

Award BIOS Setup Program

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM so that it can retain the setup information, even when the power is turned off.

When you turn on or reboot the system, press the Delete key to enter the Award BIOS setup program. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item and press enter to make changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the left bottom edge of the screen.

ROM PCI / ISA BIOS (2A69KC39)		
CMOS SETUP UTILITY		
AWARD SOFTWARE, INC.		
<hr/>		
STANDARD CMOS SETUP	SeePU & HARDWARE MONITORING	
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS	
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD	
POWER MANAGEMENT SETUP	USER PASSWORD	
PNP/PCI CONFIGURATION	IDE HDD AUTO DETECTION	
LOAD SETUP DEFAULTS	SAVE & EXIT SETUP	
	EXIT WITHOUT SAVING	
<hr/>		
ESC : Quit	↑↓→← : Select Item	
F10 : Save & Exit Setup	(Shift) F2 : Change Color	
<hr/>		
Time, Date, Hard Disk Type...		

Figure3-1 Setup Program Initial Screen

3-1 Standard CMOS Setup

The Standard CMOS Setup allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot-up error signaling. This configuration menu should be changed when installing a mainboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure3-1) to display the following screen. When a field is highlighted, on-line help information is displayed on the left bottom edge of the screen.

ROM PCI / ISA BIOS (2A69KC39)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm : dd : yy): Fri, Sep 19 1998
 Time (hh : mm : ss): 9: 14: 43

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	Auto
Primary Slave	: Auto	0	0	0	0	0	0	Auto
Secondary Master	: Auto	0	0	0	0	0	0	Auto
Secondary Slave	: Auto	0	0	0	0	0	0	Auto

Drive A : 1.44M, 3.5 in.
 Drive B : None

Video : EGA/VGA
 Halt On : All Errors

Base Memory : 640K
 Extended Memory : 15360K
 Other Memory : 384K

Total Memory : 16384K

ESC : Quit
↑↓→← : Select Item
PU/PD/+/- : Modify

F1 : Help
(Shift) F2 : Change Color

Figure 3-2 Standard CMOS Setup Screen

Date/Time

Set the date and time. Do not skip this function as all of your timed events such as power management, saving files, etc. are based on this timer.

Hard Disk Setup (Primary/Secondary; Master/Slave)

This category identifies up to four IDE hard disk drives that have been installed in the computer. This section does not show information on other IDE devices such as CD-ROM drives or other hard drive types such as SCSI drives.

Type (Auto/User/None): Use the fields under the Type column to determine the method you will use to configure the IDE devices. If you choose Auto, BIOS will automatically detect and make optimal settings for most IDE hard drives.



The mainboard manufacturer recommends that you choose Auto for all drives.

Choose User to define your own drive type manually. You must enter values indicated in the table below into each drive parameter field. This information should be included in the documentation from your hard disk vendor or system manufacturer:

TYPE	Setting method
CYLS	Number of cylinders
HEAD	Number of heads
PRECOMP	Write precompensation cylinder
LANDZ	Landing zone
SECTOR	Number of sectors
MODE	Mode type

Table 4-1 Hard Disk Drive Parameters

Cyls/Head/Sector: The number of Cylinders, Heads, and Sectors can usually be found written on the top of the hard disk. If you have a relatively new hard drive, entering this information alone is usually sufficient for normal hard disk operation. The hard disk will not work properly if you enter improper information for these categories.

Precomp: Older hard drives (i.e., MFM or RLL drives) have the same number of sectors per track at the innermost tracks as at the outermost tracks. Thus, the data density at the innermost tracks is higher and the bits are lying closer together. Even though the physical size of a sector gets progressively smaller as the track diameter diminishes, each sector must still hold 512 bytes. Write precompensation circuitry compensates for the difference in sector size by boosting the write current for inner track sectors.

Landz: This defines the address of the landing zone and is only used for older hard drives which do not have an auto-parking feature.

Mode: If the Type value is not None for any device, you must set the Mode value for that device. There are four different Mode values: Auto, Normal, Large, and LBA.


Auto - BIOS detects and enters the IDE drive type during bootup.

Normal - for IDE drives that meet the old IDE specification which support a maximum capacity of 528MB (1024 cylinders, 16 heads, and 63 sectors).

Large - for IDE drives that do not support LBA and have more than 1024 cylinders. Try this setting if your hard disk does not operate properly with the LBA setting. Large mode is not supported by all operating systems, i.e., only certain versions of DOS support large mode.

