

PEAK 637

Single Board Computer

User's Guide

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Chapter 1: Specification

The PEAK 637 is a full size Single Board Computer. It applies single Socket 370 FC-PGA based processor, supporting both 66 MHz (Celeron) and 100 MHz (Pentium III) FSB CPU up to 850 M+Hz and future Intel 100MHz FSB CPU to 1GHZ or 1.1GHZ. The memory it can accommodate is 512 MB SDRAM up to 100 MHz.

PEAK 637 will be offered at extraordinary good pricing while also equip with powerful features.

System architecture

- Full size SBC with PCI/ISA Gold finger
- Intel Brand New Socket 370 Celeron/Pentium III with 66/100MHz FSB
- PCI V2.1 complied
- PICMG 1.0 (Rev.2.0) complied

CPU Support

- Intel Celeron/Pentium III (FC-PGA) CPU with 128/256 cache on die up **850MHz, and future Intel 100MHz FSB CPU to 1GHZ or 1.1GHZ**
- Supports streaming SIMD instruction

Main Memory

- Support SDRAM up to 512MB (Max.)
- 168 pin DIMM socket x2

BIOS

- Award System BIOS

Chip Set

- Intel 82440BX AGP set
- 66/100MHz FSB support
- PCI V2.1 complied

On Board RTC

- High precision real time clock/calendar with battery back up

Watchdog Timer

- 1, 2, 4 64 seconds time-out intervals

On Board I/O

- Winbond 83977 Super I/O ON BOARD
- IDE Enhanced IDE mode 4, UltraDMA33, Two 40-pin connectors on the board.
- FDD Supports FDD, One 34-pin connector on the board.
- Serial Port Two serial ports
- COM1 9-pin D-sub connector at the I/O bracket
- COM2 10-pin flat-cable connector on the board
- Parallel Port Bi-directional SPP/EPP/ECP support, One 26-pin connector on board
- Keyboard One PS/2-type connector
- Mouse One PS/2-type connector
- USB Supports 2 USB channels (**share one USB power fuse, 6pin header**)

Dimensions

- 338 mm (D) * 122 mm (W)

Power Requirements

- +5V : 10A (Max.)
- +12V: 500mA (Max.)
- -12V: 50mA (Max.)

Environments

- Operating temperatures: -10°C to 60°C
- Storage temperatures: -40°C to 80°C
- Relative humidity: 5 ~ 95%RH (no-condensing))

Certification

- FCC Class A, CE marking

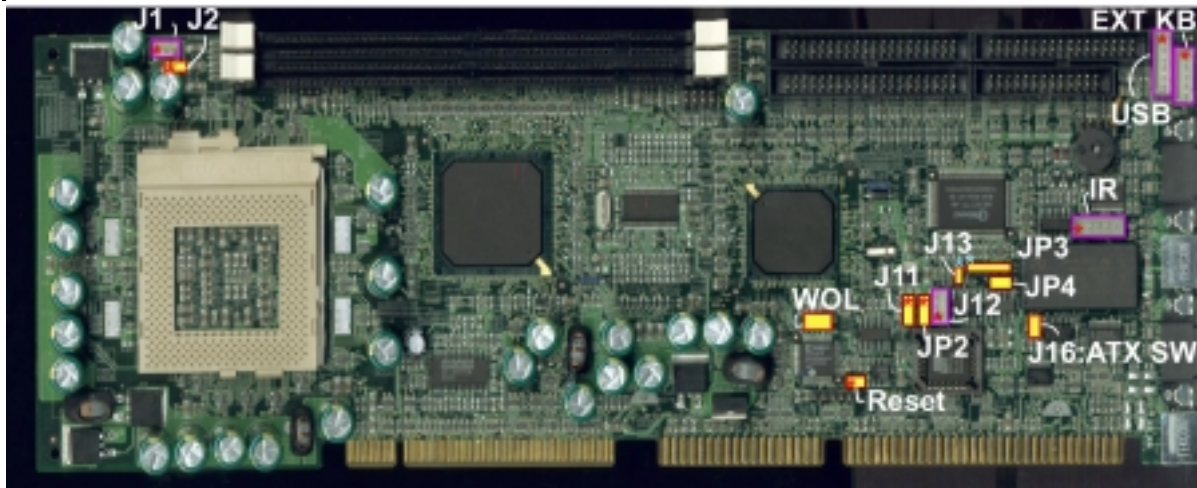
Operating System

- Supports DOS 6.X and above, Windows NT, Windows 95 and 98, WindowsMe, Windows2000,

Chapter 2 Switches and Connectors

This chapter gives the definitions and shows where to locate the positions of switches and connectors.

Connector	Function
J1	CPU Fan Header
J2	SMBUS Connector
J3, J4	DIMM Socket
J8	Primary IDE Connector
J9	Secondary IDE Connector
J10	Reset Connector
J12	ATX Power Connector
J13	IDE Active LED
J15	Parallel Connector
J16	ATX Power Button
J17	FDD Connector
J18	Speaker Connector
J19	USB Connector
J20	External Keyboard Connector
J21	MOUSE Connector
J22	KEYBOARD Connector
J23	COM2
J24	COM1
J25	Wake On LAN Connector
JP3	Key Lock
JP5	IR Connector



■ J16: ATX Power Button

PIN No.	Description
1	+3.3V
2	PWRBT#

■ RTC Clear

	JP4
Enabled	1-2
*Disabled	N/C

■ AT/ATX FUNCTION SELECT

	*AT Function	ATX Function
JP2	*1-2	2-3
J11	*1-2	2-3

■ J10: Reset Connector

PIN No.	Description
1	RESET
2	GND

■ J12 ATX Power Connector

PIN No.	Description
1	5VSB
2	GND
3	Power On#

■ J13: IDE Active LED

PIN No.	Description
1	+5V
2	ACTIVE#

■ J1: CPU Fan Header Connector

PIN No.	Description
1	GND
2	+12V
3	Sense

■ J8 /J9: IDE Connector

PIN No.	Description	PIN No.	Description
1	Reset#	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	N/C
21	DMA REQ	22	Ground
23	IOW#	24	Ground
25	IOR#	26	Ground
27	IOCHRDY	28	Ground
29	DMA ACK	30	Ground
31	Interrupt	32	NC
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS1#	38	HDC CS3#
39	HDD Active#	40	Ground

