P5V580-AT-C

ISA/PCI/IO
Mother Board
User's Manual

PART NO. M523G0010C Rev 1.0 AUG. 1997

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1. P5V580-AT SPECIFICATIONS

CPU	**CPU**	Intel Pentium P54C / P54CS / P55C Cyrix 6x86 / 6x86L / 6x86MX AMD K5 / K6
	CPU Speed	P54C : 75/90/100/120/133/150/166/200MHz; P55C : 166/200/233MHz
	System Speed	50/55/60/66/75MHz
BIOS	**BIOS**	128K BIOS; PnP Compliant
	BIOS ROM	Flash Memory
CACHE	**Internal (L1)**	Write Back
	External (L2)	Pipe-line Burst Write Back SRAM(256K/512K)
MEMORY	**DRAM Size**	From 8M up to 256M Bytes
	DRAM Module	SIMM x 4 for 2 Banks of 72 Pin
		DIMM x 1 of 168 Pin for 3.3V Sync. and EDO DRAM
		Data Path 64 Bit Wide
On Board I/O	**I/O Function**	Local Bus Enchanced Dual-Channel IDE
		Bus Master PCI IDE /Mode 4 Support
		ECP/EPP Parallel Port
		2 Serial Port
		IR Function (Optional)
		FDD Support
GREEN	**SYSTEM**	SMM Control, Stop CPU Clock
	VGA	Control of DPMS
SLOT	**Expansion Slot**	16 Bit ISA x 4
		32 Bit PCI x 3 (3 Master Support)
	PCI Bus	Fully Synchronous 25/27.5/30/33/37.5MHz PCI Bus Interface
	MEMORY	DIMM x 1 + SIMM x 4
Mouse		PS/2 Mouse
Keyboard	**Keyboard CNN**	AT Keyboard
Others	**Main Chipset**	VIA 580VPX CHIPSET
	IO Chipset	SMC669
	PCB Size	220mm x 230mm x 1.6mm, 4 layers

2. JUMPER SETTING

2.1. Table of Jumper Setting

- **CPU Voltage Select (* : reserve)**

CPU TYPE	JP1	JP9					VCORE
		A	B	C	D	E	
*	*	OFF	OFF	OFF	OFF	ON	2.1V
PENTIUM MMX/Cyrix 6x86L	3-5/4-6	OFF	ON	OFF	OFF	OFF	2.8V
Cyrix 6x86MX/AMD K6(166-200)	3-5/4-6	OFF	ON	OFF	OFF	ON	2.9V
AMD K6(233)	3-5/4-6	OFF	ON	ON	OFF	OFF	3.2V
PENTIUM	1-3/2-4	OFF	ON	ON	OFF	ON	3.3V
Cyrix 6x86/AMD K5	1-3/2-4	OFF	ON	ON	ON	ON	3.5V

- **CPU Jumper Setting**

INTEL	JP6	JP7	JP8	JP2	JP3
75MHz	2-3	2-3	2-3	OFF	OFF
90MHz				OFF	OFF
120MHz	2-3	2-3	1-2	OFF	ON
150MHz				ON	ON
100MHz				OFF	OFF
133MHz				OFF	ON
166MHz	2-3	1-2	2-3	ON	ON
200MHz				ON	OFF
233MHz				OFF	OFF

✧ If select Cyrix CPU, JP10 must be set ON and select 6x86L-P200$^+$ / 6x86MX-PR200 75MHz, JP5 must be set 2-3

Cyrix	JP6	JP7	JP8	JP2	JP3
6x86-P120$^+$	2-3	2-3	2-3		
6x86-P133$^+$	1-2	2-3	2-3		
6x86-P150$^+$	2-3	2-3	1-2	OFF	ON
6x86/6x86L-P166$^+$	2-3	1-2	2-3		
6x86L-P200$^+$	1-2	2-3	1-2		
6x86MX- PR166 60MHz Bus 2.5x	2-3	2-3	1-2	ON	ON
6x86MX- PR166 66MHz Bus 2x	2-3	1-2	2-3	OFF	ON
6x86MX- PR200 66MHz Bus 2.5x	2-3	1-2	2-3	ON	ON
6x86MX- PR200 75MHz Bus 2x	1-2	2-3	1-2	OFF	ON

AMD	JP6	JP7	JP8	JP2	JP3
K5 -PR75	2-3	2-3	2-3		
K5 -PR90	2-3	2-3	1-2		
K5 -PR100	2-3	1-2	2-3	OFF	OFF
K5 -PR120	2-3	2-3	1-2		
K5 -PR133	2-3	1-2	2-3		

K5 -PR150	2-3	2-3	1-2	ON	ON
K5 -PR166	2-3	1-2	2-3	ON	ON
K6-166	2-3	1-2	2-3	ON	ON
K6-200	2-3	1-2	2-3	ON	OFF
K6-233	2-3	1-2	2-3	OFF	OFF

2. JUMPER SETTING

- **Memory Size**
  - ✧ **168 PIN DIMM & 72 PIN SIMM**

Option	Type
Bank0/1	8M, 16M, 32M, 64M
Bank2/3	4M/4M,8M/8M,16M/16M,32M/32M,64M/64M
Bank4/5	4M/4M,8M/8M,16M/16M,32M/32M,64M/64M

NOTE : **1 >** 4M : [1Mx(32/36)bit]2
8M : [2Mx(32/36)bit]2
16M : [4Mx(32/36)bit]2
32M : [8Mx(32/36)bit]2
64M : [16Mx(32/36)bit]2

2 > The DRAM interface supports 8Mbytes to 256 Mbytes

3 > For access time SIMM, must use 70us or less.