LBA - (Large/Logical Block Addressing) With LBA, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. This mode is for drives with greater than 1024 cylinders and between 528MB and 8.4GB in size. This protocol is the current common standard.

Choose None for Type if there are no IDE HDD devices in your system.

-  You can use the IDE HDD Auto Detection function to auto detect your hard drive parameters. Using this function will automatically insert the parameters discussed under Hard Disk Setup and will indicate User for the Field value. Please see the IDE HDD Auto Detection Section in this chapter for more information.

Floppy Disk Drives

Choose the memory capacity and disk size that corresponds with that of your floppy disk drive(s). Enable the Floppy 3 Mode Support setting for Japanese 3-mode floppy drives.

Video

Select the type of video adapter present in your system. You can ignore this setting if you are using a VGA monitor since VGA BIOS automatically configures this setting.

Halt

When the system is powered on, BIOS performs a series of diagnostic tests called POST (Power On Self Test). This function stops the computer if BIOS detects a hardware error. You can tell BIOS to halt on all errors, no errors, or not to halt on specific errors.

3-2 BIOS Features Setup

By choosing the BIOS Features Setup option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

ROM PCI / ISA BIOS (2A69KC39)		
BIOS FEATURES SETUP		
AWARD SOFTWARE, INC.		
Anti-Virus Protection	: Disabled	Video BIOS Shadow : Enabled
CPU Internal Cache	: Enabled	C8000 - CBFFF Shadow : Disabled
External Cache	: Enabled	CC000 - CFFFF Shadow : Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000 - D3FFF Shadow : Disabled
Processor Number Feature	: Enabled	D4000 - D7FFF Shadow : Disabled
Quick Power On Self Test	: Enabled	D8000 - DBFFF Shadow : Disabled
Boot Sequence	: A,C,SCSI	DC000 - DFFFF Shadow : Disabled
Swap Floppy Drive	: Disabled	
Boot Up Floppy Seek	: Enabled	
Boot Up NumLock Status	: On	
Typematic Rate Setting	: Disabled	
Typematic Rate (Chars/Sec)	: 6	
Typematic Delay (Msec)	: 250	
Security Option	: Setup	
PCI/VGA Palette Snoop	: Disabled	
MPS Version Control For OS	: 1.4	
OS Select (For DRAM>64MB)	: Non-OS2	
HDD S.M.A.R.T. capability	: Disabled	
ESC : Quit		↑↓→← : Select Item
F1 : Help		PU/PD/+/- : Modify
F5 : Old Values		(Shift) F2 : Color
F7 : Load Setup Defaults		

Figure 3-3 BIOS Feature Setup Screen

A. VIRUS PROTECTION

Anti-Virus Protection

This is an anti-virus code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. The anti-virus code loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. This function employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

B. CACHE CONTROL

CPU Internal Cache/External Cache

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level

2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

CPU L2 Cache ECC Checking

Enable this function to perform ECC (Error Check and Correct) on the CPU's L2 SRAM. ECC detects and corrects single-bit errors while it only detects double bit errors. Certain SDRAM modules also have ECC capability. For more information on SDRAM, see Section 2-5 in this manual. If you are using a 333MHz or higher CPU, this function must be enabled.

C. BOOT UP FEATURES

After turning on the system, BIOS will perform a series of device initializations and diagnostic tests discussed below.

Quick Power On Self Test (POST)

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS saves time by skipping some items during POST.

Boot Sequence

This option sets the sequence of drives BIOS attempts to boot from after POST completes. BIOS will search these drives for an operating system.

Swap Floppy Drive

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not include booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

Boot up Floppy Seek

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

Boot Up NumLock Status

This function defines the keyboard's numberpad as number keys or arrow keys.

D. KEYBOARD INTERFACE

Typematic Rate Setting

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

Typematic Rate (Chars/Sec)

The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.

Typematic Delay (Msec)

The typematic delay sets how long after you press a key that a character begins repeating.

E. Security Option

The Supervisor and/or User Password functions shown in Figure3-1 must be set to take advantage of this function. See Section 3-8 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

F. PCI/VGA Palette Snoop

Some non-standard VGA cards or MPEG video cards may not show colors properly. Setting this function to Enabled can correct this problem.

G. MPS Version Control for OS

MPS *Multi Processor Support* let you select between 1.1 and 1.4 version controller for OS.