■ J2: SMBUS Connector

PIN No.	Description
1	SMBCLK
2	SMBDATA

■ J15: Parallel Port Connector

PIN No.	Description	PIN No.	Description
1	Strobe#	2	Data 0
3	Data 1	4	Data 2
5	Data 3	6	Data 4
7	Data 5	8	Data 6
9	Data 7	10	Acknowledge
11	Busy	12	Paper Empty
13	Printer Select	14	Auto Form Feed#
15	Error#	16	Initialize
17	Printer Select IN#	18	Ground
19	Ground	20	Ground
21	Ground	22	Ground
23	Ground	24	Ground
25	Ground	26	N/C

■ J17: FDD Connector

PIN No.	Description	PIN No.	Description
1	Ground	2	Density Select
3	Ground	4	N/C
5	N/C	6	Drate0
7	Ground	8	Index#
9	Ground	10	Motor Enable A#
11	Ground	12	Drive Select B#
13	Ground	14	Drive Select A#
15	Ground	16	Motor Enable B#
17	Ground	18	Direction#
19	Ground	20	Step#
21	Ground	22	Write Data#
23	Ground	24	Write Gate#
25	Ground	26	Track 0#
27	Ground	28	Write Protect#
29	N/C	30	Read Data#
31	Ground	32	Head Side Select#
33	Ground	34	Disk Change#

■ J18: Speaker Connector

PIN No.	Description
1	+5V
2	GND
3	GND
4	Speaker Signal

■ J19: USB Connector

PIN No.	Description
1	+5V
2	USBD0-
3	USBD0+
4	USBD1-
5	USBD1+
6	GND

■ J20: External Keyboard Connector

PIN No.	Description
1	Keyboard Clock
2	Keyboard Data
3	N/C
4	GND
5	+5V

■ J21: Mouse Connector

PIN No.	Description
1	MOUSE DATA
2	N/C
3	GND
4	5V
5	MOUSE CLK
6	N/C

■ J22: Keyboard Connector

PIN No.	Description
1	KBDATA
2	N/C
3	GND
4	5V
5	KBCLK
6	N/C

■ J23/J24: RS232 Connector

PIN No.	Description
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	Ring Indicator (RI)

■ J25: Wake On LAN Connector

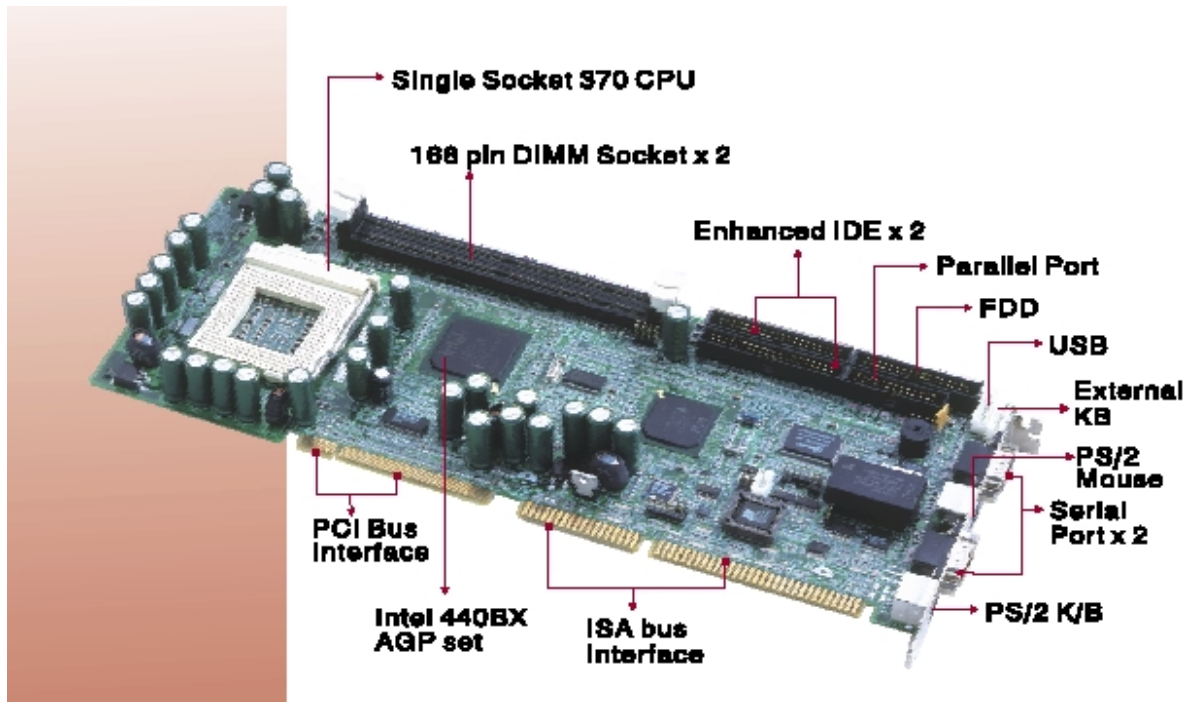
PIN No.	Description
1	5VSB
2	GND
3	PME#

■ JP3: KEYLOCK Connector

PIN No.	Description
1	VCC
2	N/C
3	GND
4	KEYLOCK
5	GND

■ JP5: IR Connector

PIN No.	Description
1	5V
2	IRRXH
3	IRRX
4	GND
5	IRTX



Note: Watch Dog Timer

Watch Dog Timer Working Procedure

The Watch Dog Timer (WDT) is the special hardware device. The WDT function is to monitor the computer system whether work normally, otherwise, it will have some measures to fix up the system.