4 > The DRAM modules installed to the same memory bank need to be consistent. But the combinations of different memory size of Bank 1 and Bank 2 are accepted.

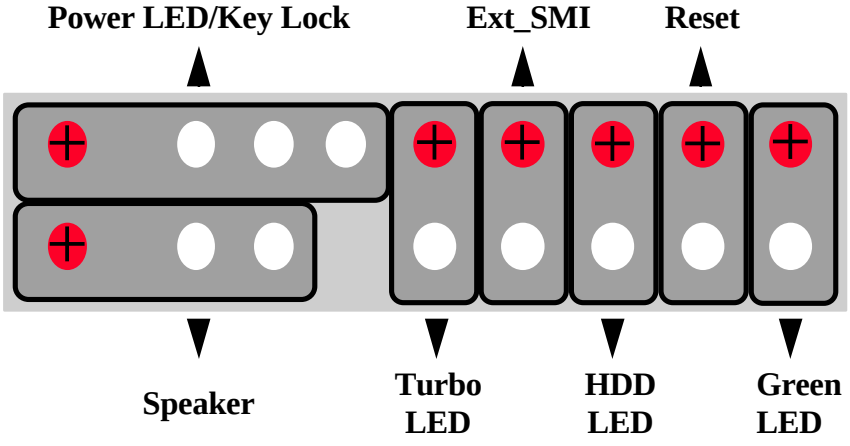
5 > Bank 0/1 support 168pin 3.3V Sync. and EDO DRAM.

6 > Bank 2/3/4/5 support 72 pin 5V EDO and fast page mode DRAM

● Special Function Jumpers

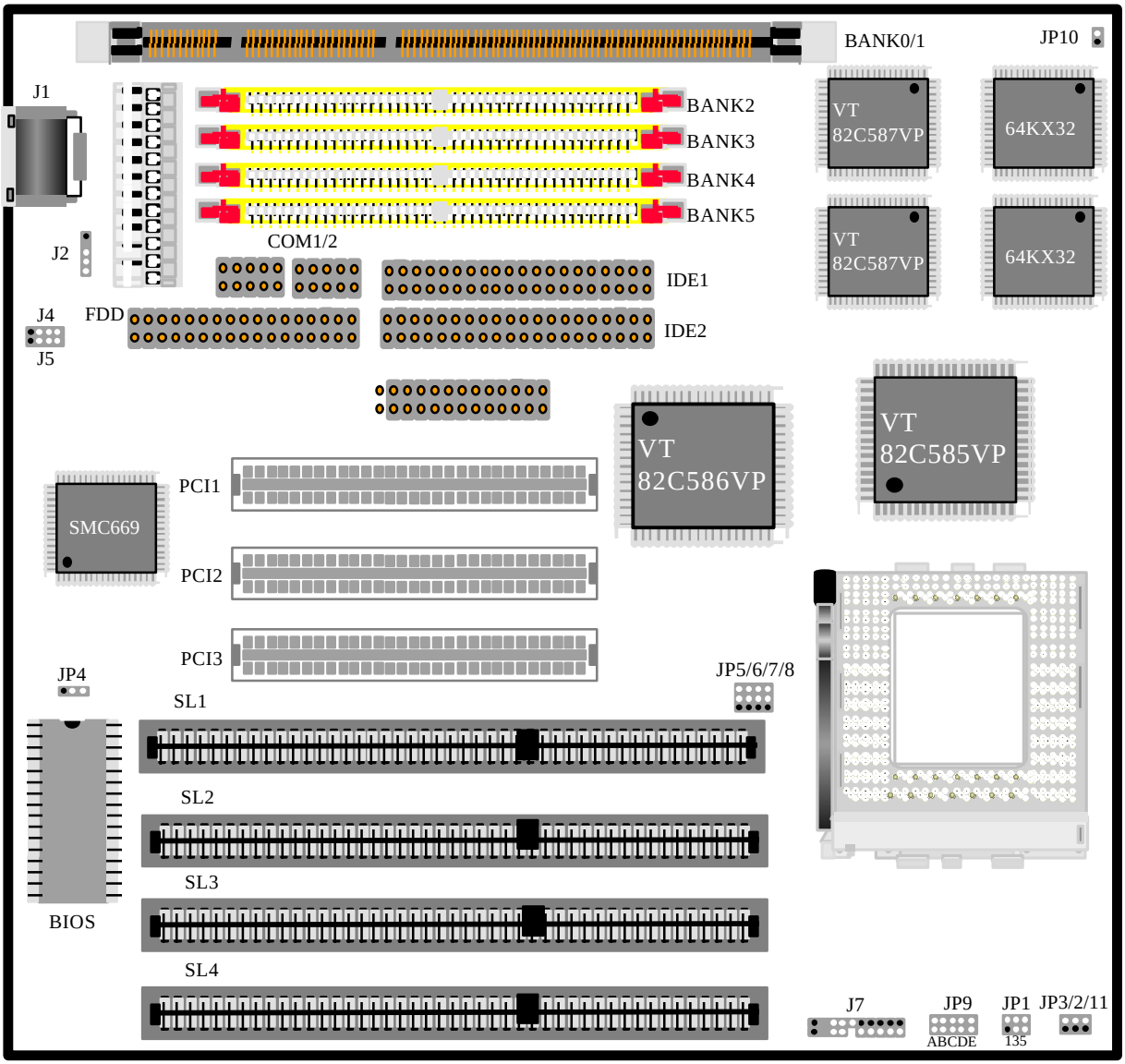
Jumper Number	FUNCTION
J1	K/B CONNECTOR
J2	PS/2 MOUSE
J6	IR
COM 1	COM PORT 1
COM 2	COM PORT 2
IDE 1	IDE 1
IDE 2	IDE 2
FDC 1	FDD
LPT 1	PRINT PORT 1
JP4	CMOS CLEAR
J7	MULTIFUNCTION CONNECTOR