H. OS Select (For DRAM > 64MB)

If your system's DRAM is larger than 64MB and you are running OS/2, select OS/2 as the item value. Otherwise, set the item value to Non-OS/2 for all other operating systems.

I. HDD S.M.A.R.T. Capability

S.M.A.R.T. or Self-Monitoring, Analysis, and Reporting Technology enables a drive's internal status to be monitored through diagnostic commands. Both your hard drive must support this capability and this function must be enabled in order to take advantage of this function. See your hard drive literature for more information.

J. Shadow Memory

Software such as system BIOS, video BIOS, SCSI BIOS, etc that resides in ROM (Read Only Memory) chips is called firmware. Shadowing of firmware occurs when BIOS is copied to RAM address C0000h through DFFFFh. Video BIOS loads into the C0000-C7FFF memory area when video shadowing is enabled. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

Shadowing improves the firmware's performance because the firmware can be read by the CPU through the 16- or 32-bit DRAM bus as opposed to the 8-bit XT bus. However, shadowing also results in reducing the amount of high memory (640 KB to 1 MB) for loading device drivers. Shadowing is used mostly for ROM chips on ISA cards and not for PCI cards. Shadowing and playing games at the same time may result in system instability as some games access the RAM memory area being shadowed.

3-3 Chipset Feature Setup

By choosing the Chipset Feature Setup option from the CMOS SETUP UTILITY menu(Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

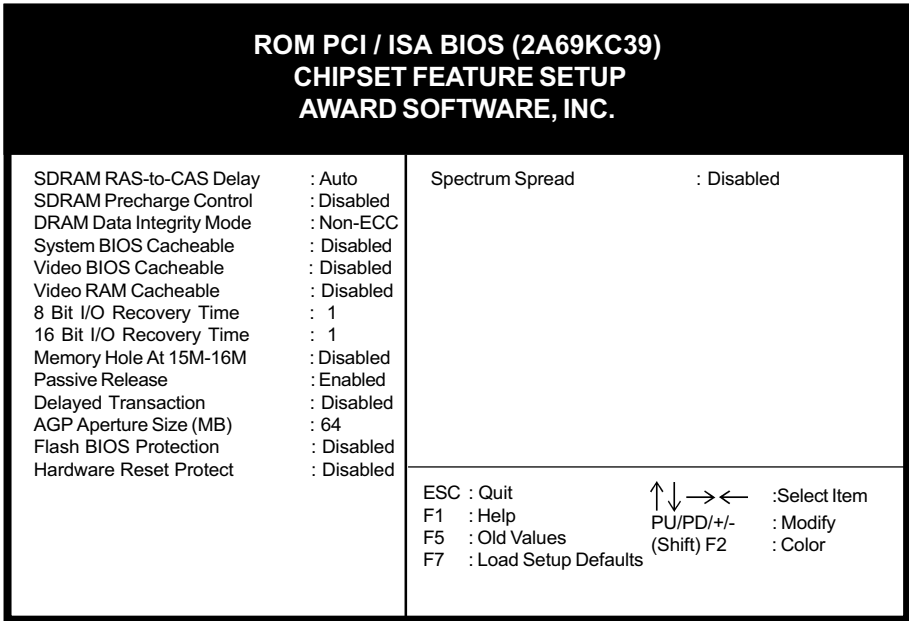


Figure 3-4 Chipset Features Setup Screen



With the exception of the CPU Setup, all of the above settings have been determined by the mainboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are abbreviated descriptions of the functions in this setup menu. You can look on the world wide web for helpful chipset and RAM configuration information including AWARD's web site at [h t t p : / / www.award.com](http://www.award.com).

A. DRAM Data Integrity Mode

BIOS automatically detects the presence of ECC DIMMs (72-bit modules). However, to take advantage of ECC you must set this function at "ECC." If any non-parity DIMMs are installed, the memory operates in non-parity mode only and this function must be set at "Non-ECC."

B. System BIOS Cacheable

Enabling this function allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Caching the system BIOS results in better performance than shadowing the system BIOS as discussed earlier in this chapter.

C. Video BIOS Cacheable

Enabling this function allows caching of the video BIOS ROM at C0000h-C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result. Caching the video BIOS results in better performance than shadowing the video BIOS as discussed earlier in this chapter.