It contains a receivable SQW signal from RTC, and could set time and can clear the counter function. When time is up, WDT can send Reset or NMI signal.

Operator has to write a value into WDT Configuration Register (Write the control value to the Configuration Port), and clear WDT counter (read the Configuration Port).

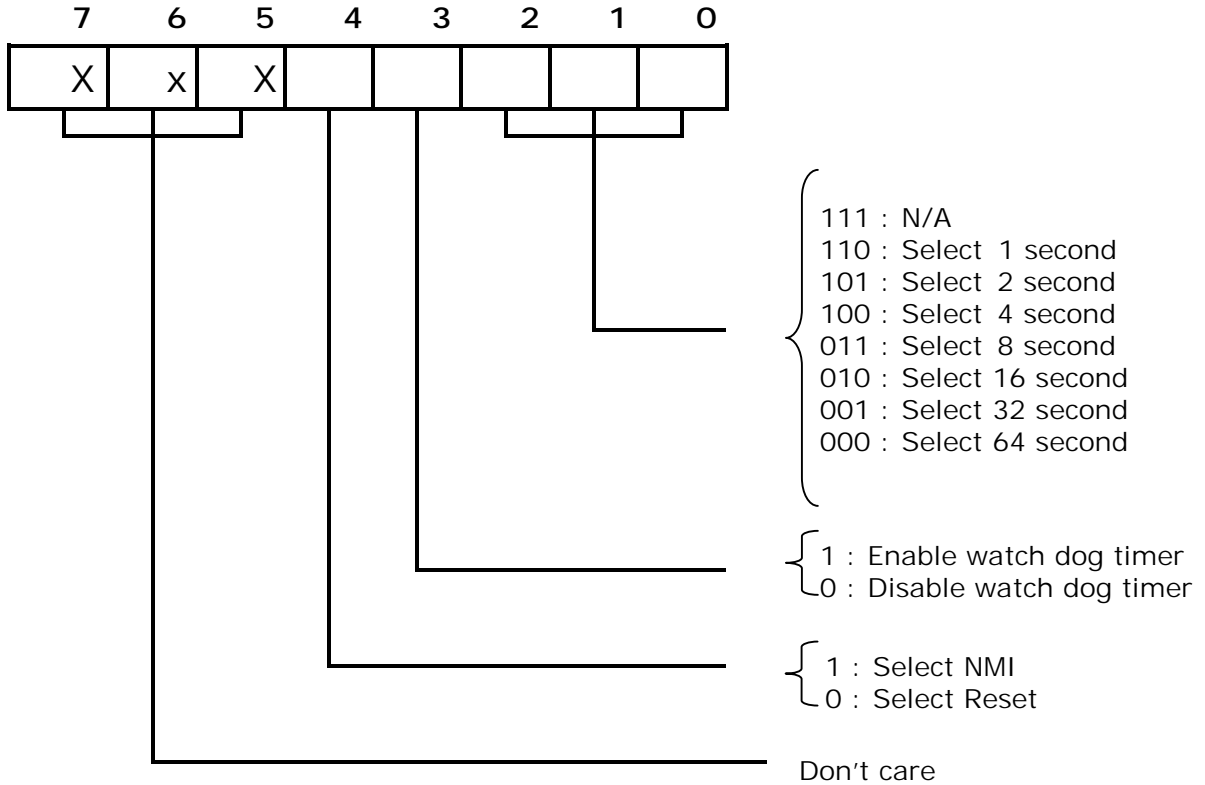
Watch Dog Timer character and function

WDT Configuration port	F2	Default at F2
Watch Dog Timer	Disabled Enabled	1. Default at disabled 2. Enabled for user's programming
WDT Time out active for	Reset NMI	Default at Reset
WDT Active Time	1 sec 2 sec 4 sec 8 sec 16 sec 32 sec 64 sec	Default at 64 sec

Watch Dog Timer Control Register

The Watch Dog Timer Control Register is to control the WDT working mode. You can write the value to WDT Configuration Port.

The following is the Control Register bit definition.



Watch Dog Timer Programming Procedure

- **Power on or reset the system**

The initial value of WDT Control Register (D4~D0) is zero, when power is on or reset the system. The following means the initial value of WDT (00000000b) :

Bit	Value	Mean
4	0	Select Reset
3	0	Disable watch dog timer
2, 1, 0	0 0 0	Select 64 second

- **Initialize the SQW of RTC (set SQW output period=0.5 second)**

To initialize the SQW of RTC processor is to set the SQW signal which is output period=0.5 second. It offers the basic frequency of the WDT counter.

The following is an example of **initializing the SQW signal program** in Intel 8086 assembly language.

```

; (Generate SQW = 0.5 Sec.)
Mov dx, 70h
Mov ax, 0Ah
Out dx, al ; Out port 70h = 0Ah
Mov dx, 71h
Mov ax, 2Fh
Out dx, al ; Out port 71h = 2Fh
; (enable the SQW output)
Mov dx, 70h
Mov ax, 0Bh
Out dx, al ; Out port 70h = 0Bh
Mov dx, 71h
Mov ax, 0Ah
Out dx, al ; Out port 71h = 0Ah

```

• Clear the WDT

Repeatedly read WDT Configuration Port and the interval cannot be longer than the preset time, otherwise, the WDT will generate NMI or Reset signal for the system.

The following is an example of **clear the WDT program** in Intel 8086 assembly language.

```

; ( Clear the WDT)
Mov dx, F2h ;Setting the WDT configuration port
In al, dx

```

Note: Before running WDT, you must clear the WDT. It means to make sure the initial value is zero before enabling the WDT.