● Multifunction Connector



2.2 Chart of jumper

JUMPER OUTLINE



3. AWARD BIOS SETUP

3.1 Entering Setup

Power on the computer and press <Del> immediately to 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 <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

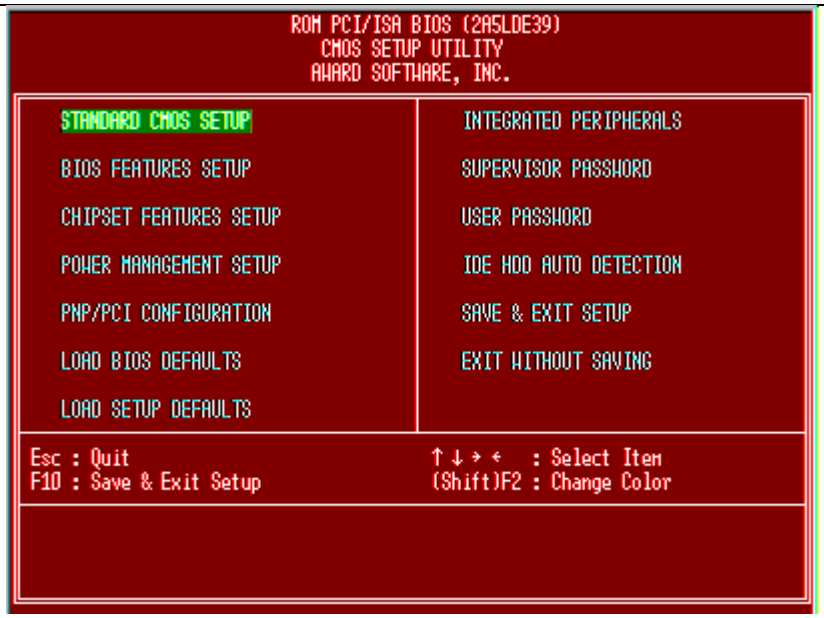
TO ENTER SETUP BEFORE BOOT PRESS : <CTRL-ALT-ESC> OR <DEL> KEY

If the message disappears before you respond, restart the system 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

3.2 The Main Menu

Once you enter Awoard BIOS CMOS Setup Utility, the Main Menu (Figure 1) 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

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

BIOS FEATURES SETUP

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

CHIPSET FEATURES SETUP

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

POWER MANAGEMENT SETUP

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

PNP/PCI CONFIGURATION SETUP

This category specifies the value (in units of PCI bus clocks) of the latency time for this PCI bus master and the IRQ level for a PCI device.

3. AWARD BIOS SETUP

LOAD BIOS DEFAULTS

BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance.

LOAD SETUP DEFAULTS

Chipset defaults indicates the values required by the system for the maximum performance.

INTEGRATED PERIPHERALS

IDE, FDD, Serial, Parallel port I/O configuration.

SUPERVISOR & USER PASSWORD SETTING

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

IDE HDD AUTO DETECTION

Automatically configure hard disk parameters.

HDD LOW LEVEL FORMAT

To perform low level format of hard disk drive.

