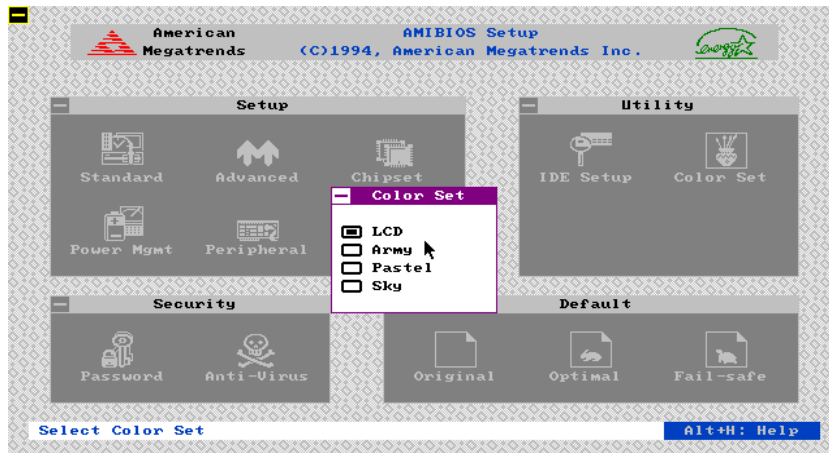


Figure 18

Use arrow key to select the desired entries and make changes, press <Esc> key to go back to the previous menu.

WinBios Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system boots or when WinBIOS Setup is executed. The following screen appears when you select the password icon.

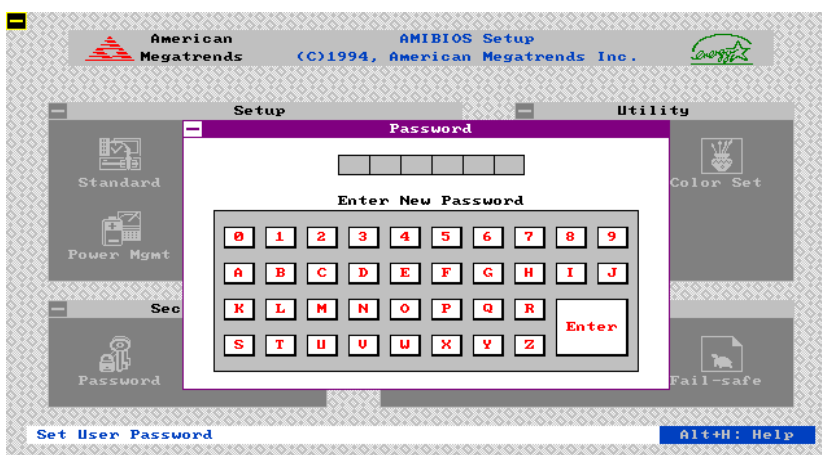


Figure 19

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 is enabled in Advanced Setup by choosing either Always (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when WinBIOS Setup is run). The password is stored in CMOS RAM. The system asks for a password.

Enter a 1-6 character password. The password does not appear on the screen when typed. WinBIOS will ask you to retype the password. Make sure you write it down. If you forget it, you must drain CMOS RAM and reconfigure the system. WinBIOS will then display the following:

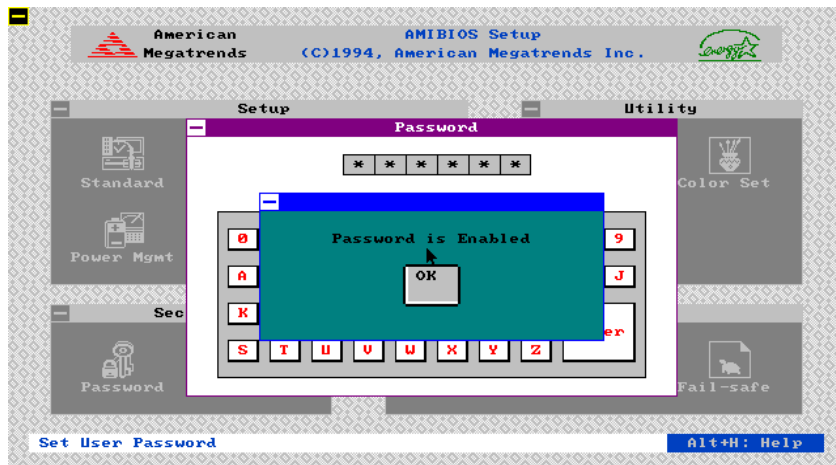


Figure 20

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 new password is entered, retype the new password as prompted and press <Enter>.

If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press <Esc> to return to the WinBIOS Setup Main Menu. The password is stored in CMOS RAM after WinBIOS Setup completes. The next time the system boots, you are prompted for the password if the password function is present and is enabled.

Remember the Password

Keep a record of the new password when the password is changed. If you forget the password and your computer has an American Megatrends motherboard, remove the computer cover, set switch 1-2 (the DIAG switch) to ON, power on the computer. WinBIOS erases the password.

