

M486-UPI

MOTHERBOARD

USER'S MANUAL

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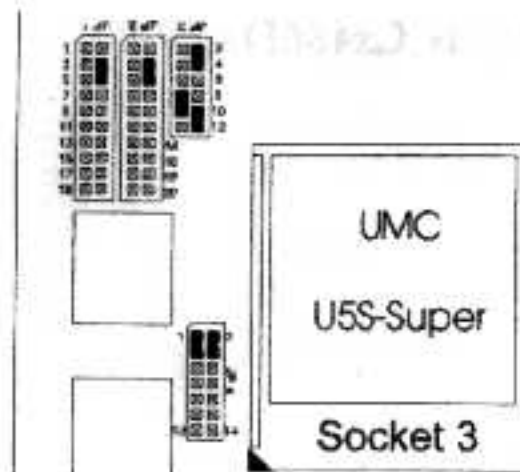
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UMC U5S - Super



Factory Adjusted Jumper Functions

The following jumpers located on the Motherboard are set at the factory level and are not available to users. These jumpers are as follows:

External/Internal Keyboard Controller Selection

Keyboard Controller	JP6	JP7	JP8	JP9	JP16	JP17	JP31	JP32	JP33
External	2-3	2-3	2-3	2-3	close	2-3	close	1-2	1-2
Internal	1-2	1-2	1-2	1-2	open	1-2	open	2-3	2-3

Onboard 3.3V Regulator Selection

Regulator	JP5
MIC29302 (5 pin)	close
MIC29303 (5 pin)	open
LT1085 (3 pin)	not used

Onboard EPROM Programming Selection

Programming	JP10
12 Volt	2-3
5 Volt	1-2
No programming	open

Reserved PCB Connections

Jumper	Default
JP15	1-2

Connectors

CN8 Keyboard Lock

1. +5V
2. N.C.
3. Ground
4. Keyboard Lock
5. Ground

JP18 Reset Switch

1. Reset Signal
2. Ground

CN12 Speaker Connector

1. Speaker Data
2. N.C.
3. Ground
4. +5V

JP19 Turbo Switch

1. Turbo Signal
2. Ground

CN10 Turbo LED

1. Turbo Data
2. Ground

CN26 Standby Switch

1. +5V
2. Standby Signal

CN11 Hard Drive LED

1. +5V
2. HDD Signal

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Chapter 1 Motherboard Configuration

This part of the manual is specifically written to help the user configure the Motherboard hardware. The user may optimize the system performance by changing the default configuration preset by the factory.

Features of the Motherboard

- Supports Intel™ 486SX/DX/DX2, 486SLE, Pentium™ OverDrive™ Processor, Intel DX4™; P24D (Dark Green support)
- Supports Cyrix™ 486SX/SX2, 486DX/DX2, 486DX2V, M9(M1sc)
- Supports AMD™ 486DX/DX2/DX4, Enhanced DX2/DX4 series
- Supports UMC™ 486 U5S-Super
- Supports SGS-Thomson 486DX2
- Supports CPU speed running at 25/33/40/50/66/80/100Mhz
- Supports 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, and 64MB 72 PIN DRAM SIMMs
- Supports 128/256/512 KB and 1MB write-through / write-back secondary Cache.
- Supports System Memory Management (SMM) and full SMI Interface support for Intel SL-Enhanced CPU (S-series)
- Four 16-bit ISA BUS expansion slots (one ISA shares with a PCI slot)
- Four 32-bit PCI BUS expansion slots (one PCI shares with a ISA slot)
- On board, two channel, PCI Enhanced IDE. Supports both PIO mode 3 and 4.
- AWARD™ system BIOS, System and Video BIOS Shadowing, Video BIOS Cacheable. Support Plug and Play on PCI and ISA cards.

Memory Expansion

There are a total of 4 SIMM slots on the Motherboard, they are labeled as SIMM1, SIMM2, SIMM3, and SIMM4. Each slot can accommodate the 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, or 64MB 72 PIN SIMM module.

Configuration Rules

The motherboard supports many combinations of DRAM SIMM modules for its main memory, however, the following rules must be observed:

1. Slot SIMM1 must be occupied before SIMM2 can be used. Slot SIMM3 must be occupied before SIMM4 can be used.
2. Slots SIMM1 and SIMM2 must be greater than that of SIMM3 and SIMM4.
3. The total size of the DRAM in SIMM1 and SIMM2 must be greater than that of SIMM3 and SIMM4.
4. SIMMs must be 80ns, or faster, page mode DRAM of 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, and 64MB size.
5. The size of the main memory must be between 2MB and 256MB.

The table below illustrates some of the possible DRAM configurations:

DRAM Configuration Table

SIMM1	SIMM2	SIMM3	SIMM4	Total
1MB	1MB	X	X	2MB
1MB	1MB	1MB	1MB	4MB
4MB	X	X	X	4MB
4MB	X	1MB	1MB	6MB
4MB	4MB	X	X	8MB
8MB	X	X	X	8MB
4MB	4MB	1MB	1MB	10MB
8MB	X	1MB	1MB	10MB
4MB	4MB	4MB	X	12MB
8MB	X	4MB	X	12MB
4MB	4MB	4MB	4MB	16MB
8MB	X	4M	4MB	16MB
8MB	8MB	X	X	16MB
16MB	X	X	X	16MB
8MB	8MB	1MB	1MB	18MB
16MB	X	1MB	1MB	18MB
8MB	8MB	4MB	X	20MB
16MB	X	4MB	X	20MB
8MB	8MB	4MB	4MB	24MB
8MB	8MB	8MB	X	24MB
16MB	X	4MB	4MB	24MB
16MB	X	8MB	X	24MB
8MB	8MB	8MB	8MB	32MB