SAVE & EXIT SETUP

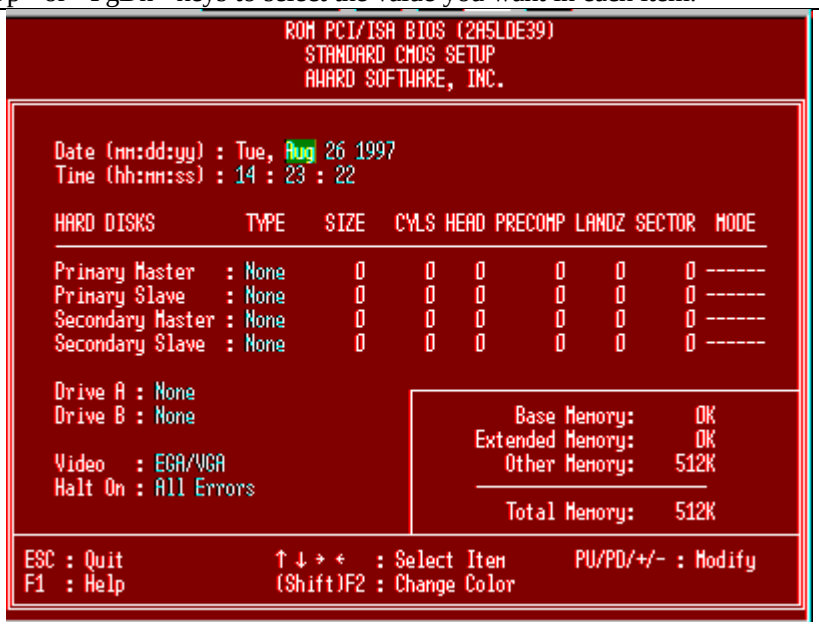
Save CMOS value changes to CMOS and exit setup.

EXIT WITHOUT SAVE

Abandon all CMOS value changes and exit setup.

3.3 Standard CMOS Setup Menu

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



Date

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

day	The day of week, from Sun to Sat, determined by the BIOS, is read only
date	The date, from 1 to 31 (or the maximum allowed in the month), can key in the numerical / function key
month	The month, Jan through Dec
year	The year, depends on the year of BIOS

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.

Primary Master/Primary Slave/Secondary Master/Secondary Slave

The category identifies primary and secondary channels. Type User is user- definable, you can select "AUTO", the system will be automatically detect harddisk type.

Press PgUp/<+> or PgDn/<symbol 45 \f "Symbol" \s 10.5–> to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, 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.

If the controller of HDD interface is SCSI, the selection shall be "None".
If the controller of HDD interface is CD-ROM, the selection shall be "None".

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	landing zone
SECTORS	number of sectors
MODE	HDD access mode

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

Drive A type/Drive B type

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

None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
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 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

3. AWARD BIOS SETUP

Video

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

There are two ways to boot up the system:
1. When VGA as primary and monochrome as secondary, the selection of the video type is "VGA Mode"
2. When monochrome as primary and VGA as secondary, the selection of the video type is "Monochrome Mode".

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

Error halt

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

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

Memory

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

symbol 254 \f "MS LineDraw" \s 10.5 } *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.

symbol 254 \f "MS LineDraw" \s 10.5 } *Extended Memory*

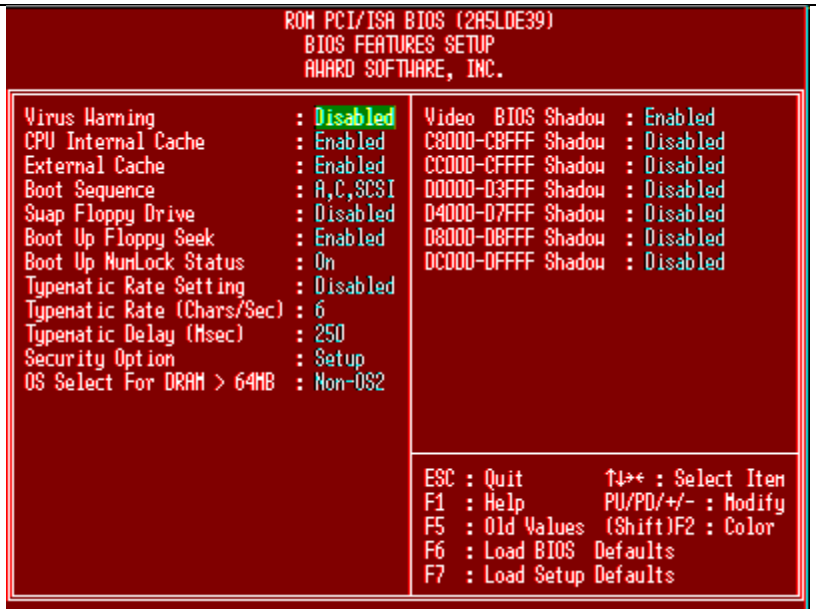
The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

symbol 254 \f "MS LineDraw" \s 10.5 } *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.

symbol 254 \f "MS LineDraw" \s 10.5 } *Total Memory*
System total memory is the sum of basic memory, extended memory, and other memory.