• WDT Control Register (Write to WDT configuration port)

You can set the WDT Control Register to control the WDT working mode. The initial value of the WDT Control Register is as the following.

```

; (Setting the WDT Control Register as AL)
Mov al, 0h ; Setting initial value = 0 for the WDT Control Register

```

You must plan the option of following:

1. Select NMI or Reset: decide D4 value in F2.

i.e. Setting D4 = 0, then it select Reset

```
AND al, 11101111b ; Select Reset
```

i.e. Setting D4 = 1, then it select NMI

```
OR al, 00010000b ; Select NMI
```

2. Select the time-out intervals of WDT (decide the values of D2, D1, D0 in F2)
Example: D2~D0 = 0, the time-out interval will be 64 sec.

```
AND al, 11111000b ; Setting the time-out interval as 64 sec.
```

3. Enable or Disable the WDT (decide D3 value in F2)

i.e. D3=0, Disable the WDT

```
AND al, 11110111b ; Disable the WDT
```

i.e. D3=1, Enable the WDT

```
OR al, 00001000b ; Enable the WDT
```

After finishing the above setting, you must be output for the Control Register's value to the WDT Configuration Port. Then WDT will start according to the above setting.

<pre>MOV dx, F2h ; Setting WDT Configuration Port OUT dx, al ; Output the Control Register Value</pre>
--

- You should build in a mechanism in the program to continue to read the WDT Configuration Port for clearing WDT before the time out.

Chapter 3 AWARD BIOS Setup

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM) so that it retains the Setup information when the power is turned off.

Note: The picture in this document is subject to change without prior notice

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 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 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
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the Setup default , only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

Getting Help

Main Menu

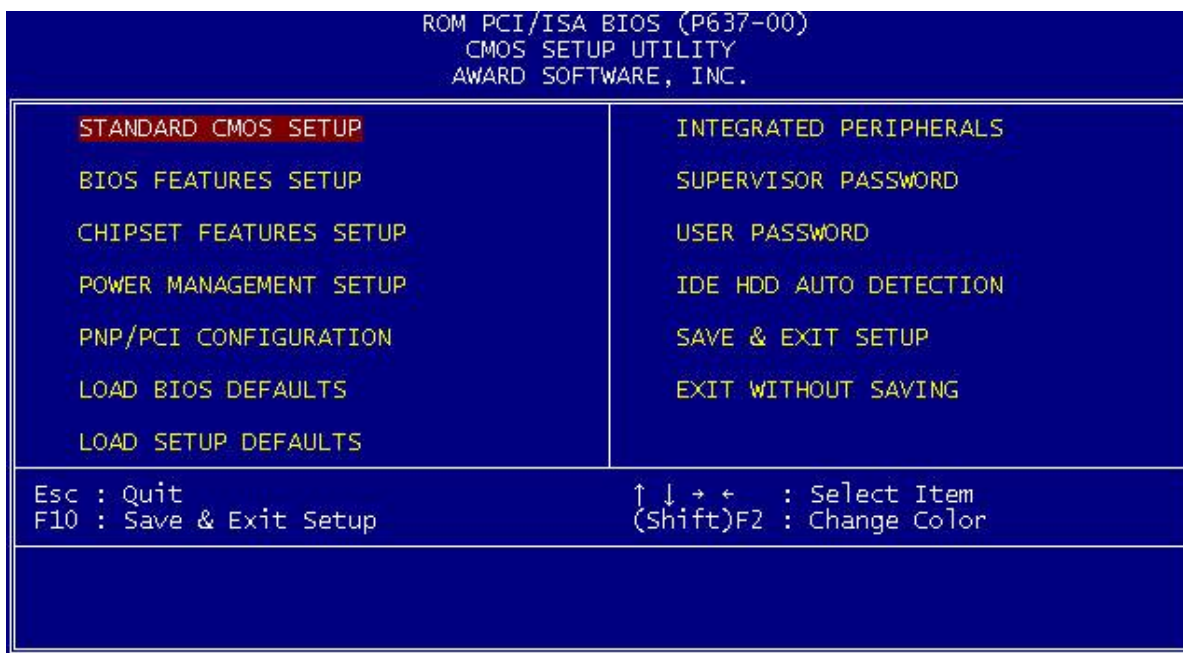
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

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 <F1> or <Esc>.

The Main Menu

Once you enter Award 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..

PNP/PCI Configuration

This category specifies the assignment of all the IRQ's and DMA's

Load BIOS defaults

BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burn into the ROM.

Load setup defaults

Chipset defaults indicates the values required by the system for the maximum performance. The OEM manufacturer may change to defaults through MODBIN before the binary image burn into the ROM.

Integrated Peripherals

This category allows you to set up all the on board I/O controllers like IDE, SCSI, FDC, etc.,

Supervisor/User Password

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

IDE HDD auto detection

Automatically configure hard disk parameters.

Save & exit setup

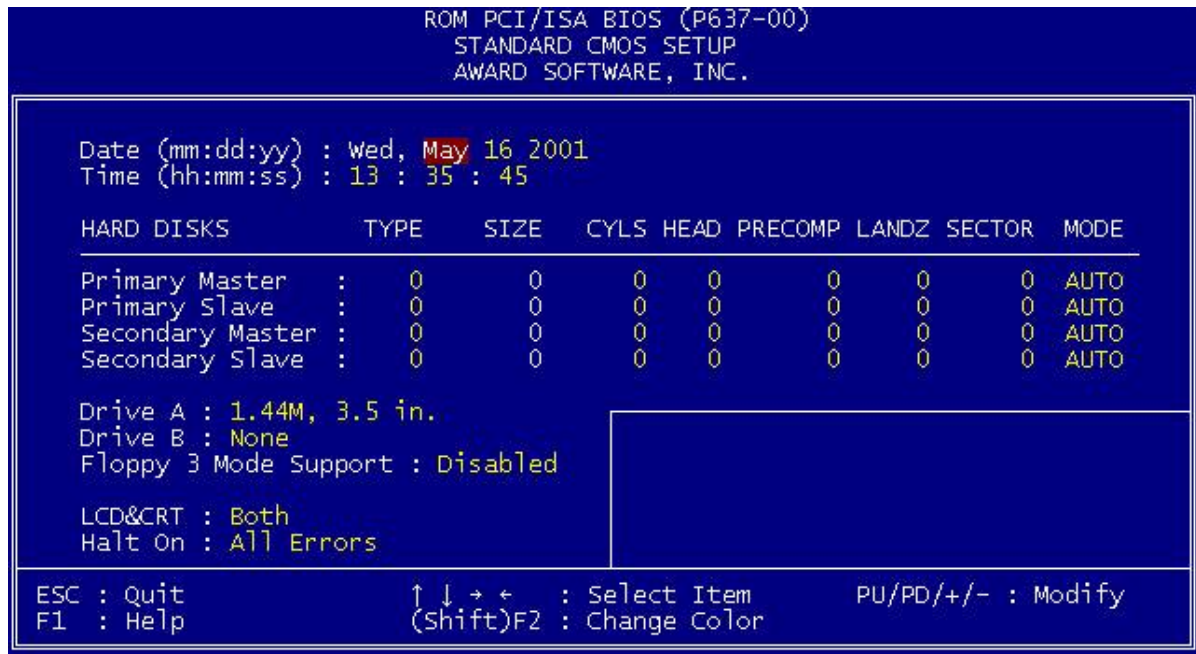
Save CMOS value changes to CMOS and exit setup.