D. 8-bit I/O Recovery Time & 16-bit I/O Recovery Time

Back-to-back CPU or PCI master originated 8-bit and 16-bit cycles have an arbitrary delay of at least 3.5 system clock cycles. This category is used to add additional recovery delay between 8-bit and between 16-bit cycles. This delay takes place because the PCI bus is much faster than the ISA bus. The options are 1 to 8 and N/A.

E. Memory Hole at 15M-16M

Enabling this function will reserve the memory address space between 15MB and 16MB for ISA expansion cards. However, enabling this function will result in not allowing the system to have access to memory above 16MB. Please note that some expansion cards require this setting to be enabled.

F. AGP Aperture Size (MB)

This function determines the amount of system memory that is given to the AGP card. Options range from 4MB to 256MB. This is a dynamic memory allotment in that the AGP card will only use the amount of memory that it needs. The remaining memory not in use will be available for the system to use. For example, if 16MB are allotted to the AGP card and the card only needs 8MB, the remaining 8MB will be available for system use.

G. Flash BIOS Protection

The mainboard manufacturer developed BIOS protection technology that protects the System BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update BIOS with the the FLASH utility. When disabled, the BIOS data can be updated by using the FLASH utility.



Please note that when disabling this setting, the system BIOS is vulnerable by intrusion of computer viruses. It is recommended to disable this setting only temporarily while updating your system's BIOS.

H. Hardware Reset Protect

When this function is enabled, your PC's hardware reset button will not function. This function is especially useful to prevent accidental resets for file servers and routers, etc., which should be available 24 hrs/day. When disabled, your PC's hardware reset button will function normally.

I. Spectrum Spread

When Enabled this function will cause lower EMI by spreading the system frequency spectrum. While this function decreases EMI, system stability may be slightly compromised. Choosing Smart Clock will turn off the AGP, PCI, and SDRAM clocks when not in use. Smart Clock does not perform a spectrum spreading function.

3-4 Power Management Setup

This section provides information on the Green PC power management functions. By choosing the Power Management Setup option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

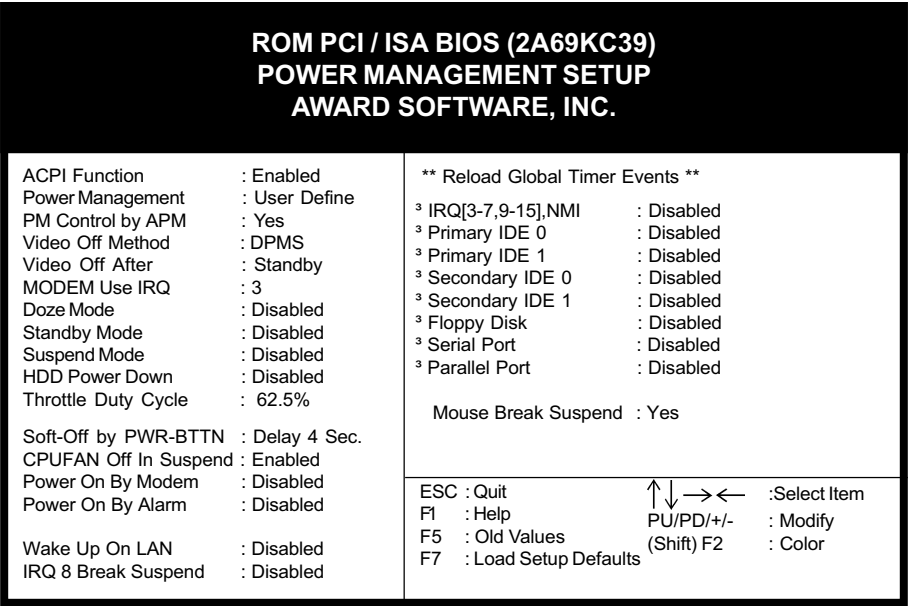


Figure 3-5 Power Management Setup Screen

A. Advanced Configuration Power Interface (ACPI)

ACPI management enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripherals devices, such as CD-ROM players, when they are not in use.

B. Power Management

Power management allows the computer to save electricity when it is not in use by entering increasingly deep power saving modes as shown by the diagram below.



Figure 3-6 Power Saving Mode Flow Chart

The computer runs in Normal operation mode until the Doze timer expires, at which point the computer enters Doze mode. If no external activity occurs, the computer will go into Standby and Suspend modes when their respective timers expire. If external activity occurs, the computer will wake up from Power Management and return to Normal mode. To activate the function, set Power Management to Maximum Saving, User Define, or Minimum Saving described below. For a description of the power saving modes (Doze, Standby, and Suspend) see their descriptions below.