3.4 BIOS Features Setup Menu



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 anti-virus 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.

Note: This function is available only for DOS and other OSes that do not trap INT13.

CPU Internal Cache

These two categories speed up memory access. The default value is Enable.

Enabled	Enable cache
Disabled	Disable cache

External Cache

The External Cache selection enables or disables the external (L2) cache and the onboard secondary cache. The default setting is Enabled.

Enabled	Enable external cache
Disabled	Disable external cache

Boot Sequence

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

1.	A, C, SCSI	6.	E, A, SCSI
2.	C, A, SCSI	7.	F, A, SCSI
3.	C, CDROM, A	8.	SCSI, A, C
4.	CDROM, C, A	9.	SCSI, C, A
5.	D, A, SCSI	10.	C only

Swap Floppy Drive

This category can change A and B drive.

Enabled	Assign A to B & B to A drive.
Disabled	Normal.

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 detemine 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

Typematic Rate Setting

This detemines the typematic rate.

Enabled	Enable typematic rate and typematic delay programming
Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of this 2 items and the default is controlled by deyboard.

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)

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.

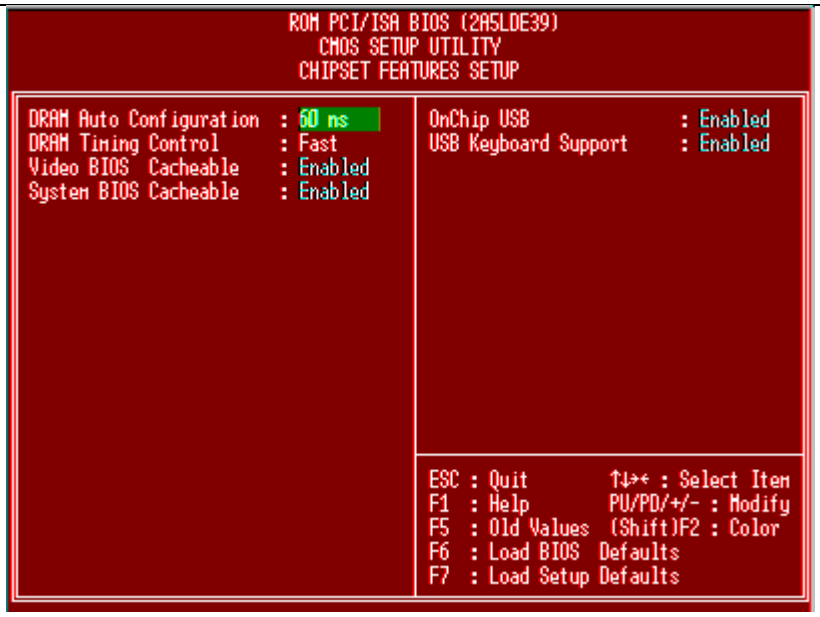
Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

Video BIOS Shadow

It determines whether video BIOS will be copied to system 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

3.5 Chipset Features Setup Menu



DRAM Auto Configuration

This option specifies DRAM Timing. If DRAM modules speed symbol 60 \f "Symbol" \s 10.5< 60ns, please select 60ns. If DRAM modules speed symbol 62 \f "Symbol" \s 10.5> 70ns, please select 70ns.

DRAM Timing Control

This option specifies Turbo / Fast / Medium / Normal mode DRAM Timing

Video BIOS Cacheable

The Video BIOS Cache selection allows you to cache the video BIOS for even higher performance. The default setting is Enabled.

System BIOS Cacheable

The System BIOS Cache selection allows you to cache the system BIOS for even higher performance. The default setting is Enabled

On-Chip USB

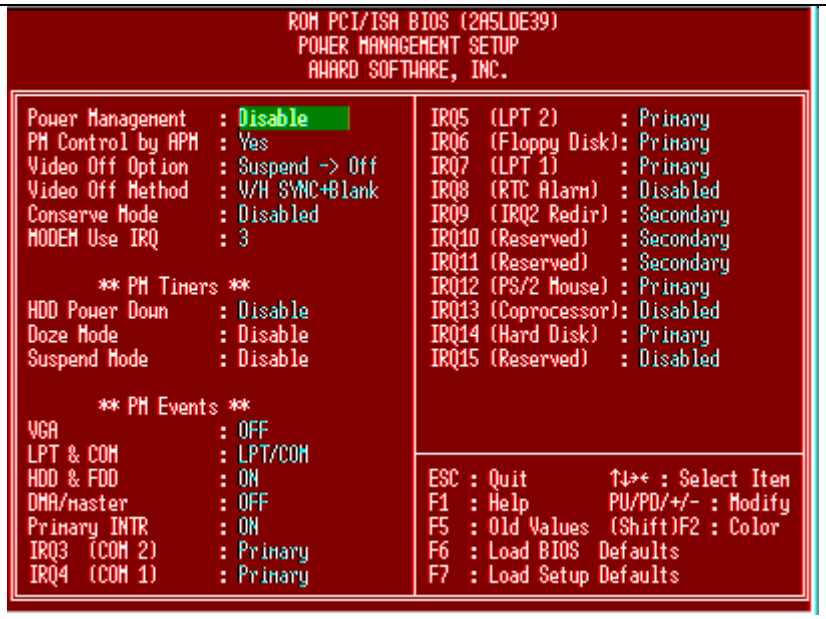
This motherboard supports Universal Serial Bus (USB) devices. This option enbaled or disabled the USB controller.