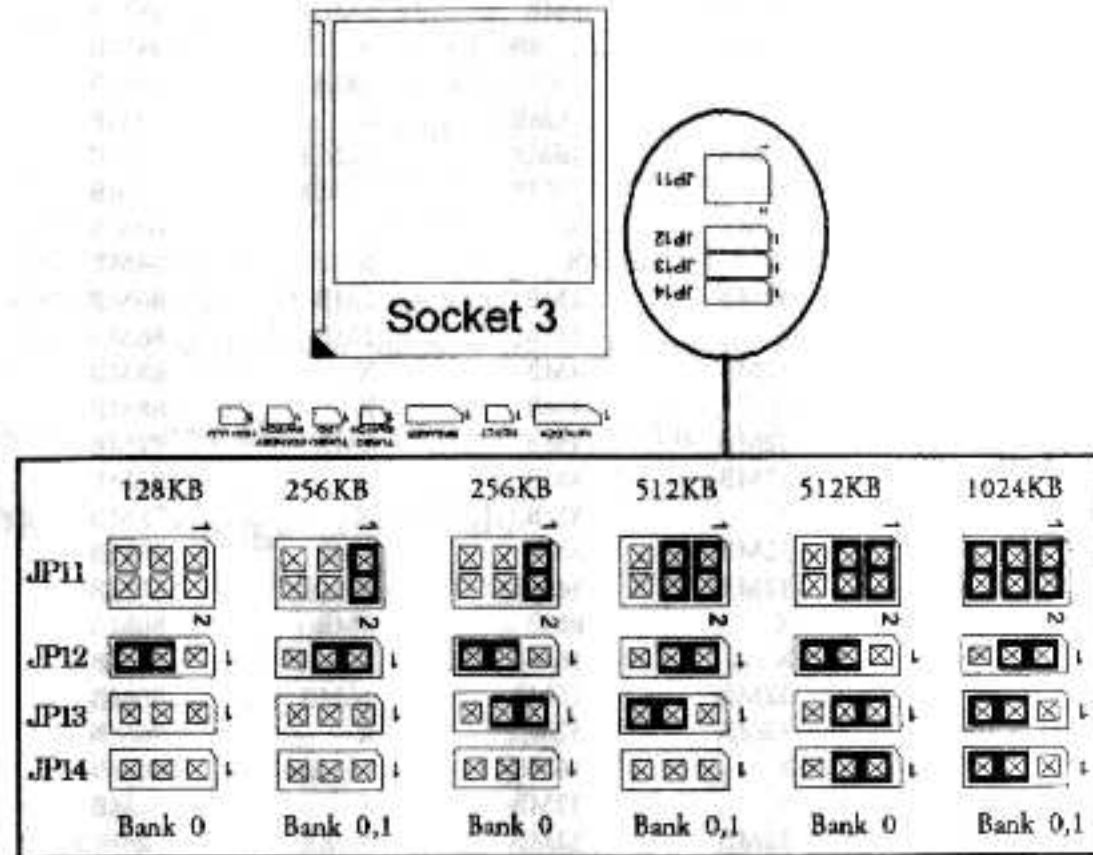
16MB	X	8MB	8MB	32MB
16MB	16MB	X	X	32MB
32MB	X	X	X	32MB
16MB	16MB	1MB	1MB	34MB
32MB	X	1MB	1MB	34MB
16MB	16MB	4MB	X	36MB
32MB	X	4MB	X	36MB
16MB	16MB	4MB	4MB	40MB
16MB	16MB	8MB	X	40MB
32MB	X	4M	4M	40MB
32MB	X	8MB	X	40MB
16MB	16MB	8MB	8MB	48MB
16MB	16MB	16MB	X	48MB
32MB	X	8MB	8MB	48MB
32MB	X	16MB	X	48MB
16MB	16MB	16MB	16MB	64MB
32MB	X	16MB	16MB	64MB
32MB	32MB	X	X	64MB
64MB	X	X	X	64MB
32MB	32MB	1MB	1MB	66MB
64MB	X	1MB	1MB	66MB
32MB	32MB	4MB	X	68MB
64MB	X	4MB	X	68MB
32MB	32MB	4MB	4MB	72MB
32MB	32MB	8MB	X	72MB
64MB	X	8MB	X	72MB
32MB	32MB	8MB	8MB	80MB
32MB	32MB	16MB	X	80MB
64MB	X	8MB	8MB	80MB
64MB	X	16MB	X	80MB
32MB	32MB	16MB	16MB	96MB
32MB	32MB	32MB	X	96MB
64MB	X	16MB	16MB	96MB
64MB	X	32MB	X	96MB
32MB	32MB	32MB	32MB	128MB
64MB	X	32MB	32MB	128MB
64MB	64MB	X	X	128MB
64MB	64MB	1MB	1MB	130MB
64MB	64MB	4MB	X	132MB
64MB	64MB	4MB	4MB	136MB
64MB	64MB	8MB	X	136MB
64MB	64MB	8MB	8MB	144MB
64MB	64MB	16MB	X	144MB
64MB	64MB	16MB	16MB	160MB
64MB	64MB	32MB	X	160MB
64MB	64MB	32MB	32MB	192MB
64MB	64MB	64MB	X	192MB
64MB	64MB	64MB	64MB	256MB

Remark: X - Not installed

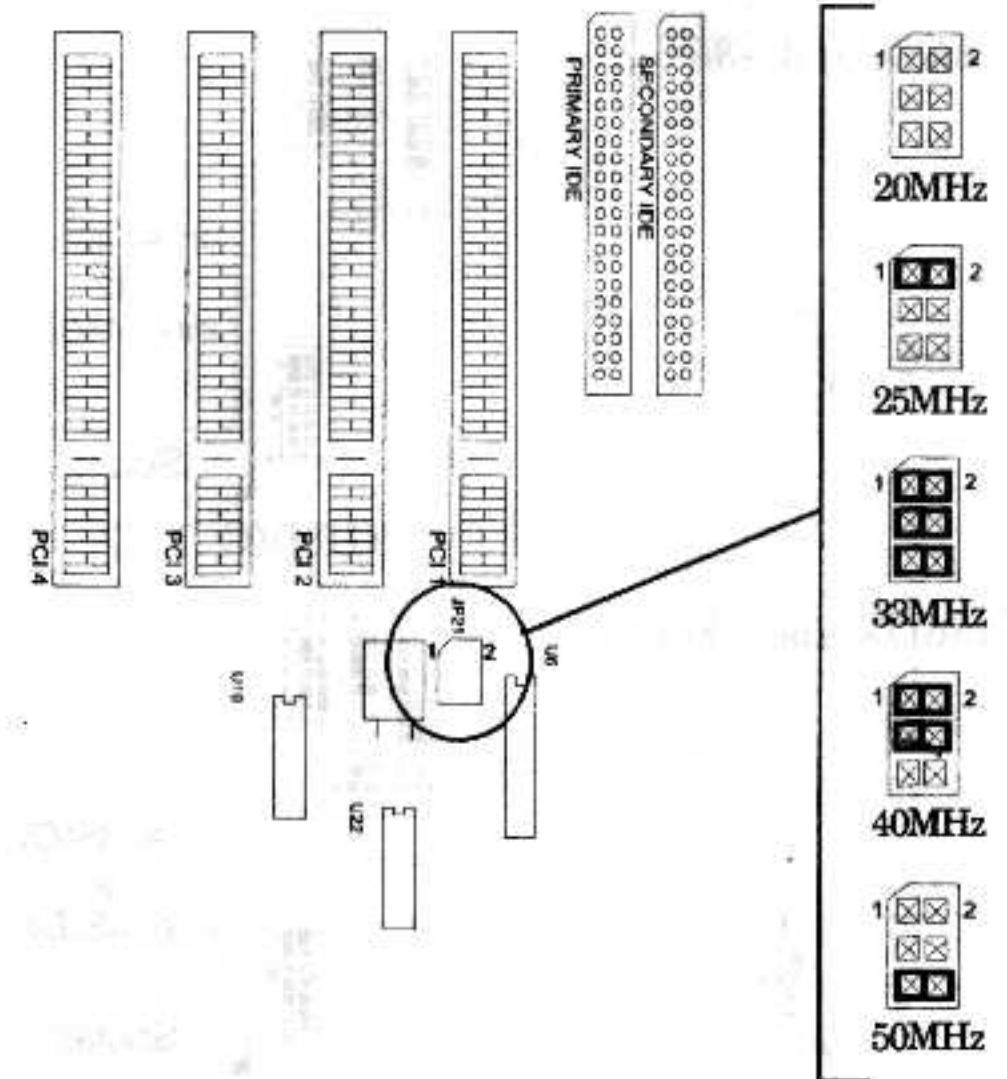
Motherboard Configuration

Under some circumstances you may wish to change the default configuration of the Motherboard. These changes are made through adapting jumper settings on the Motherboard. The following text will describe the function of every jumper and connector, and their corresponding location on the Motherboard can be found at the end of this chapter.