Exit without save

Abandon all CMOS value changes and exit setup.

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>. Press <F3> to show the calendar.

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, depend on the year of BIOS

Time

The time format is <hour> <minute> <second>, which accepts both function key or numerical key. 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 categories identify the types of 2 channels that have been installed in the computer.

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

Floppy 3 Mode Support:

The category determines whether the floppy 3 mode support is enabled or not.

LCD&CRT:

On board VGA select display type.

Type	Function
CRT	Boot from CRT only
LCD	Boot on LCD only
BOTH	Boot both LCD and CRT
AUTO	Boot on CRT or LCD

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 (Power On Self Test) of the BIOS.

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.

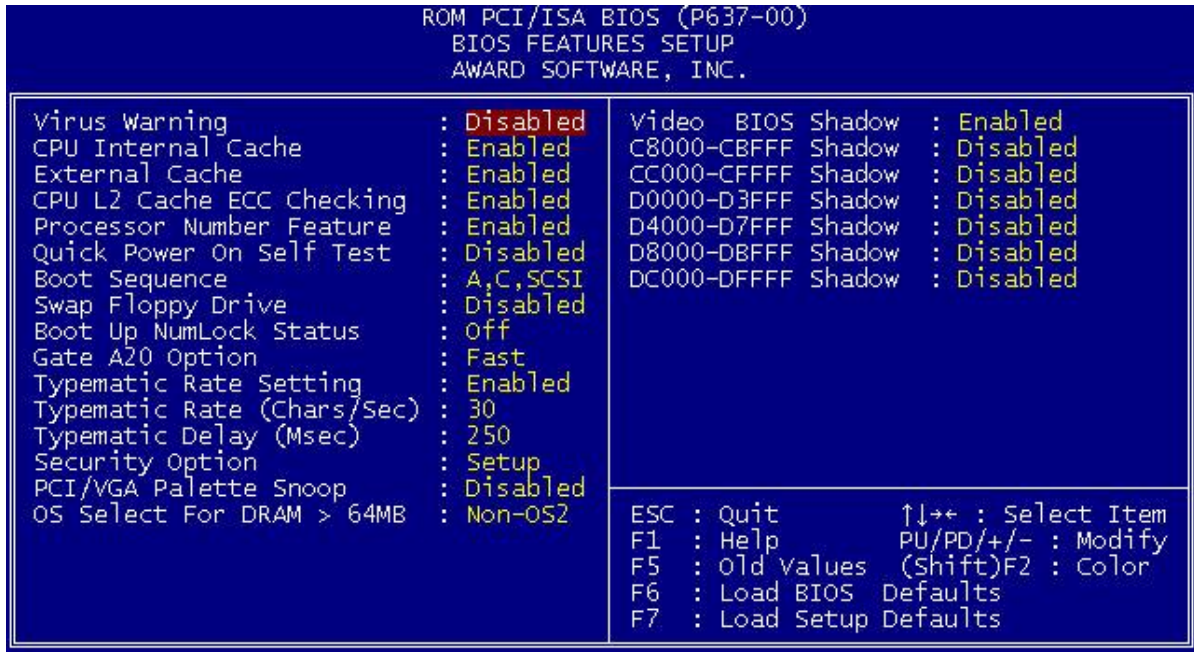
Other Memory

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.

Total Memory

System total memory is the sum of basic memory, extended memory, and other memory.

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/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is Enabled. If your CPU has no Internal Cache then this item "CPU Internal Cache" will not be shown.

Enabled	Enable cache
Disabled	Disable cache

CPU L2 Cache ECC Checking

This category could turn on the ECC of Pentium III L 2 Cache or just disable it.

Enabled	Enable L2 ECC
Disabled	Disable L2 ECC

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 Enabled, 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.

A, C, SCSI	Default
C, A, SCSI	
C, CDROM, A	
CDROM, C, A	
D, A, SCSI	
E, A, SCSI	
F, A, SCSI	
SCSI, A, C	
SCSI, C, A	
C only	
LS/ZIP, C	

Swap Floppy Drive

This item allows you to determine whether enable the swap floppy drive or not.
The choice: Enabled/Disabled.

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 720K, 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

Gate A20 Option

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	Default : Fast. The A20 signal is controlled by Port 92 or chipset specific method.

Typematic Rate Setting

This determines 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 keyboard.

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 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.

PCI/VGA Palette Snoop

Enable PCI controller support PCI/VGA palette snoop or not, if enabled, VGA cycle will transfer to ISA bus. If disabled, VGA cycle only transfer to PCI bus.

OS Select for DRAM 64MB

This segment is specifically created for OS/2 when DRAM is larger than 64MB. If your operating system is OS/2 and DRAM used is larger the 64MB, you have to select "OS 2", otherwise, non-OS2, default is NON-OS2.

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/D8000 - DFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte or 32K byte per/unit and the size depends on chipset.