USB Keyboard Support

If you are using the USB keyboard should this item be enabled.

3.6 Power Management Setup

The Power management setup will appear on your screen like this:



This category determines how much power is comsumed. Default value is Disable. The following pages tell you the options of each item & describe the meanings of each option.

Item	Options	Descriptions
Power Management	1. Disable	Global Power Management will be disabled
	2. User Define	Users can configure their own power management
	3. Min Saving	Pre-defined timer values are used such that all timers are in their MAX value
	4. Max Saving	Pre-defined timer values are used such that all timers MIN value

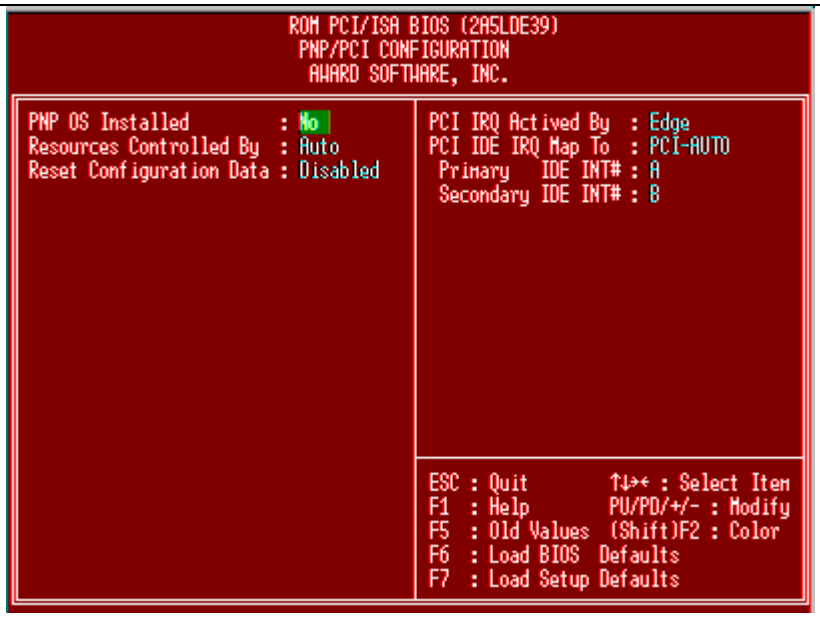
Item	Options	Descriptions
PM Control by APM	1. No	System BIOS will ignore APM when power managing the system
	2. Yes	System BIOS will wait for APM's prompt before it enter any PM mode e.g. DOZE, STANDBY or SUSPEND Note1: If APM is installed,& if there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving modesymbol 33 \f "Symbol" \s 10.5!
		Note2: If APM is not installed, this option has no effect.
Video Off Method	1. Blank Screen	The system BIOS will only blank off the screen when disabling video
	2. V/H SYNC + Blank	In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals form VGA cards to monitor
	3. DPMS	This function is enabled for VGA card that support DPM
		Note: Green monitors detect the V/H SYNC signals to turn off its electron gun
MODEM Use IRQ	1. 3 2. 4 3. 5 4. 7 5. 9 6. 10 7. 11 8. NA	Use IRQ 3 Use IRQ 4 Use IRQ 5 Use IRQ 7 Use IRQ 9 Use IRQ 10 Use IRQ 11 Not Use IRQ

Item	Options	Descriptions
HDD Power Down	1. Disabled 2. 1-15Mins	Shuts down any IDE hard disk drives in the system after a period of inactivity.
Doze Mode (*) Remark 1	1. Disable	System will never enter DOZE mode
	2. 1 Min 2 Min 4 Min 6 Min 8 Min 10 Min 20 Min 30 Min 40 Min 1 Hr	Defines the continuous idle time before the system enters DOZE mode. if any item defined in (H) is enabled & active, DOZE timer will be reloaded. Note: Normally,DOZE mode puts the system into low speed or 8MHz, screen may be off depending on Video Off Option
suspend Mode (*) Remark 1	1. Disable	System will never enter SUSPEND mode
	2. 1 Min 2 Min 4 Min 6 Min 8 Min 10 Min 20 Min 30 Min 40 Min 1 Hr	Defines the continuous idle time before the system enters SUSPEND mode. If any item defined in (H) is enabled & active, SUSPEND timer will be reloaded. Note: Normally,SUSPEND mode puts the system into low speed or 8MHz, clock is stopped, screen may be off depending on Video Off Option
	3. When Suspend	BIOS will turn the HDD's motor off when system is in SUSPEND mode
PM Events VGA/LPT & COM HDD & FDD DMA/master Primary INTR	You can set IRQs 3-15 individually. Activity detected from any enabled IRQ channel will wake up the system.	