External Cache Selection Jumpers



System Clock Speed Selection



Legend

CPU Selection Jumper

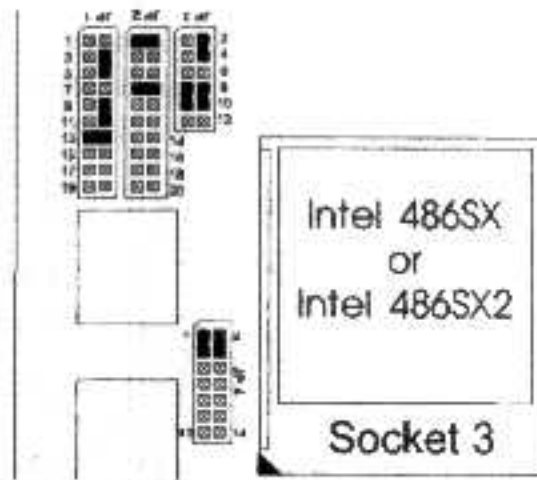
- 1 2 (Not Installed) Jumper Not Installed
- 1 2 (Installed) Jumper Installed

System Clock Speed and Cache Jumper

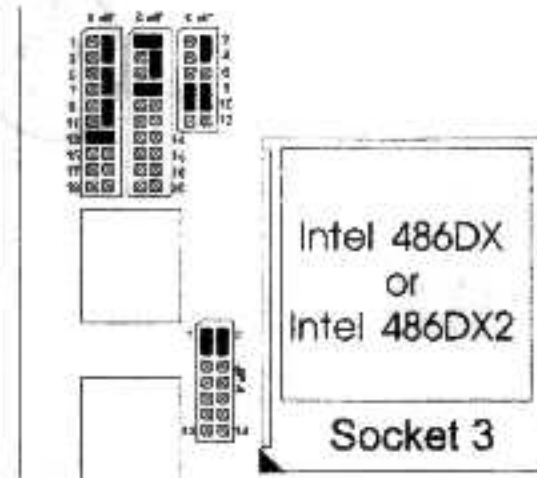
- 1 2 (Not Installed) Jumper Not Installed
- 1 2 (Installed) Jumper Installed

CPU Selection Jumpers

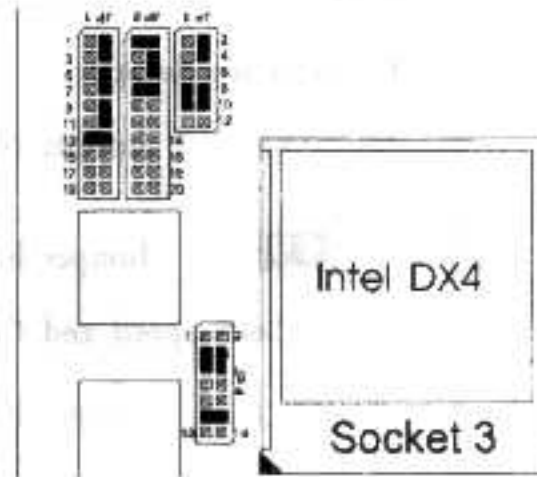
Intel 486SX and 486SX2



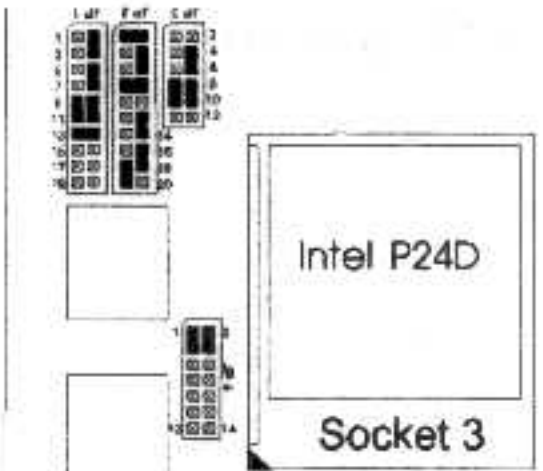
Intel 486DX and 486DX2



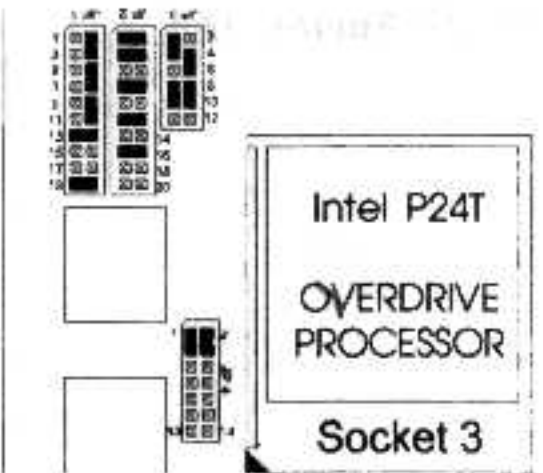
Intel DX4



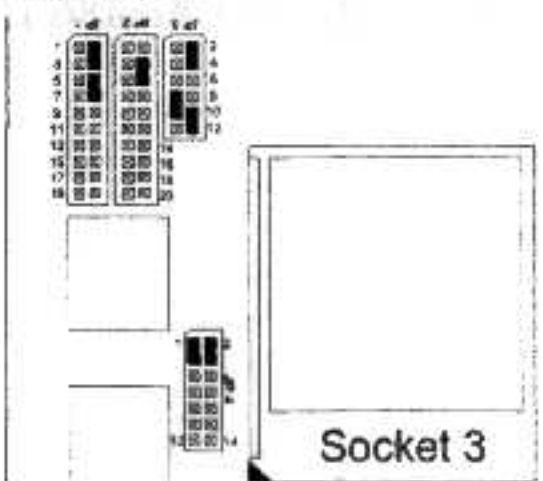
Intel P24D



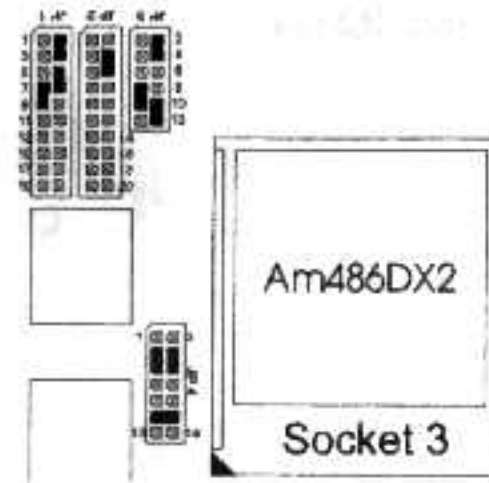
Intel P24T OVERDRIVE PROCESSOR



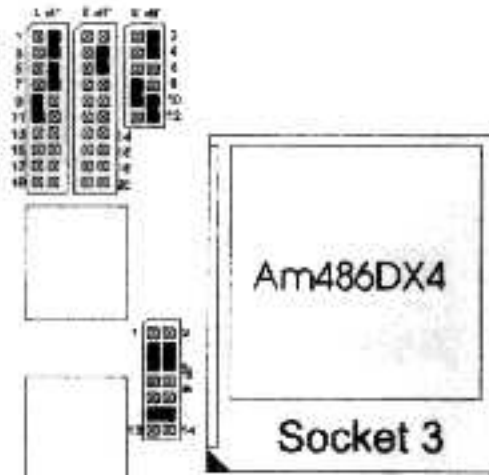
AMD Am486DX, Am486DX2 (5 volt)



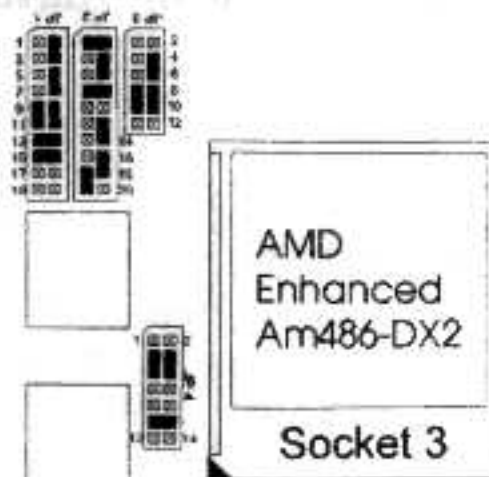
AMD Am486DX2 (3 volt)