Disabled - Turns off the Power Management functions.

Max. Saving - All timers are set at the minimum value of one minute to maximize power saving.

Min. Saving - All timers are set at the maximum value of one hour for minimal power saving.

User Define - User can configure the timer to a desired time according to the values available.

- ✎ Note that enabling the Power Management function will result in enabling the HDD Power Down function (Max Saving = 15 min, Min Saving = 1 min). The HDD Power Down function is not part of the Power Management scheme as indicated in Figure 3-6. Refer to the Standby Mode, Suspend Mode, and HDD Power Down descriptions below for more information on hard drive power management.

C. PM Control by APM

This function allows software other than BIOS to control Power Management features. Enable this function in BIOS and make sure APM (Advanced Power Management) is present. For example, run the Power utility program located in the DOS directory, C:\DOS\POWER.EXE to use Power Management features under DOS. For Windows 3.1x and Windows 95, you need to install Windows with the APM feature.

D. Video Off Method

This function serves as both a screen saver and power saver for monitors. See the next function, Video Off After, for setting the video timer.

Blank - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.

V/H SYNC+Blank - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had selected Blank. This function serves as both a screen saver and an electricity saver.

DPMS Supported - Select this option if your video card supports the Display Power Management Signaling (DPMS) standard (i.e., you have a monitor that supports Green features). Use software supplied by your video subsystem to set video power management options.

E. Video Off After

This setting determines when the monitor enters power saving mode. As the function name indicates, the monitor enters the power saving mode after the chosen event expires. The Power Management function must be enabled to use this function.

F. Modem Use IRQ

If your computer has a modem, use this function to tell BIOS which IRQ is being occupied by the modem card. When the system is in Green mode, the modem requires an IRQ assignment to wake up the system and perform tasks. This assignment is compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

G. Doze Mode

The Power Management function must be set to enabled in order to use this function. If no interrupts have occurred and the Doze timer expires, the system will enter Doze mode. In Doze mode, the CPU clock runs at a lower speed while all other devices operate normally.

H. Standby Mode

The Power Management function must be set to enabled in order to use this function. If the system runs in Doze mode and the Standby timer expires, the system will enter Standby mode. In Standby mode, the hard disk drive and the monitor shut off while all other devices still operate at full speed. Note that the Video Off and HDD Power Down functions in Figure 3-5 provide the same power saving options found in Standby mode. The priority for determining which function controls power saving for the monitor and hard drive is determined by which timer expires first.

I. Suspend Mode

The Power Management function must be set to enabled in order to use this function. If the system runs in Standby mode and the Suspend timer expires, all devices regulated by power management will shut off and the CPU speed will be 0 MHz.

J. HDD Power Down

The Power Management function must be set to enabled in order to use this function. When the HDD idle time has elapsed, BIOS sends a command to the hard disk to turn off the motor. Set a time between 1 and 15 to indicate time required to wait before the hard drive enters a power saving mode. Some old hard drives may not support this function.

K. 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.

L. Soft-Off by PWR-BTTN

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-4 for operation instructions of the over-ride power button operation which puts the system in Suspend mode. When set to Instant-Off the Soft-Off by PWR-BTTN function is disabled and the computer turns completely off when the power button is pressed.

M. Power On By Modem

When enabled, a modem that receives a call will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

N. Power On By Alarm

When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day.

O. Wake Up On LAN

Enable this selection to use the Wake Up On LAN function discussed in Section 2-4 of this manual.

P. IRQ8 Break Suspend

Enabling this setting turns the monitoring of IRQ8 (the Real Time Clock) On so it does not awaken the system from Suspend mode.

3-5 PnP/PCI Configuration

This section provides IRQ and DMA setting information. By choosing the PnP/PCI Configuration option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