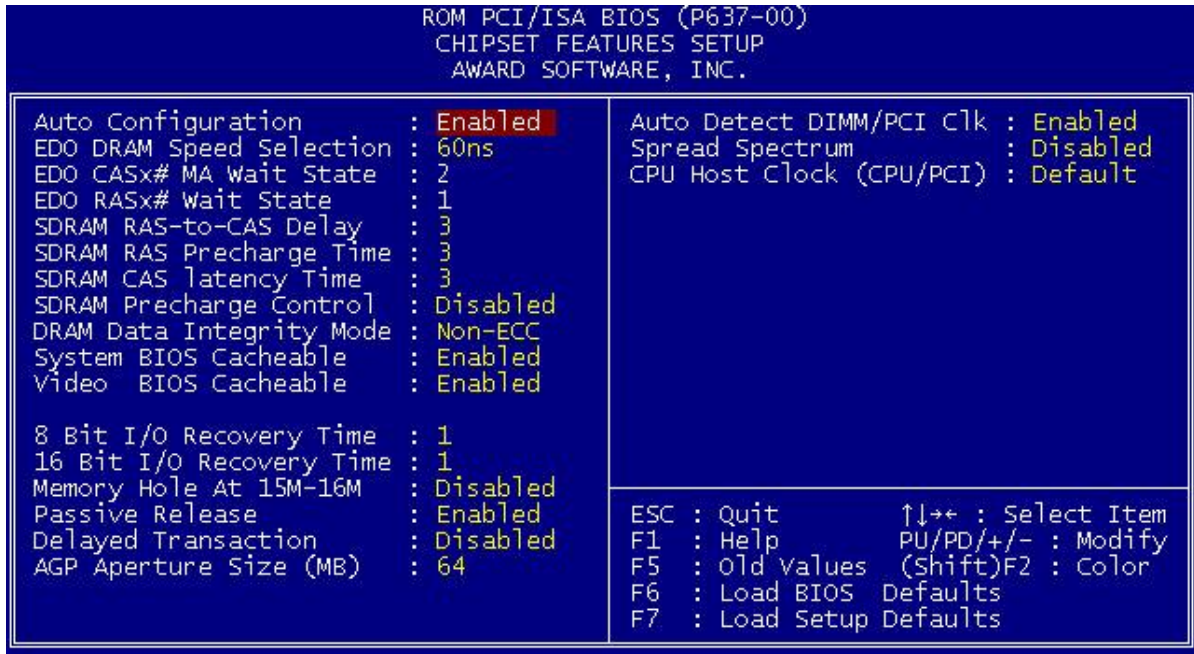
Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

Note:

1. For C8000-DFFFF option-ROM on PCI BIOS , BIOS will automatically enable the shadow RAM. User does not have to select the item.
2. IDE second channel control:
Enable : enable secondary IDE port and BIOS will assign IRQ15 for this port. Disable: disable secondary IDE port and IRQ15 is available for other device. The item is optional only for PCI BIOS.
3. Some of the sound cards have an onboard CD-ROM controller which uses IDE Secondary Port. In order to avoid PCI IDE conflict, the IDE secondary channel control has to select "disable" then CD-ROM can work.

Chipset Features Setup Menu

Since the features in this section are related to the chipset in the CPU board and all are optimized, you are not recommended to change the default settings in the setup table, unless you know very detailed of the chipset features.



Auto Configuration

Auto Configuration selects predetermined optional values of chipset parameters. When Disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled. The Choice: Enabled, Disabled.

EDD DRAM Speed Selection

The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slow memory.

50ns	DRAM Timing Type
60ns	DRAM Timing Type

EDO CASx# MA Wait State

You could select the timing control type of EDO DRAM CAS MA (memory address bus). The Choice: 1, 2.

EDO RASx# Wait State

You could select the timing control type of EDO DRAM RAS MA (memory address bus). The Choice: 1, 2.

SDRAM RAS-to-CAS Delay

You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The Choice: 2, 3.

SDRAM RAS Precharge Time

Defines the length of time for Row Address Strobe is allowed to precharge. The Choice: 2, 3.

SDRAM CAS latency Time

You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

DRAM Data Integrity Mode

Select Parity or ECC (ERROR-CORRECTING CODE), according to the type of installed DRAM.

System Bios Cacheable

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result

Enabled	BIOS access cached
Disabled	BIOS access not cached

Video BIOS Cacheable

Select Enable allows caching of the video BIOS ROM AT C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result

Enabled	Video BIOS access cached
Disabled	Video BIOS access not cached

Video RAM Cacheable

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks.

16 Bit I/O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks

Memory Hole At 15M-16M.

In order to improve performance, certain space in memory can be reserved for ISA cards.. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported

Passive Release

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM. The Choice: Enabled, Disabled.

Delay Transaction

The chipset has an embeded 32-bit posted write buffer to support delay transactions cycles.. Select Enabled to support compliance with PCI specification version 2.1

AGP Aperture Size (MB)

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.
The choice: 4, 8, 16, 32, 64, 128, 256

Auto Detect DIMM/PCI Clk

When enabled, this item will auto detect if the DIMM and PCI socket have devices and will send clock signal to DIMM and PCI devices. When disabled, it will send the clock signal to all DIMM and PCI socket.
The choice: Enabled, Disabled.

Spread Spectrum

This item allows you to enable/disable the spread spectrum modulate.
The choice: Enabled, Disabled.

CPU Host Clock (CPU / PCI)

This item allows you to slightly adjust the clock frequency.
The choice: 66MHZ~100MHZ.

Power Management Setup

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

```

ROM PCI/ISA BIOS (P637-00)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function          : Disabled
Power Management      : User Define
PM Control by APM     : Yes
Video Off After       : Standby
Doze Mode             : Disable
Standby Mode          : Disable
Suspend Mode          : Disable
HDD Power Down        : Disable

Throttle Duty Cycle   : 62.5%
PCI/VGA Act-Monitor   : Disabled
Soft-Off by PWR-BTTM : Instant-Off
IRQ 8 Break Suspend   : Disabled

** Reload Global Timer Events **
IRQ[3-7,9-15],NMI    : Disabled
Primary IDE 0         : Disabled
Primary IDE 1         : Disabled
Secondary IDE 0       : Disabled
Secondary IDE 1       : Disabled
Floppy Disk           : Disabled
Serial Port           : Enabled
Parallel Port         : Disabled

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

```

ACPI Function

This item allows you to Enable/Disable the Advanced Configuration and Power Interface (ACPI).
The Choice: Enabled, Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Disabled (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Define	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.