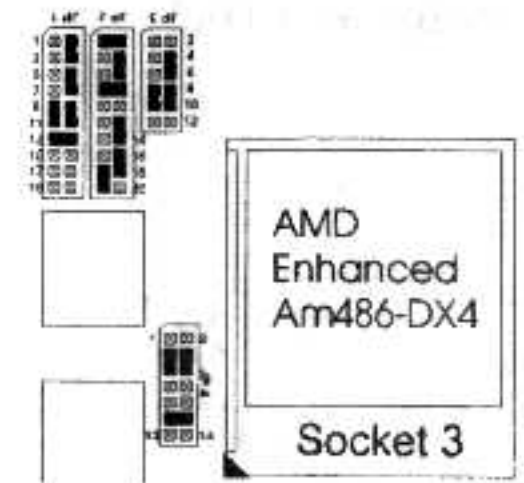
AMD Am486DX4



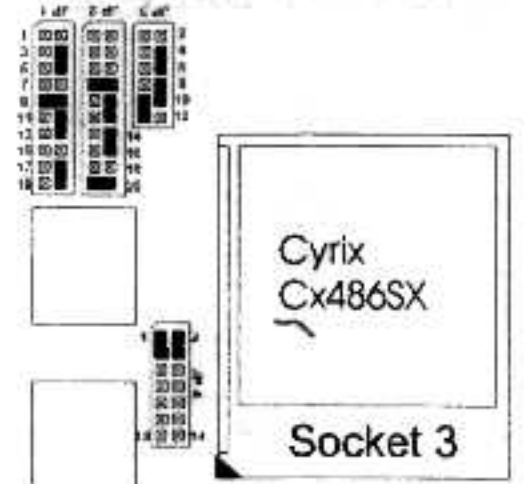
AMD Enhanced Am486-DX2



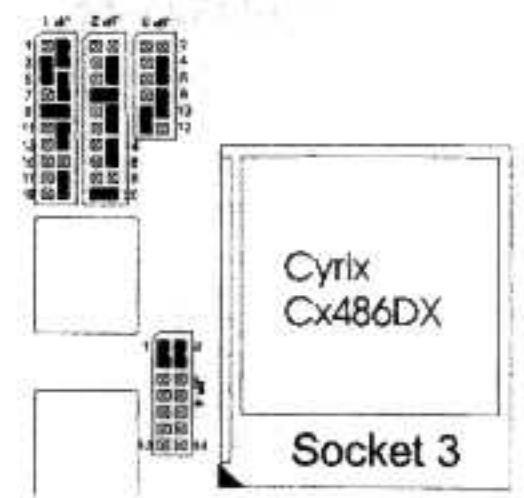
AMD Enhanced Am486-DX4



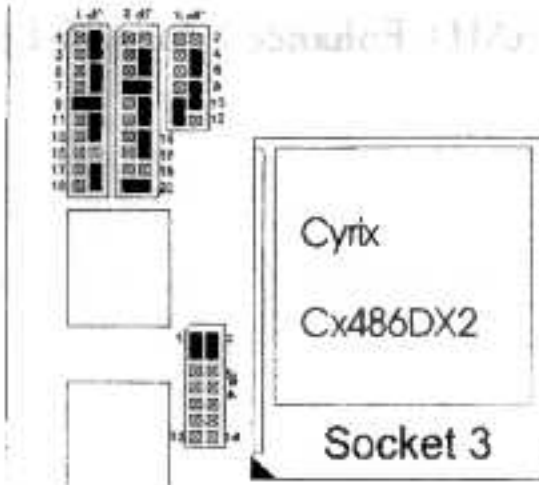
Cyrix Cx486SX



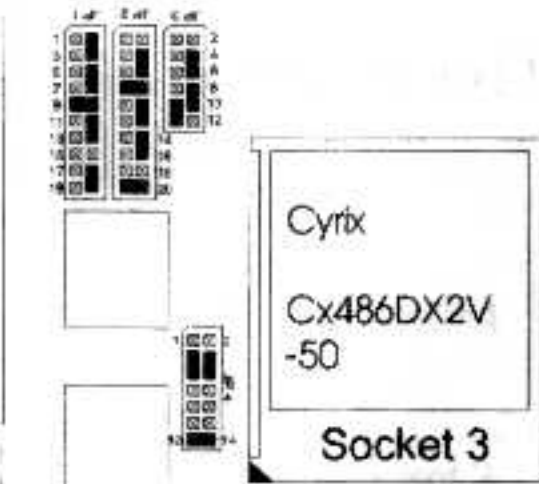
Cyrix Cx486DX



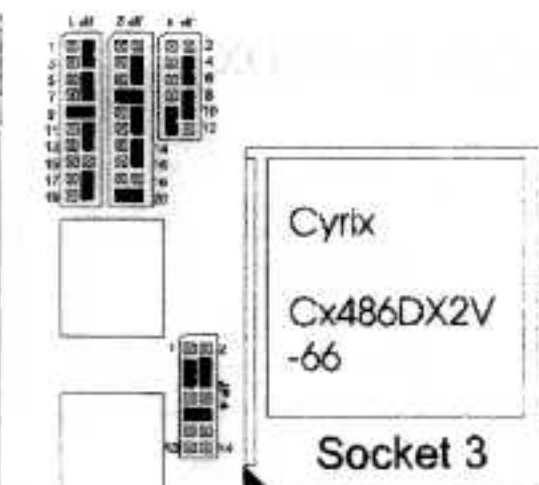
Cyrix Cx486DX2



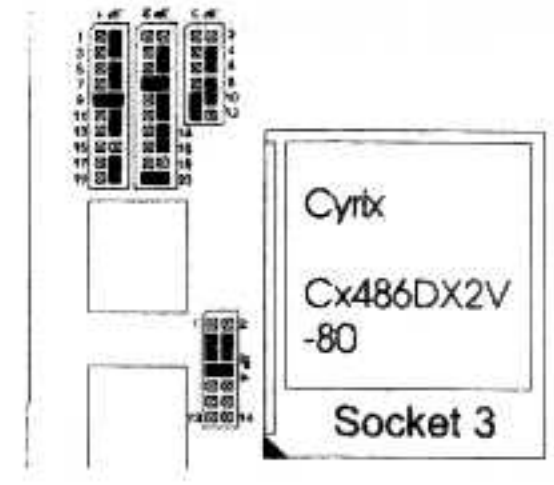
Cyrix Cx486DX2V-50



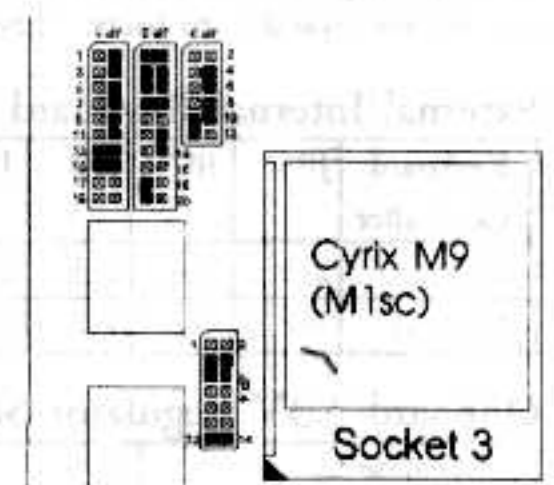
Cyrix Cx486DX2V-66



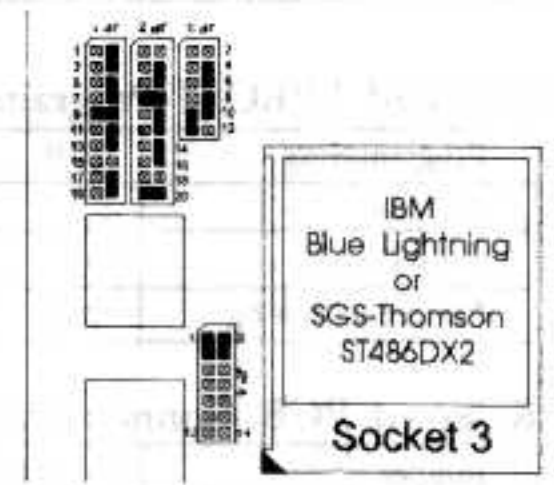
Cyrix Cx486DX2V-80



Cyrix M9 (M1sc)



IBM Blue Lightning and SGS-Thomson ST486DX2



is not utilized by DOS with a section, or frame, so these applications can access all of the system memory. Memory can be swapped by EMS is usually 64K within 1MB or memory above 1MB, depending on the chipset design.