ROM PCI / ISA BIOS (2A69KC39)	
PNP/PCI CONFIGURATION	
AWARD SOFTWARE, INC.	
PnP OS Installed : No	Slot 1 Use IRQ No. : Auto
Resources Controlled By : Manual	Slot 2 Use IRQ No. : Auto
Reset Configuration Data : Disabled	Slot 3 Use IRQ No. : Auto
	Slot 4 Use IRQ No. : Auto
IRQ-3 assigned to : PCI/ISA PnP	Assign IRQ For VGA : Enabled
IRQ-4 assigned to : PCI/ISA PnP	Assign IRQ For USB : Enabled
IRQ-5 assigned to : PCI/ISA PnP	
IRQ-7 assigned to : PCI/ISA PnP	Used MEM base addr : N/A
IRQ-9 assigned to : PCI/ISA PnP	FDD IRQ Can Be Free : Yes
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	ESC : Quit ↑ ↓ → ← : Select Item
DMA-1 assigned to : PCI/ISA PnP	F1 : Help PU/PD +/- : Modify
DMA-3 assigned to : PCI/ISA PnP	F5 : Old Values (Shift) F2 : Color
DMA-5 assigned to : PCI/ISA PnP	
DMA-6 assigned to : PCI/ISA PnP	
DMA-7 assigned to : PCI/ISA PnP	

Figure 3-7 PCI & ONBOARD I/O Setup Screen

A. PnP OS Installed

If you want to install a PnP compatible OS (such as Windows 95) set to Yes.

B. Resources Controlled By

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information.



ESCD(Extended System Configuration Data) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

C. Reset Configuration Data

When enabled the system BIOS will clear/reset the ESCD during POST. After clearing the ESCD, the BIOS will then change this item's value to Disabled. Otherwise, the ESCD data will become useless.

D. IRQ#/DMA# assign to

When resources are controlled manually, you can assign each system interrupt & DMA channel for "Legacy ISA" or "PCI/ISA PnP" card used.

While using **Legacy ISA Card**(non-PnP ISA card), please set it's necessary corresponding resources (INT#, DMA#) from "PCI/ISA PnP" to "Legacy ISA."

- ✎ All ISA non-PnP devices are legacy devices that select resources (I/O Addr., INT# or DMA#) by using hardware jumpers.
- ✎ IRQ-3/4/7/12/14/15 have been set as default for on board devices (COM2, COM1, Printer port, PS/2 mouse, IDE1 and IDE2).

E. Assign IRQ For VGA

This function allows BIOS to make an IRQ available to VGA cards. Most current VGA card models do not require this function to be enabled.

F. Assign IRQ For USB

If USB is employed this function must be Enabled. Otherwise, disable this function to optimize Windows 95 IRQ resources for other IRQ usage.

G. Used MEM base addr

This function devotes a space of memory (8K, 16K, 32K, 64K) for any peripheral that has a high memory requirement. This is also used to designate memory space for legacy ISA cards. The settings C800~DC00 are used to designate point at which the memory will start being used. The default setting is N/A (disabled.)

H. FDD IRQ Can Be Free

This function allows user to choose if the FDD IRQ is able to be freed up. The default setting is **Yes** and this does not allow the IRQ to be free.

3-6 Load Setup Defaults

Load Setup Defaults loads the default system values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer

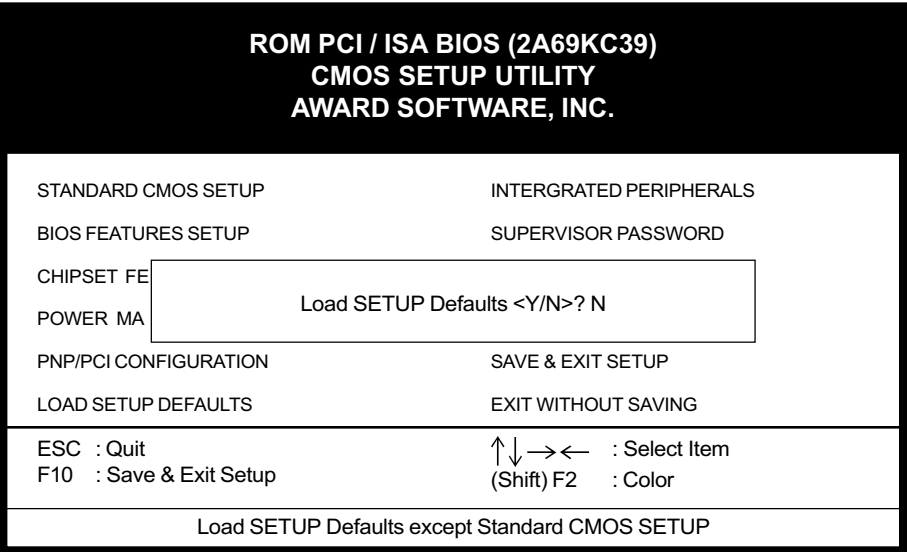


Figure 3-8 Load Setup Defaults Screen

3-7 SeePU & HARDWARE MONITORING

By choosing the *SeePU* & HARDWARE MONITORING option from the CMOS SETUP UTILITY menu(Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