When this icon is selected from the Security section of the WinBIOS Setup main menu, WinBIOS issues 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:

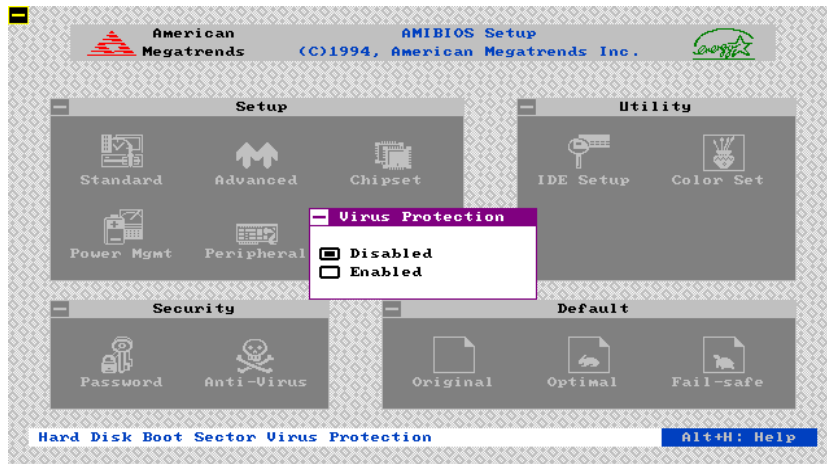


Figure 21

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

3.3 DEFAULT

The icons in this section permit you to select a group of settings for all WinBIOS Setup options. Not only can you use these icons to quickly set system configuration parameters, you can choose a group of settings that have a better chance of working when the system is having configuration-related problems.

Original

Choose the Original icon to return to the system configuration values present in WinBIOS Setup when you first began this WinBIOS Setup session.

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.

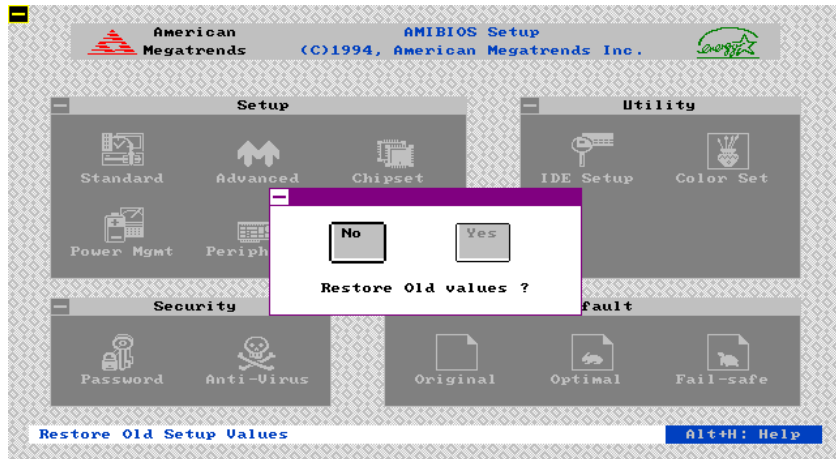


Figure 22

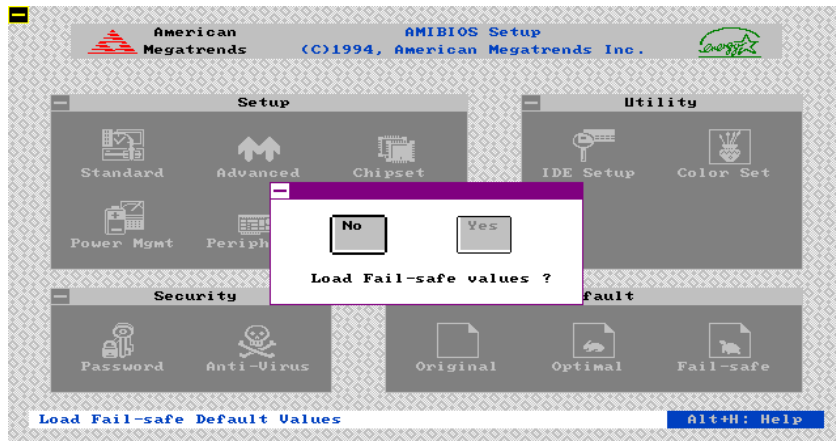


Figure 23

WINBIOS BEEP CODES

BEEPS	ERROR MESSAGE	DESCRIPTION
1	Refresh Failure	The memory refresh circuitry is faulty.
2	Parity error	Parity error in the base memory (the first 64 KB block) of memory.
3	Base 64 KB Memory Failure	Memory failure in first 64 KB.
4	Timer Not Operational	A memory failure in the first 64 KB of memory, or Timer is not functioning.
5	Processor error	The CPU generated an error.
6	8042-Gate A20 Failure	Cannot switch to protected mode.
7	Processor exception Interrupt Error	The CPU on the CPU Card generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in WinBIOS.
10	CMOS Shutdown Register Read/Write Error	The shutdown register for CMOS RAM has failed.
11	Cache memory bad - do not enable cache	The cache memory test failed. Cache memory is disabled. Do not press <Ctrl> <Alt> <+> to enable cache memory.