Expanded memory device driver is required to use memory as Expanded Memory.

Base Memory

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

Extended Memory

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

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

BIOS Features Setup Menu

ROM PC/ISA BIOS (XXXXXXXX)
BIOS Features Setup
Award Software, Inc

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up System Speed	: High	Boot Up Numlock Status	: On
IDE HDD Block Mode	: Disabled		
Gate A20 Option	: Fast		
Memory Parity Check	: Enabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay(Msec)	: 250		
Security Option	: Setup		
IDE Second Channel Control	: Enabled		
		ESC : Quit	↓ ↑ → ← : Select Item
		F1 : Help	PUPD/+- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run an antivirus program to locate the problem.

! WARNING !

Disk boot sector is to be modified

Type "Y" to accept write or "N" to abort write

Award Software, Inc.

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

CPU Internal Cache

This feature allows a user to disable the high speed internal cache of the processor. The default value is enable.

- Enabled - Enable cache
- Disabled - Disable cache

External Cache

This category speeds up memory access. However, it depends on CPU/chipset design. The default value is disable.

- Enabled - Enable cache
- Disabled - Disable cache

Quick Power On Self Test

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

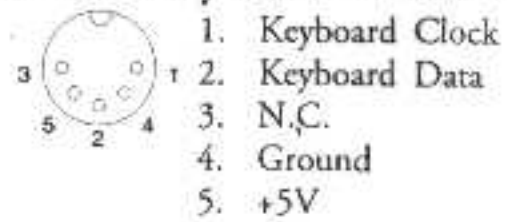
- Enabled - Enable quick POST
- Disabled - Normal POST

Boot Sequence

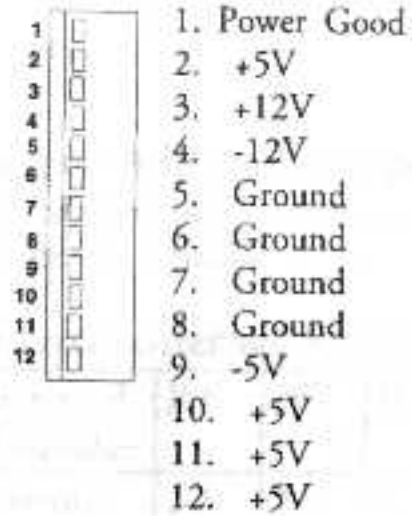
This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C.