If the Max. Power Saving is not enabled, this will be preset to *No*.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.

DPMS	Initial display power management signaling.
------	---

Video Off After

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the systems enters the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode

1. Disabled	System will never enter STANDBY 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 entering STANDBY mode. if any item defined in (J) is enabled & active, STANDBY timer will be reloaded

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Throttle Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time.

You may select the percent of time that the clock runs.

The Choice: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%

PCI/VGA Active Monitor

When Enabled, any video activity restarts the global timer for Standby mode.

The Choice: Enabled, Disabled.

PowerOn by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

The Choice: Enabled, Disabled.

IRQ 8 Break Suspend

You can Enable or Disable monitoring of IRQ8 so it does not awaken the system from Suspend mode. The

Choice: Enabled, Disabled.

Reload Global Timer Events

When Enabled, an event occurring on each device listed below restarts the global time for Standby mode.

IRQ[3 -7, 9-15], NMI	Primary IDE 0	Primary IDE 1
Secondary IDE 0	Secondary IDE 1	Floppy Disk
Serial Port	Parallel Port	

PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or **P**eripheral **C**omponent **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

```

ROM PCI/ISA BIOS (P637-00)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed      : Yes
Resources Controlled By : Manual
Reset Configuration Data : Disabled

IRQ-3 assigned to : PCI/ISA PnP
IRQ-4 assigned to : PCI/ISA PnP
IRQ-5 assigned to : PCI/ISA PnP
IRQ-7 assigned to : PCI/ISA PnP
IRQ-9 assigned to : PCI/ISA PnP
IRQ-10 assigned to : PCI/ISA PnP
IRQ-11 assigned to : PCI/ISA PnP
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : PCI/ISA PnP
IRQ-15 assigned to : PCI/ISA PnP
DMA-0 assigned to : PCI/ISA PnP
DMA-1 assigned to : PCI/ISA PnP
DMA-3 assigned to : PCI/ISA PnP
DMA-5 assigned to : PCI/ISA PnP
DMA-6 assigned to : PCI/ISA PnP
DMA-7 assigned to : PCI/ISA PnP

Assign IRQ For VGA : Enabled
Slot 1 Use IRQ No. : Auto
Slot 2 Use IRQ No. : Auto
Slot 3 Use IRQ No. : Auto
Slot 4 Use IRQ No. : Auto

Used MEM base addr : N/A

Assign IRQ For USB : Disabled

PCI Latency Timer(CLK): 32

ESC : Quit      ↑↓+* : Select Item
F1  : Help      PU/PD/+/- : Modify
F5  : Old Values (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults

```

PNP OS Installed

Select Yes if the system operating environment is Plug-and-Play aware (e.g.Windows 95). The Choice: Yes and No.

Resource Controlled by

The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

The choice: *Auto* and *Manual*.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot. The choice: *Enabled* and *Disabled*.

Assing IRQ For VGA

Assing IRQ for VGA : Enabled

Not assign IRQ for VGA : Disabled

IRQ n Assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

Slot 1 use IRQ No

Assign IRQ to slot 1, 2, 3, 4 by User or Auto.

Used MEM base addr

Select a base address for the memory area used by any peripheral that requires high memory.

The Choice: C800, CC00, D000, D400, D800, DC00, N/A.

Assing IRQ For USB

Assing IRQ for USB : Enabled

Not assign IRQ for USB : Disabled

PCI Latency Timer (CLK)

Adjust PCI Latency Timer by users.

Integrated Peripherals

```

ROM PCI/ISA BIOS (P637-00)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode      : Enabled
IDE Primary Master PIO  : Auto
IDE Primary Slave PIO   : Auto
IDE Secondary Master PIO : Auto
IDE Secondary Slave PIO : Auto
IDE Primary Master UDMA : Auto
IDE Primary Slave UDMA  : Auto
IDE Secondary Master UDMA : Auto
IDE Secondary Slave UDMA : Auto
On-Chip Primary PCI IDE : Enabled
On-Chip Secondary PCI IDE : Enabled
USB Keyboard Support    : Disabled
Init Display First     : PCI Slot

KBC input clock        : 8 MHz
Onboard FDC Controller : Enabled
Onboard Serial Port 1  : 3F8/IRQ4
Onboard Serial Port 2  :
UART Mode Select       :
UART2 Duplex Mode      : Half

RxD , TxD Active      : Hi,Lo
IR Transmittiion delay : Enabled
Onboard Parallel Port  :
Parallel Port Mode     :
ECP Mode Use DMA       : 3
EPP Mode Select        : EPP1.7

ESC : Quit          ↑↓+* : Select Item
F1  : Help          PU/PD/+/- : Modify
F5  : Old Values   (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults

```

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Enabled	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support. The Choice: Auto, Disabled

On-Chip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

USB Keyboard support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The Choice: Enabled, Disabled.

Init Display First

For user to select to init AGP or PCI VGA first

KBC input clock

Set the frequency for the keyboard controller input clock

Onboard FDD Controller

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The Choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address. The Choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART Mode Select

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The Choice: IrDA 1.0, Standard, ASKIR, HPSIR.

RxD, TxD Active

This item allows you to determine the active of RxD, TxD. The choice: "Hi,Hi", "Lo, Lo", "Lo, Hi", "Hi, Lo"

IR Transmission delay

This item allows you to enable/disable IR transmission delay. The choice: Enabled, Disabled.

Onboard Parallel Port

This item allows you to determine access onboard parallel port controller with which I/O address. The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled.