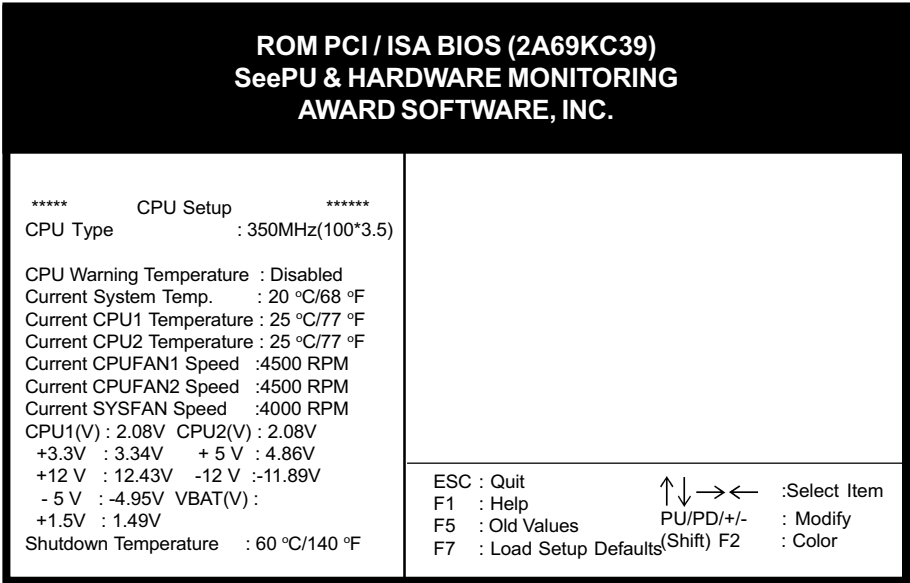


Figure 3-9 SeePU & HARDWARE MONITORING Screen

A. CPU Setup

The mainboard manufacturer developed *SeePU* technology that allows you to easily change your CPU's **clock multiplier factor** and **CPU Bus frequency** in BIOS. Refer to Section 2-3 for details.

B. Shutdown Temperature

The system will shutdown when the temperature setting is reached , to prevent the system from overheating. (This support Windows 98 ACPI function only).

3-8 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the CMOS Setup Utility menu (Figure 4-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

ROM PCI / ISA BIOS (2A69KC39) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.			
IDE HDD Block Mode	: Enabled	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Master PIO	: Auto	Onboard Serial Port 2	: 2F8/IRQ3
IDE Primary Slave PIO	: Auto	COM2 Mode	: Standard
IDE Secondary Master PIO	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Secondary Slave PIO	: Auto	Parallel Port Mode	: SPP
IDE Primary Master UDMA	: Auto	PWRON After PWR-Fail	: Off
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled	ESC : Quit	↑↓→← : Select Item
On-Chip Secondary PCI IDE	: Enabled	F1 : Help	PU/PD/+/- : Modify
USB Keyboard Support	: Disabled	F5 : Old Values	(Shift) F2 : Color
Onboard Sound Chip	: Enabled	F7 : Load Setup Defaults	
Init Display First	: PCI Slot		
POWER ON Function	: Disabled		
Onboard FDC Controller	: Enabled		
FDC Write Protect	: Disabled		

Figure 3-10 Integrated Peripherals Setup Screen

A. On Board IDE Control

IDE HDD Block Mode

Specify the maximum number of sectors that can be transferred at a time.

IDE Primary/Secondary Master/Slave PIO

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

On-chip Primary/Secondary PCI IDE

You can set this to disable the On-chip IDE controller if you are going to add a higher performance IDE board.

B. USB Keyboard Support

If your current operating system doesn't support USB drivers (i.e., DOS) this function must be enabled for USB keyboard operation in these operating systems.

- ☒ When using a USB keyboard this function is automatically Enabled during bootup regardless of its setting in BIOS.

C. Onboard Sound Chip

Select **Enabled**, in order to use the on board audio function. select **Disable** to terminate this function.

D. Init Display First

This function allows user to choose between AGP slot or VGA slot to initialise Display first .

E. Power On Function

Set to Button Only to control the system power via the button on your system case. Set to Mouse Click to turn on the power via a PS/2 mouse, and set to Hot Key or Password to turn on the power via keyboard. With Hot Key and Password you must decide on which keys will turn on the power.