*** Remark 1**: All items mark with (*) in this menu, will be loaded with predefined values as long as the item 'Power Management' is not configured to 'User Defined' These items are : Item 'System Doze' & 'System Suspend'

3.7 PNP/PCI Configuration Setup

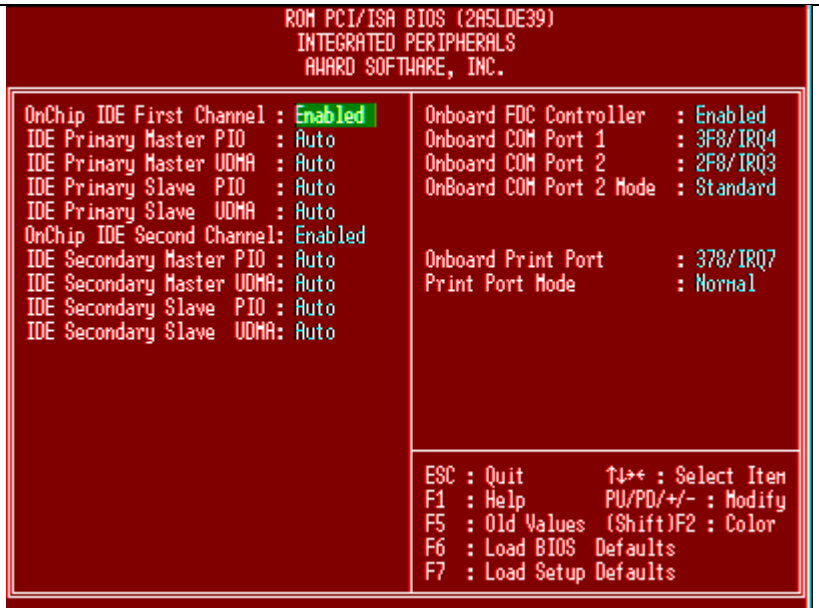
You can manually configurate the PCI Device's IRQ. The following pages tell you the options of each item & describe the meanings of each option.



The following pages tell you the options of each item & describe the meanings of each option.

Item	Options	Descriptions
PCI IRQ Activated by	Edge Level	To tell the chipset the IRQ signals input is level or edge trigger
PCI IDE IRQ Map To	PCI-AUTO PCI-SLOT1 PCI-SLOT2 PCI-SLOT3 PCI-SLOT4 ISA	PCI-AUTO The BIOS will: - scan for PCI IDE devices & determine the location of the PCI IDE device (See below item) PCI-SLOT1 PCI-SLOT2 PCI-SLOT3 PCI-SLOT4 symbol 45 \f "Symbol" \s 10.5– assign IRQ 14 for primary IDE INT# IRQ 15 for secondary IDE INT# for the specified slot ISA symbol 45 \f "Symbol" \s 10.5– The BIOS will not assign any IRQs even if PCI IDE card is found! Because some IDE cards connect the IRQ 14 & 15 directly from ISA slot thru a cord. (This cord is called Legacy Header)
Primary IDE INT# **Secondary IDE INT#**	A B	To tell which INT the PCI IDE card is using for its interrupts

3.8 Integrated Peripherals



OnChip IDE First Channel
This option enables the first channel IDE on the motherboard. The settings are Enabled or Disabled.

IDE Primary Master PIO
This option selected the on board PCI IDE primary master HDD PIO Mode.

IDE Primary Master UDMA
This option selected the on board PCI IDE primary master HDD Ultra DMA Mode.

IDE Primary Slave PIO
This option selected the on board PCI IDE primary slave HDD PIO Mode.

IDE Primary Slave UDMA
This option selected the on board PCI IDE primary slave HDD Ultra DMA Mode.

OnChip IDE Second Channel
This option enables the secondary channel IDE on the motherboard. The settings are Enabled or Disabled.

IDE Secondary Master PIO
This option selected the on board PCI IDE secondary master HDD PIO Mode.

IDE Secondary Master UDMA

This option selected the on board PCI IDE secondary master HDD Ultra DMA Mode.

IDE Secondary Slave PIO

This option selected the on board PCI IDE secondary slave HDD PIO Mode.

IDE Secondary Slave UDMA

This option selected the on board PCI IDE secondary slave HDD Ultra Mode.

Onboard FDC Controller

This option enables Onboard FDC controller or disabled Onboard FDC controller and use expand FDC controller card.

Onboard COM Port 1

This option specifies the first serial port address and IRQ on the motherboard.

Onboard COM Port 2

This option specifies the secondary serial port address and IRQ on the motherboard.

OnBoard COM Port 2 Mode

This option specifies the COM 2 port operation mode as Standard, HPSIR or ASKIR.