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

CN25 Keyboard Connector



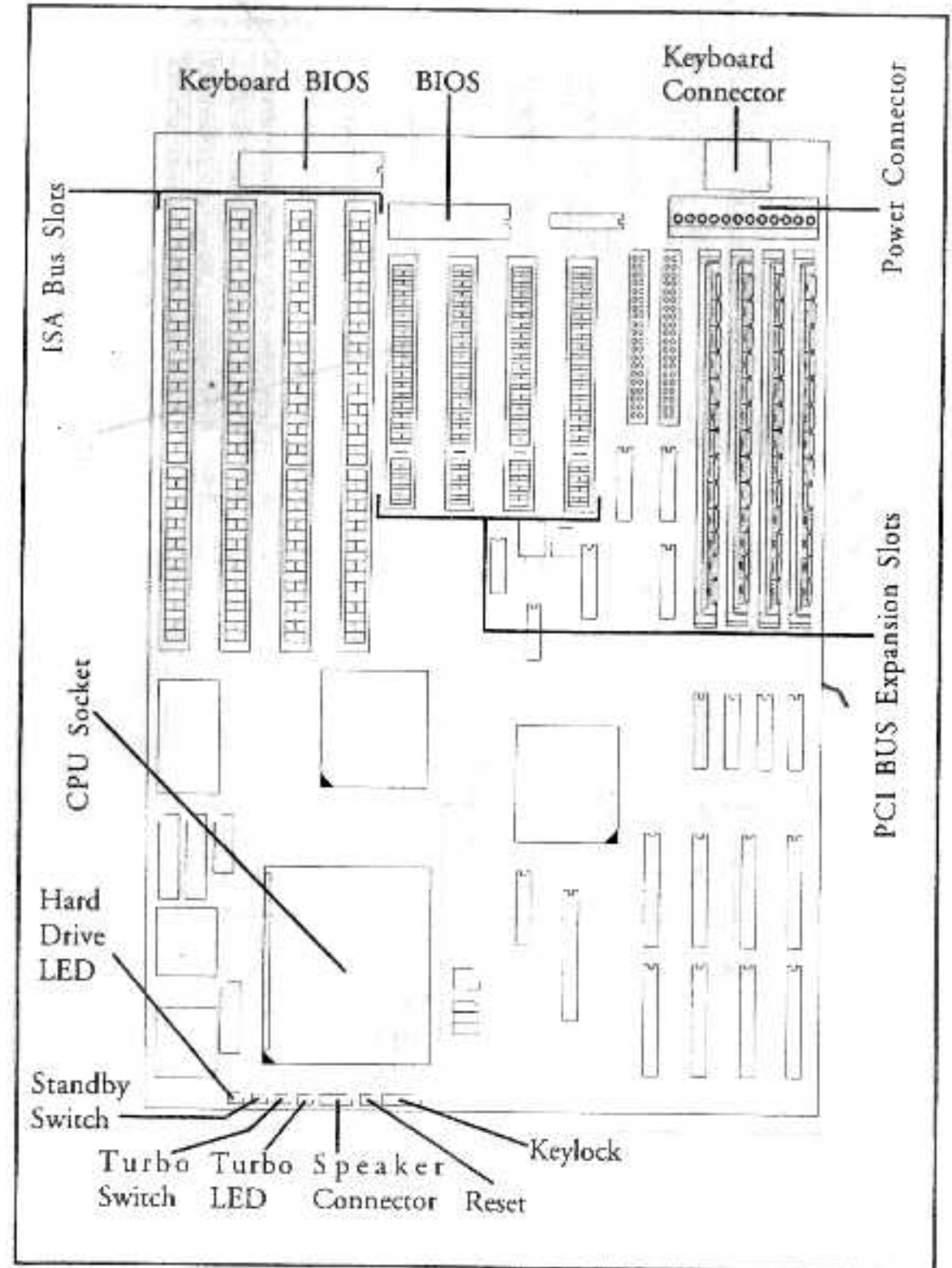
CN27 Power Connector



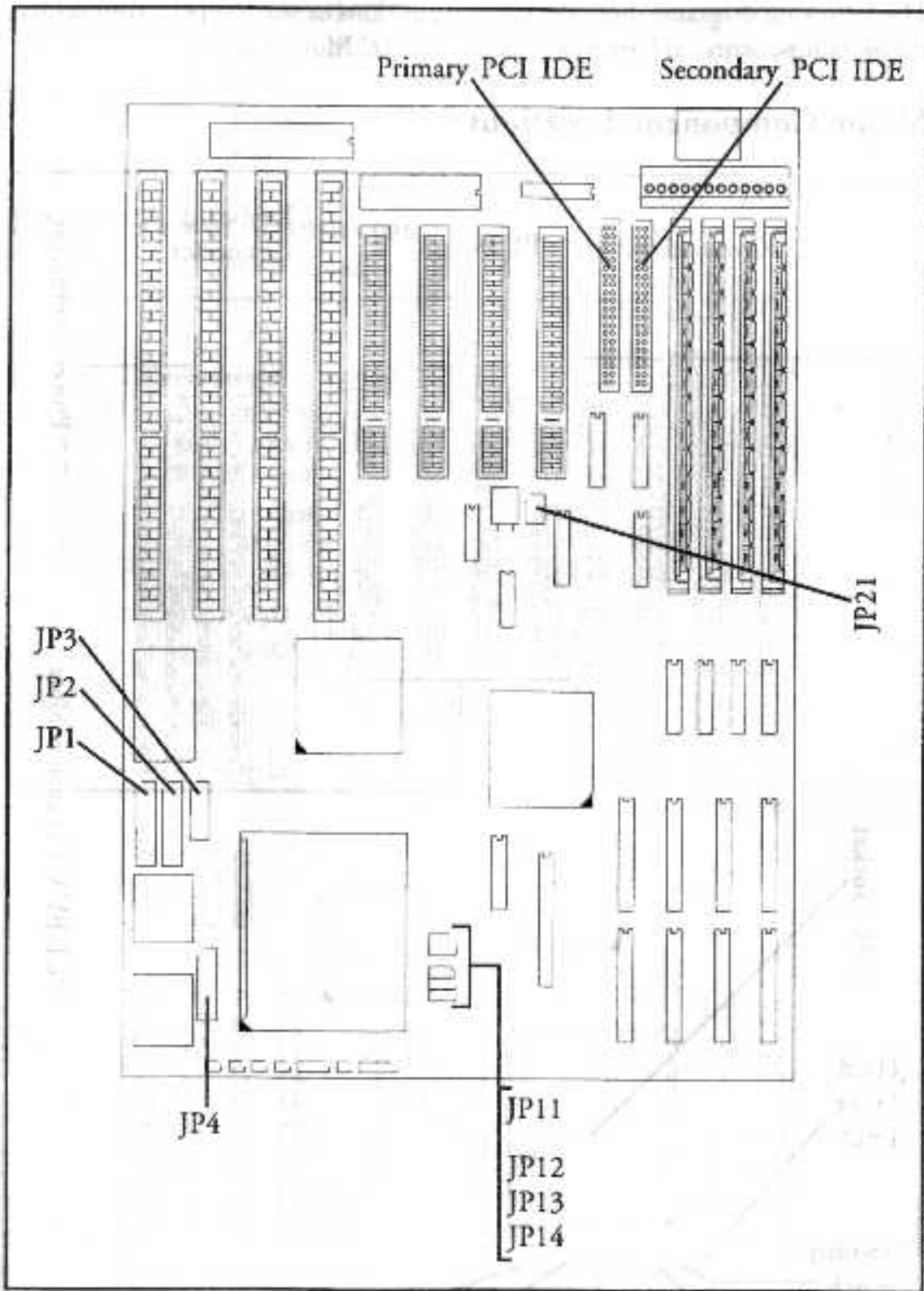
Motherboard Layout

The following diagrams show the relative positions of the jumpers, connectors, major components and memory banks on the Motherboard.

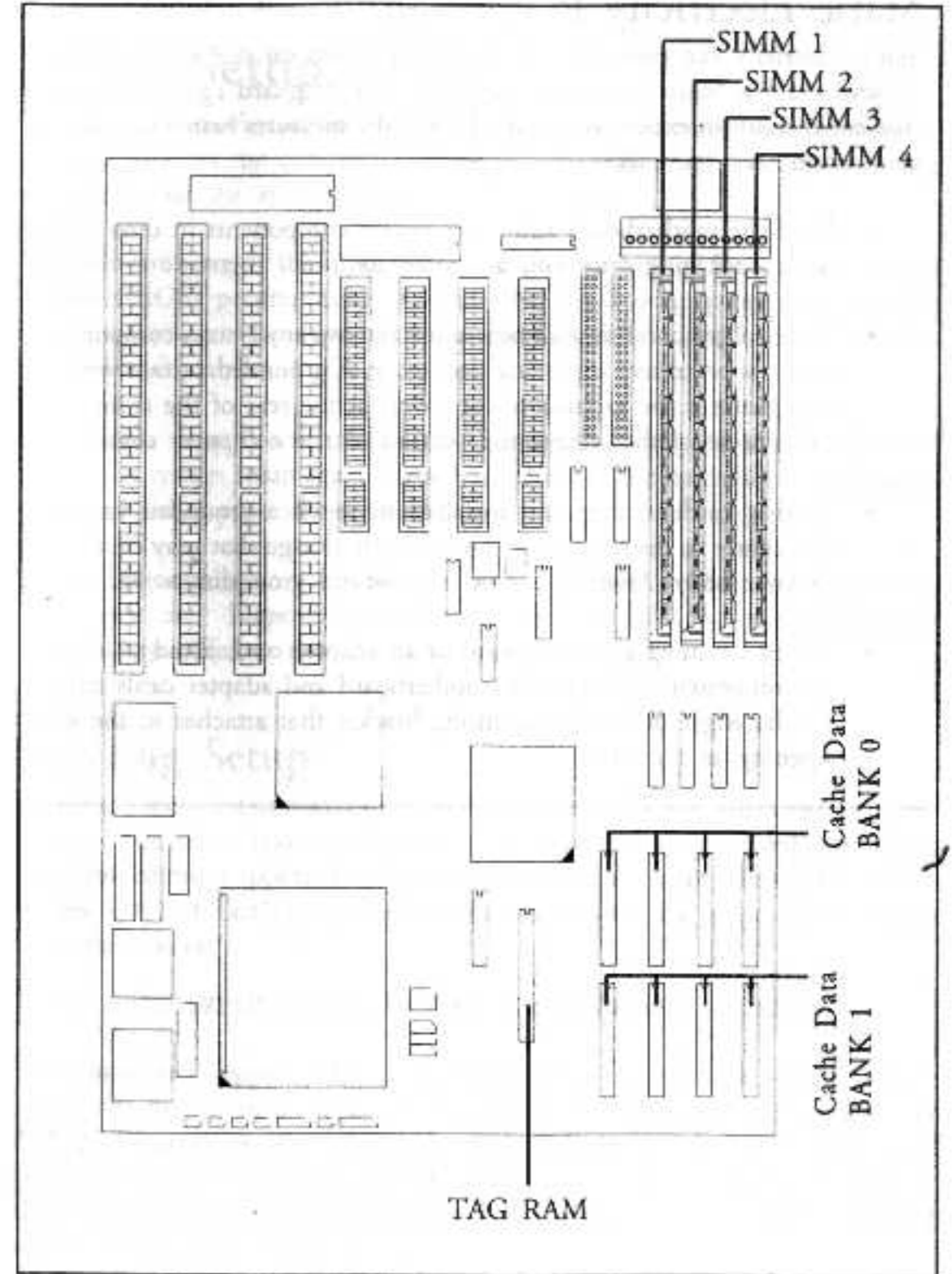
Major Component Locations



Jumper Locations and I/O Headers



Memory Banks



Static Electricity Precaution

Static electricity can easily damage the components on the motherboard. Observing a few basic precautions can help you safeguard against damage that could result in expensive repairs. Follow the measures below to protect your equipment from static discharge:

- Keep the motherboard and other system components in their anti-static packaging until you are ready to install them.
- Touch a grounded surface before you remove any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the computer case, or any other unpainted portion of the computer chassis.
- During configuration and installation, touch a grounded surface frequently to discharge any static electric charge that may build up in your body. Another option is to wear a grounding wrist strap.
- When handling a motherboard or an adapter card, avoid touching its components. Handle the motherboard and adapter cards either by the edges or by the mounting bracket that attaches to the slot opening in the case.

Chapter 2 BIOS Setup

After you have configured the Motherboard, and have assembled the components, you can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the Motherboard is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to your Motherboard.

The system setup is also called CMOS setup. Normally, you will only need to run the system setup again if you have changed the hardware configuration (for example, a processor upgrade).