F. On Board FDC Controller

Enabling the floppy disk controller (FDC) allows for normal use of the floppy drive connected to the mainboard. If you install an add-in FDC or the system has no floppy drive, disable this function

G. COM2 Mode

When this function is Enabled, then the COM port will be redirected to support IR function..

H. Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

I. Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes

J. Power Failure Recovery

Computers using an ATX power supply do not turn back on after the power source to the computer unexpectedly fails (i.e. electricity outage). Enabling this setting will allow the system to always turn back on after a power failure. This is especially important for computers that must be on 24 hours per day

3-9 Supervisor Password & User Password Setting

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-3). When the Security Option function is set to Setup, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to System, a password is required to enter both BIOS and the computer's operating system (for example Windows 95) found on the boot drive. This is shown in Figures 3-11 and 3-12.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS (See Figure 3-12). Note that when there is no supervisor password set, the user password controls access to all BIOS settings (See Figure 3-11 below).

A. Set Either Supervisor Password or User Password

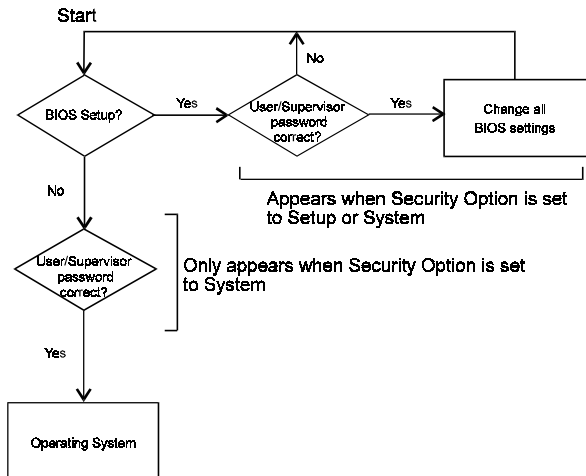


Figure 3-11 Set Either Supervisor or User Password

B. Set Both Supervisor Password and User Password

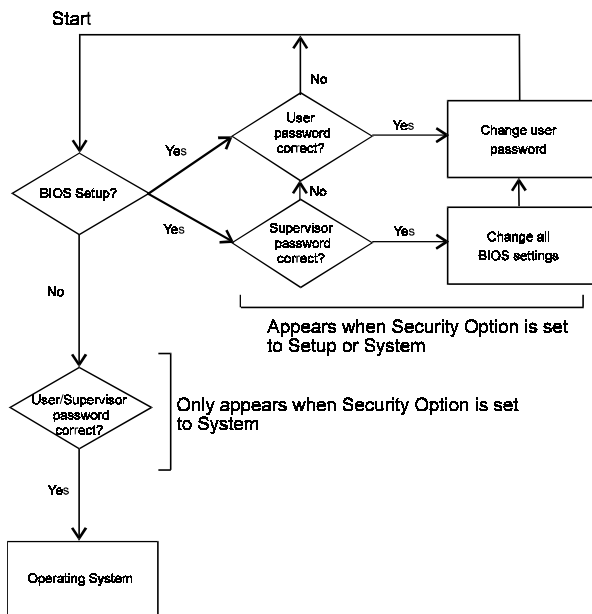


Figure 3-12 Set Both Supervisor and User Password

3-10 IDE HDD Auto Detection

This utility can automatically detect IDE hard disk type and parameters. The detection process take about 5 seconds for each physical drive. After the utility detects the disk drive, type Y and press [Enter] to automatically load the parameters in the Hard Disk section of the Standard CMOS Setup menu. Otherwise, leave the option set at N and press [Enter] or the [Esc] key to skip the detected drive. After detecting your hard drive(s), return to the Standard CMOS menu to check your settings.

ROM PCI / ISA BIOS (2A69KC39)
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								
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
2 (Y)	547	530	32	0	1059	63	LBA	
1	547	1060	16	65535	1059	63	NORMAL	
3	547	530	32	65535	1059	63	LARGE	

Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation
ESC: Skip

Figure 3-13 IDE HDD Auto Detection Screen

3-11 Save and Exit Setup

If you select this and type Y (for yes) followed by the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the BIOS chip.

3-12 Exit Without Saving

Selecting this option and pressing Y followed by the [Enter] key lets you exit the Setup program without recording any new values or changing old values.