Parallel Port Mode

Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode.

The choice: SPP, ECP+EPP1.7, EPP1.7+SPP, EPP1.9+SPP, ECP, ECP+EPP1.9, and Normal.

ECP Mode Use DMA

Select a DMA channel for the port.

The choice: 3, 1.

EPP Mode Select

Select EPP port type 1.7or 1.9

The choice: EPP1.7, 1.9

Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

supervisor password : can enter and change the options of the setup menus.
 user password : just can enter but do not have the right to change the options of the setup menus.

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

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 4). If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

IDE HDD Auto Detection

The enhance IDE features was included in all Award BIOS. Will auto detect the HDD type.

Note:

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

Appendix: 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.

Appendix: BIOS Reference - POST Message

During the Power On Self Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message.

If a message is displayed, it will be accompanied by:

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

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. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. 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.

EISA Configuration Checksum Error PLEASE RUN EISA CONFIGURATION UTILITY

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA Configuration Is Not Complete PLEASE RUN EISA CONFIGURATION UTILITY

The slot configuration information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

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.

Invalid EISA Configuration PLEASE RUN EISA CONFIGURATION UTILITY

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

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. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

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.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT ...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Appendix: BIOS Reference - POST Codes

Note: **ISA POST codes are output to port address 80h.**

POST (hex)	Description
C0	1. Turn off OEM specific cache, shadow... 2. Initialize all the standard devices with default values standard devices includes: -DMA controller (8237) -Programmable Interrupt Controller (8259) -Programmable Interval Timer (8254) -RTC chip
C1	Auto-detection of onboard DRAM & Cache
C3	1. Test system BIOS checksum 2. Test the first 256K DRAM 3. Expand the compressed codes into temporary DRAM area including the compressed System BIOS & Option ROMs
C5	Copy the BIOS from ROM into E0000-FFFFFF shadow RAM so that POST will go faster
01-02	Reserved
03	Initialize EISA registers (EISA BIOS only)
04	Reserved
05	1. Keyboard Controller Self-Test 2. Enable Keyboard Interface
06	Reserved
07	Verifies CMOS's basic R/W functionality
BE	Program defaults values into chipset according to the MODBINable Chipset Default Table
09	1. Program the configuration register of Cyrix CPU according to the MODBINable Cyrix Register Table 2. OEM specific cache initialization (if needed)

0A	<ol style="list-style-type: none"> 1. Initialize the first 32 interrupt vectors with corresponding Interrupt handlers Initialize INT no from 33-120 with Dummy(Suprious) Interrupt Handler 2. Issue CPUID instruction to identify CPU type 3. Early Power Management initialization (OEM specific)
----	---

This POST code is for boot block

POST (hex)	Description
C0	<ol style="list-style-type: none"> 1. Turn off OEM specific cache, shadow... 2. Initialize all the standard devices with default values standard devices includes: -DMA controller (8237) -Programmable Interrupt Controller (8259) -Programmable Interval Timer (8254) -RTC chip
C1	Auto-detection of onboard DRAM & Cache
C3	Checking checksum of compressed code
C5	Copy the BIOS from ROM into E0000-FFFFFF shadow RAM so that POST will go faster
01	Clear base memory 0~640K
0C	Initial interrupt vector 00-1FH
0D	Initial ISA VGA
41H	Enable FDD and detect media type
FFH	Boot from FDD

BIOS Default Drive Table

This is a current list of the drive type table contained in Setup.

Type	Size (MB)	Cylinders	Heads	Sectors	Write Precomp	Land Zone	Example Model
1	10	306	4	17	128	305	TEAC SD510, MMI 112, 5412
2	20	615	4	17	300	615	Seagate ST225, ST4026
3	30	615	6	17	300	615	
4	62	940	8	17	512	940	
5	46	940	6	17	512	940	
6	20	615	4	17	None	615	Seagate ST125, Tandon TM262
7	30	462	8	17	256	511	
8	30	733	5	17	None	733	Tandon TM 703
9	112	900	15	17	None	901	
10	20	820	3	17	None	820	
11	35	855	5	17	None	855	
12	49	855	7	17	None	855	
13	20	306	8	17	128	319	Disctron 526, MMI M125
14	42	733	7	17	None	733	
15		Reserved					
16	20	612	4	17	0	663	Microscience HH725, Syquest 3250, 3425
17	40	977	5	17	300	977	
18	56	977	7	17	None	977	
19	59	1024	7	17	512	1023	
20	30	733	5	17	300	732	

21	42	733	7	17	300	732	
22	30	306	5	17	300	733	Seagate ST4038
23	10	977	4	17	0	336	
24	40	1024	5	17	None	976	Seagate ST4051
25	76	1224	9	17	None	1023	Seagate ST4096
26	71	1224	7	17	None	1223	Maxtor 2085
27	111	1224	11	17	None	1223	Maxtor 2140, Priam S14
28	152	1024	15	17	None	1223	Maxtor 2190, Priam S19
29	68	1024	8	17	None	1023	Maxtor 1085, Micropolis 1325
30	93	918	11	17	None	1023	Maxtor 1105 1120, 4780
31	83	925	11	17	None	1023	Maxtor 1170
32	69	1024	9	17	None	926	CDC 9415
33	85	1024	10	17	None	1023	
34	102	1024	12	17	None	1023	
35	110	1024	13	17	None	1023	
36	119	1024	14	17	None	1023	
37	17	1024	2	17	None	1023	
38	136	1024	16	17	None	1023	
39	114	918	15	17	None	1023	Maxtor 1140, 4380
40	40	820	6	17	None	820	Seagate ST251
41	42	1024	5	17	None	1023	Seagate 4053 Miniscribe 3053/6053
42	65	1024	5	26	None	1023	Miniscribe 3053/6053 RLL
43	40	809	6	17	None	852	Miniscribe 3650
44	61	809	6	26	None	852	Miniscribe 3675 RLL
45	100	776	8	33	None	775	Conner CP3104
46	203	684	16	38	None	685	Conner CP3204
User							