The BIOS installed on this Motherboard is written by Award Software International Inc. Depending on the version of the BIOS, your BIOS setup screens may differ to those illustrated in this section.

Entering Setup

Power on the computer and press immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

Control Keys

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu —Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu —Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, available in all areas except for the Standard CMOS Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F5 key	Restore the previous CMOS value from CMOS, available in all areas except for the Standard CMOS Setup Menu
F6 key	Load the default CMOS value from BIOS default table, available in all areas except for the Standard CMOS Setup Menu
F7 key	Load setup defaults
F10 key	Save all the CMOS changes, only for Main Menu

Getting Help

Main Menu

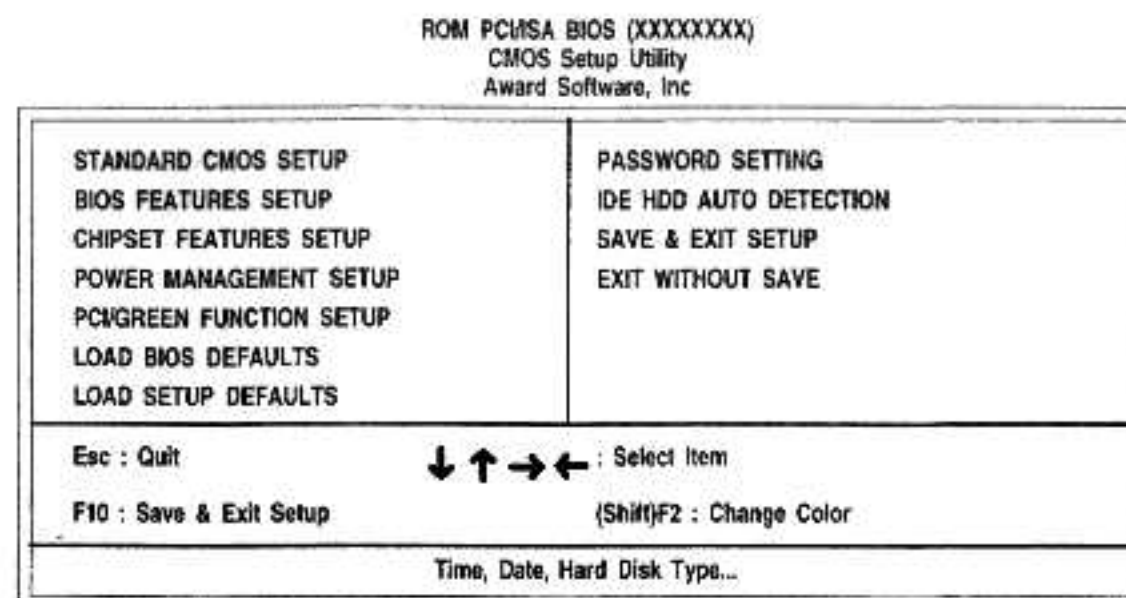
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Standard CMOS Setup / BIOS Features Setup / Chipset Features Setup / Power Management Setup / PCI Configuration Setup.

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

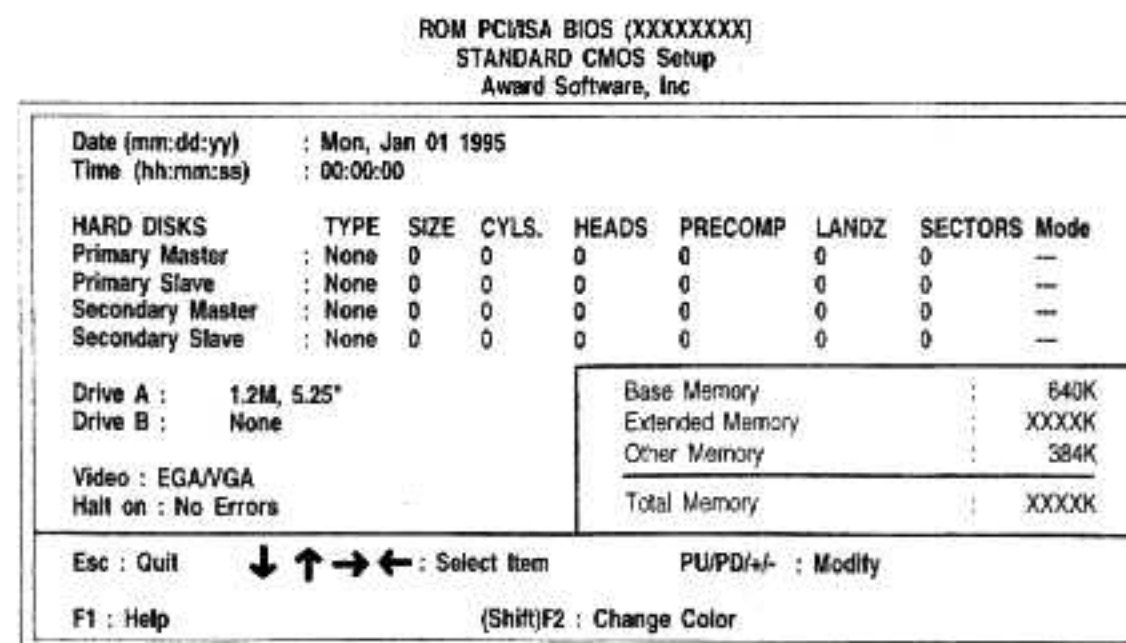
The Main Menu

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



Standard CMOS Setup Menu

The items in the Standard CMOS Setup Menu are divided into 8 categories. Each category includes one or more setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



Date

The date format is <day>, <month> <date> <year>.

- day** - The day, from Sun to Sat, determined by the BIOS and is display-only
- date** - The date, from 1 to 31 (or the maximum allowed in the month)
- month** - The month, Jan through Dec
- year** - The year, from 1994 through 2099

Time

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

Hard Disk type

This category identifies the types of hard disk drive "C" or drive "D" that has been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 46 are predefined. Type "User" is user-definable.

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

If you select Type "User", related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

- CYLS** - number of cylinders
- HEADS** - number of heads
- PRECOMP** - write precomp
- LANDZONE** - landing zone
- SECTORS** - number of sectors
- MODE** - IDE transfer mode

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

Drive A type/Drive B type

This category identifies the types of floppy disk drive "A" or drive "B" that has been installed in the computer.

- None** - No floppy drive installed
- 360K, 5.25 in** - 5-1/4 inch PC-type standard drive; 360 kilobyte capacity
- 1.2M, 5.25 in** - 5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity

- 1.2M, 5.25 in** - 5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
- 720K, 3.5 in** - 3-1/2 inch double-sided drive; 720 kilobyte capacity
- 1.44M, 3.5 in** - 3-1/2 inch double-sided drive; 1.44 mega byte capacity
- 2.88M, 3.5 in** - 3-1/2 inch double-sided drive; 2.88 mega byte capacity

Video

This category selects the type of adapter used for the primary system monitor. The setting must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

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

Halt on

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

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

Memory

This category is display-only and is determined by the POST (Power On Self Test) of the BIOS.

Expanded Memory

Expanded Memory is memory defined by the LotusTM/IntelTM/MicrosoftTM (LIM) standard as EMS. Many standard DOSTM applications can not utilize memory above 640K, the Expanded Memory Specification (EMS) swaps memory which

Memory Verify Error at ...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT:

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR - CHECKING FOR SEGMENT ...

Indicates a parity error in Random Access Memory.

Swap Floppy Disk

This feature allows the user to swap the drive designation of the "A" and "B" floppy disk drives.

- Disabled - Default Setting
- Enabled - Swap "A" and "B" Drives

Boot Up Floppy Seek

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

- Enabled - BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
- Disabled - BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

The default value is On.

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

Boot Up System Speed

It selects the default system speed - the speed that the system will run at immediately after power up.