Onboard Print Port

This option specifies the print port address and IRQ on the motherboard.

Onboard Print Mode

This option print port is ECP/EPP or normal moed.

3.9 Supervisor Password & User Password Setting

The supervisor password is for system and setup utility access and the user password is for the system only.

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

ENTER PASSWORD:

Type the password, up to eight characters, 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.

3.10 IDE HDD Auto Detection

The Enhance IDE features was included in all Award BIOS. Below is a brief description of this feature.

1. Setup Changes

<I> Auto-detection

- BIOS setup will display all possible modes that are supported by the HDD including NORMAL, LBA & LARGE
  .
- If HDD does not support LBA modes, no 'LBA'option will be shown.
- If no of cylinders is less than or equal to 1024, no 'LARGE' option will be show
- Users can select a mode which is appropriate for them.

ROM/PCI/ISA BOPS (2A59GE3A)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								

Select Primary Master Option (N = Skip) : N

OPTION	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
1(Y)	516	1120	16	65535	1119	59	NORMAL
2	516	524	32	0	1119	63	LBA
3	516	560	32	65535	1119	59	LARGE

<II> Standard CMOS Setup

			CYLS	HEADS	PRECOMP	LANDZONE	SECTOR	MODE
Drive C	:	User (516MB)	1120	16	65535	1119	59	NORMAL
Drive D	:	None	0	0	0	0	0	----------

When HDD type is in 'user' type, the "MODE" option will be opened for user to select their own HDD mode.

(2) HDD Modes

The Award BIOS supports 3 HDD modes : NORMAL, LBA & LARGE

NORMAL mode

Generic access mode in which neither the BIOS nor the IDE controller will make any transformations during accessing.

The maximum number of cylinders, head & sectors for NORMAL mode are 1024, 16 & 63

	no. Cyclinder	(1024)
x	no. Head	(16)
x	no. Sector	(63)
x	no. per sector	(512)
	528 Megabytes	

If user set their HDD to NORMAL mode, the maximum accessible HDD size will be 528 Megabytes even though its physical size may be greater than that!

LAB (Logical Block Addressing) mode

This is a HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads & sectors shown in setup may not be the number physically contained in the HDD.

During HDD accessing, the IDE controller will transform the logical address described by sector, head & cylinder number into its own physical address inside the HDD.

The maximum HDD size supported by LBA mode is 8.4 Gigabytes which is obtained by the following formula:

	no. Cyclinder	(1024)
x	no. Head	(255)
x	no. Sector	(63)
x	bytes per sector	(512)
	8.4 Gigabytes	

LARGE mode

Extended HDD access mode supported by Award Software.

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, user do not want LBA). The Award BIOS provides another alternative to support these kinds of HDD!

Example of LARGE mode:

CYLS.	HEADS	SECTOR	MODE
1120	16	59	NORMAL
560	32	59	LARGE

The BIOS tricks DOS (or any other OS) into thinking that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse

Maximum HDD size:

	no. Cyclinder	(1024)
x	no. Head	(32)
x	no. Sector	(63)
x	bytes per sector	(512)
	1 Gigabytes	

(3) Remarks

To support LBA or LARGE BLOCK mode of HDDs, there must be some sofewares involved. All these software is located in the Award HDD Service Routine(INT 13h). It may fail to access the HDD when LBA (LARGE) mode is selected if you are running under an Operating System which replaces the whole INT 13h.

3.11 Power-On Boot

After you have made all the changes to the 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 pressing the <Ctrl>, <Alt>, and <Delete> keys. Upon restarting the system, immediately press <Insert> to load BIOS defaults CMOS.

3.12 BIOS Reference - POST Message

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 are two kind of beep codes in BIOS.

One 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 three short beeps. The other beep code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST.

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.

DISPLAY SWITCH IS SET INCORRECTLY

The 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.

FLOPPY DISK(S) fail (80) symbol 174 \f "Symbol" \s 10→} Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40) symbol 174 \f "Symbol" \s 10→} Floppy Type mismatch.

Hard Disk(s) fail (80) symbol 174 \f "Symbol" \s 10→} HDD reset failed

Hard Disk(s) fail (40) symbol 174 \f "Symbol" \s 10→} HDD controller diagnostics failed.

Hard Disk(s) fail (20) symbol 174 \f "Symbol" \s 10→} HDD initialization error.

Hard Disk(s) fail (10) symbol 174 \f "Symbol" \s 10→} Unable to recalibrate fixed disk.

Hard Disk(s) fail (08) symbol 174 \f "Symbol" \s 10→} Sector Verify failed.

Keyboard is locked out symbol 174 \f "Symbol" \s 10→} Unlock the key.

The BIOS detected that the keyboard is locked. P17 of keyboard controller is pulled low.

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.

Manufacturing POST loop.

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error - System halted.

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail.

BIOS reports the memory test failed if the onboard memory is tested in error.