What to Do If the Computer Beeps

Here is what you need to do if your computer has a WinBIOS and it starts beeping:

IF THE SYSTEM BEEPS...	THEM...
1, 2, or 3 times...	reseat the memory SIMMs or DIPs. If the system still beeps, replace the memory.
6 times...	reseat the keyboard controller chip. If it still beeps, replace the keyboard controller. If it still beeps, try a different keyboard, or replace the keyboard fuse, if the keyboard has one.
8 times...	there is a memory error on the video adapter. Replace the video adapter, or the RAM on the video adapter.
9 times...	the BIOS ROM chip is bad. The system probably needs a new BIOS ROM chip.
11 times...	reseat the cache memory on the motherboard. If it still beeps, replace the cache memory.
4, 5, 7, or 10 times...	the motherboard must be replaced.

APPENDIX

AUTO CONFIG FUNCTION: (On Figure 12)

This option when set “Enabled” will automatically set the AT-bus clock, DRAM Read/Write Timing and SRAM Read/Write Timing according to the CPU configuration default table.

CPU TO PCI WRITE BUFFER: (On Figure 12)

This option when set as “Enabled” will buffers memory write cycle to PCI bus for PCI performance.

CX5x86 LINEAR WRAPPED MODE: (On Figure 14)

This option when set “Enabled” will support the Linear Burst Mode of Cyrix Pentium-class 5x86 Processor. This option is intended when Cyrix 5x86 CPU is installed. Default set as “Disabled”.

IDE BLOCK MODE: (On Figure 11)

The setting are “Auto” or “Manual”. When set to “Auto”, the WINBIOS automatically detects the number of sectors that can be transferred to and from the IDE hard disk at a time. Please refer to the specification of your hard disk if you set the option as “Manual”. Incorrect setting of the parameter may corrupt the hard disk data or crash or crash the hard disk. Default setting set as “Auto”.

LBA MODE: (On Figure 11)

This option (Logical Block Address) support the hard disk that exceed the standard IDE 520MB capacity limit when default set as "Enabled".

PCI IDE TRIGGER TYPE: (On Figure 14)

This option is intended only for the type of PCI IDE card installed. Default set as "Level". Please refer to the type of PCI IDE card specification if you set the other option.

PCI SLOTS 1/2/3/4 IRQ x: (On Figure 14)

This option when set as "Auto" will automatically assign a IRQ number to the PCI card installed on the specified slot. This option default set as "Auto". If you encounter any IRQ conflicts of the PCI and ISA add-on cards, you can manually set the IRQ x to avoid the same IRQ conflicts of both add-on cards.

Primary IDE 32-Bit TRANSFER: (On Figure 11)

The setting are "Disable" or "Enabled". When set to "Enabled" the WINBIOS will initialize the hard disk firmware for a 32-bit I/O data access to and from the IDE hard disk at a time. This option refer to the type of hard disk with the 32 bit I/O data transfer support. Only new release of the high performance PIO mode 4 type of hard disk will incorporate the 32-bit I/O data transfer parameter.

Please refer to the specification of your hard disk if you set the option as "Enabled". Incorrect setting of the parameter or installing with the IDE software I/O 32-bit driver together may corrupt the hard disk data or crashes the hard disk. Note that the on-board IDE controller will also support the IDE software drive for 32-bit I/O data transfer for hard disk that will not the support the 32-bit I/O feature.

PROGRAMMING MODE: (On Figure 16)

The settings are "Auto" or "Manual". When set to "Auto", the WINBIOS automatically detects all adapter cards installed in the system and configures the on-board serial ports, parallel ports, Floppy controller and IDE controller automatically. Default setting is set as "Enabled".

RMA FORM

When the motherboard can not work well, please fill up this form to describe related situations. If the space is not enough to use, you can attach separate paper.

MODEL:

MODEL NO:

HARDWARE

CPU: Brand _____, Model _____,
Speed _____ MHz

CO-PROCESSOR: Brand _____, Model _____,
Speed _____ MHz

SIMM: Brand _____, Speed _____ ns, Q'ty _____
pcs, Total _____ MB

CACHE: Brand _____, Speed _____ ns,
Total _____ K

TAG RAM: Brand _____, Speed _____
ns

BIOS DATE CODE: _____

SYSTEM SPEED RUNNING _____ MHz

VIDEO CARD: Chip _____, RAM _____,
VGA Mode _____
Bus _____ (ISA, VESA or PCI)

OTHER ADD-ON CARDS:

SOFTWARE

OPERATING SYSTEM _____
VERSION _____
SOFTWARE _____ PROGRAM _____

BIOS SETUP: DRAM Wait State _____
CACHE Wait State _____
If you change BIOS SETUP, please describe the changes:

<A> ERROR

☐ HANG UP ☐ NO SCREEN ☐
FLOPPY R/W ERROR
☐ HARD DISK R/W ERROR ☐
PARITY MEMORY ERROR
☐ OTHER

** ERROR MESSAGES ON YOUR SCREEN (PLEASE SHOW US THE WHOLE SENTENCE)**

<C> PROBLEM DESCRIPTION