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

IDE HDD Block Mode

This feature allows the system to use hard drives of capacities greater than 526MB.

- Enabled - Enable IDE HDD Block Mode
- Disabled - Disable IDE HDD Block Mode

Gate A20 Option

- Normal - Keyboard
- Fast - Chipset

Typematic Rate Setting

This determines the typematic rate.

- Enabled - Enable typematic rate
- Disabled - Disable typematic rate

Typematic Rate (Chars/Sec)

- 6 - 6 characters per second
- 8 - 8 characters per second
- 10 - 10 characters per second
- 12 - 12 characters per second
- 15 - 15 characters per second
- 20 - 20 characters per second
- 24 - 24 characters per second
- 30 - 30 characters per second

Typematic Delay (Msec)

When holding down a key, the time between the first and second character displayed.

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

Security Option

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

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

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

Video BIOS Shadow

It determines whether video BIOS will be copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

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

C8000 - CFFFF Shadow/DC000 - DFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte.

- Enabled - Optional shadow is enabled
- Disabled - Optional shadow is disabled

Chipset Features Setup Menu

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

ROM PCI/ISA BIOS (XXXXXXXX)
Chipset Features Setup
Award Software, Inc

Auto Configuration	: Enabled	Host Clock / PCI Clock	: 1 : 1
DRAM Read Wait States	: 1 WS	Preempt PCI Master Option	: Disabled
DRAM Write Wait States	: 1 WS	IBC DEVSEL# Decoding	: Slow
L1 Cache Update Scheme	: Wr-Through	ALT Bit in Tag SRAM	: 7+1 Bits
L2 Cache Update Scheme	: Wr-Through		
L2 Cache Wait States	: 2-2-2-2		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Keyboard Controller Clock	: 7.16 MHz		
ISA Bus Clock Option	: PCICLK1/4		
Keyboard Emulation	: Disabled		
Memory Hole Below 16MB	: 64K		
Slow Refresh (1/4 Freq)	: Disabled		
I/O Recovery Time	: 2 BCLK		
Host-to-PCI Post Write	: 1 WS	ESC : Quit	↓ ↑ → ← : Select Item
Host-to-PCI Burst Write	: Disabled	F1 : Help	PU/PD/+/- : Modify
PCI Bus Park Option	: Disabled	F5 : Old Values	(Shift)F2 : Color
PCI Posted Memory Write	: Disabled	F6 : Load BIOS Defaults	
Burst Copy-Back Option	: Disabled	F7 : Load Setup Defaults	

All the entries on the above screen are optimal settings for this motherboard and you should not change them.

Power Management Setup

This category determines how much power consumption for system after selecting below items. Default value is Enabled.

ROM PCI/ISA BIOS (XXXXXXXX)
Power Management Setup
Award Software, Inc

Power Management	: Max Saving	* Monitor Event in Full On Mode	
PM Control by APM	: Enabled	PCI Master4 Check	: Enabled
Video Off Method	: Blank Screen	PCI Master3 Check	: Enabled
HDD Standby Timer	: 1 min	PCI Master2 Check	: Enabled
Doze Timer Select	: 0.5 min	PCI Master1 Check	: Enabled
Standby Timer Select	: 2 min	VESA Slave Access Check	: Enabled
Suspend Timer Select	: 2 min	LPT Access Check	: Enabled
		COM Access Check	: Enabled
		ISA Master & DMA Check	: Enabled
Mode Control : CPU Speed	Display	IDE Access Check	: Enabled
Doze Mode : 1/2 HCLK	Turn On	Floppy Access Check	: Enabled
Standby Mode : 1/2 HCLK	Turn Off	VGA Access Check	: Enabled
Inactive Mode : 1/8 HCLK			
		ESC : QUIT	↓ ↑ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management

- User Defined - All the power down time-out values are selected by user.
- Max power Saving - Auto setting power down time-out value to maximum power consumption.
- Min Power Saving - Auto setting power down time-out value to save minimum.
- Disable - Disable whole system power management function.

HDD Standby Timer

Select time-out value 1-15 minutes for IDE with disk auto standby. This function depends on disk drive, some older mode disk drives don't support auto standby function. System BIOS set this function before booting if HDD supported.

Video Off Method

Select the style of power management used for the monitor. System BIOS will disable Hsync & Vsyn output to VGA monitor.

PCI/Green Function Setup

This screen configures the PCI Bus slots.

ROM PCI/ISA BIOS (XXXXXXXX)
PCI/Green Function Setup
Award Software, Inc

Slot 1 Using INT#	: Auto	* Wakeup Event in Inactive Mode :	
Slot 2 Using INT#	: Auto	Monitor IRQ 3 Wakeup	: Disabled
Slot 3 Using INT#	: Auto	Monitor IRQ 4 Wakeup	: Disabled
Slot 4 Using INT#	: Auto	Monitor IRQ 5 Wakeup	: Disabled
		Monitor IRQ 6 Wakeup	: Disabled
1st Available IRQ	: 11	Monitor IRQ 7 Wakeup	: Disabled
2nd Available IRQ	: 12	Monitor IRQ 9 Wakeup	: Disabled
3rd Available IRQ	: 10	Monitor IRQ 10 Wakeup	: Disabled
4th Available IRQ	: 9	Monitor IRQ 11 Wakeup	: Disabled
PCI IRQ Activated By	: Level	Monitor IRQ 12 Wakeup	: Disabled
		Monitor IRQ 14 Wakeup	: Disabled
PCI IDE Controller	: Enabled	Monitor IRQ 15 Wakeup	: Disabled
		ESC : Quit	↓ ↑ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

The "IRQ" field assigns a system IRQ to a PCI slot.

The Default IRQ settings are :

Slot 1	: 11
Slot 2	: 12
Slot 3	: 10
Slot 4	: 9

You can change the default to another setting. If you do, make sure that you do not choose an IRQ already in use.

The 'PCI IRQ Activated By' item, selects between Level trigger, and Edge trigger. You only need to change this if you have a card that uses the Edge trigger method of generating an interrupt request. Most PCI cards use the Level method. Many IDE controller cards use Edge triggering.

When you're finished making settings for this screen, press the <ESC> key to go back to the main screen.

Load BIOS Defaults

This option allows the user to load all the BIOS defaults except for the Standard CMOS Setup.

Load Setup Defaults

This selection allows the user to load SETUP Defaults except for the Standard CMOS Setup.

Password Setting

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

ENTER PASSWORD:

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

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

PASSWORD DISABLED.

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

IDE HDD Auto Detection

Selecting this option tells the computer to search for any detectable IDE hard disk drives which are attached to the system. If it detects a drive it will prompt the user to determine if the drive that it found was correctly located. Type "Y" <Enter> if the drive has been detected correctly, type "N" <Enter> if it has not.

Press "ESC" to skip any detection sequence. Once all drives are selected, press "ESC" to exit.

Power-On Boot

After you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or Pressing the "RESET" button on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys. Upon restart the system, immediately press <Insert> to load BIOS default CMOS value for boot up.

Base Memory	:	640K
Extended Memory	:	XXXXK
Other Memory	:	384K
Total Memory	:	XXXXK

BIOS Error Messages

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and the message **PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP** will be shown in the information box at the bottom.

POST Beep

Currently there is only one beep code in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

No boot device was found. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPLAY SWITCH IS SET INCORRECTLY

Display switch on the Motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT

Cannot find or initialize the floppy drive controller. Make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

KEYBOARD ERROR OR NO KEYBOARD PRESENT

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to **HALT ON ALL, BUT KEYBOARD**. This will cause the BIOS to ignore the missing keyboard and continue the boot.

Memory Address Error at ...

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory parity Error at ...

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. Please enter the CMOS Setup and save the new memory configuration by selecting the "SAVE & EXIT" option from the Main Menu. This will save the memory size in the memory fields.

