



Chapter 3

BIOS Description

Utility Support:

AWDFLASH.EXE

This is a flash memory write/read utility used for the purpose of upgrading your BIOS when necessary. Before doing so, please note:

- **We strongly recommend you only upgrade BIOS when encounter problems.**
- **Before upgrading your BIOS, review the description below to avoid making mistakes, destroying the BIOS and resulting in a non-working system.**

When you encounter problems, for example, you find your system does not support the latest CPU released after our current mainboard, you may therefore upgrade the BIOS, please don't forget to set JAV as open (please refer to page 16) and disable the "Flash Write Protect" item in AWARD BIOS CMOS Setup first (please refer to page 26).

Follow the steps exactly for a successful upgrade.

1. Create a bootable system floppy diskette by typing Format A:/s from the DOS prompt under DOS6.xx or Windows 9x environment.
2. Copy AWDFLASH.EXE (version>7.07) from the directory \Utility located on QDI Mainboard Utility CD onto your new bootable diskette.
3. Download the updated BIOS file from the Website (<http://www.qdigrp.com>). Please be sure to download the suitable BIOS file for your mainboard.
4. Uncompress the file download, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is located in readme file.
5. Reboot the system from the bootable diskette created.
6. Then run the AWDFLASH utility at the **A:** prompt as shown below:
A:\AWDFLASH xxxx.bin

Follow the instruction through the process. Don't turn off power or reset the system until the BIOS upgrade has been completed.

If you require more detailed information concerning AWDFLASH Utility, for example, the different usage of parameters, please type A:\>AWDFLASH /?

Note: AWDFLASH.EXE (version>7.07) utility must be used to upgrade the WinneX 3 mainboard BIOS instead of QDI flash utility. So far QDI flash utility —**FLASH.EXE (V1.3)** does not support the Flash EPROM on WinneX 3 mainboard.



AWARD BIOS Description

Entering Setup

Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press the <Ctrl> + <Alt> + <Esc> keys, to enter the AWARD BIOS CMOS Setup Utility.

Press to enter SETUP

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from eleven setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu.

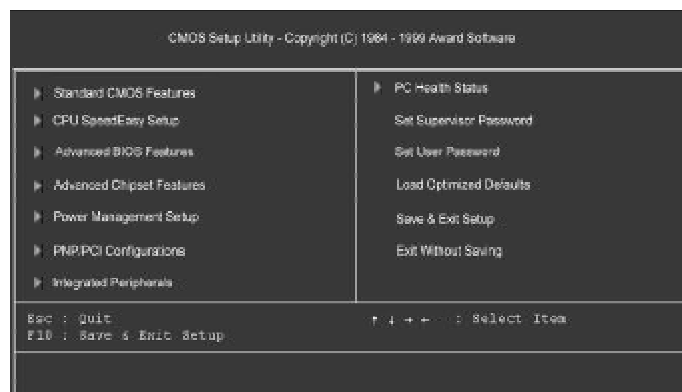


Figure-1 Main Menu

Load Optimized Defaults

The Optimized Defaults are common and efficient. It is recommended users load the optimized defaults first, then modify the needed configuration settings.

Standard CMOS Features Setup

The basic CMOS settings included in "Standard CMOS Features" are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value desired in each item.

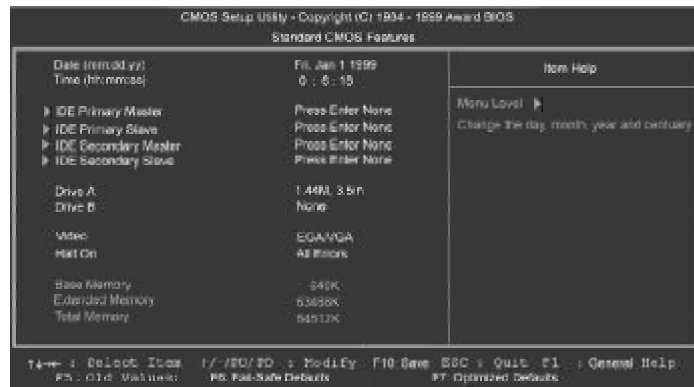


Figure-2 Standard CMOS Setup Menu

For the items marked, press enter, a window will pop up as shown below. You can view detailed information or make modifications.

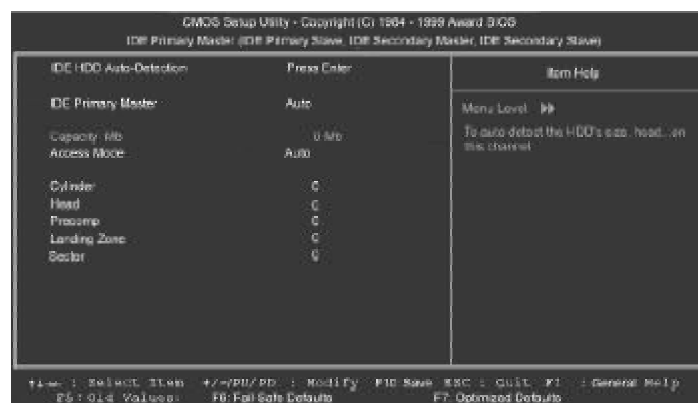


Figure-2-1 IDE Primary Master Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

These categories identify the HDD types of 2 IDE channels installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and User. 'None' means no HDD is installed or set; 'Auto' means the system can auto-detect the hard disk when booting up; by choosing 'user', the related information should be entered regarding the following items. Enter the information directly from the keyboard and press < Enter>:

CYLS	number of cylinders	HEAD	number of heads
PRECOMP	write pre-compensation	LANDZ	landing zone
SECTOR	number of sectors	MODE	HDD access mode



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

NORMAL

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum number of cylinders, heads and sectors for NORMAL mode are 1024, 16 and 63.

If the user sets his HDD to NORMAL mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that.

LBA (Logical Block Addressing) mode

A new HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads and 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 and cylinder number into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4 Gigabytes.

LARGE mode

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

BIOS tricks DOS (or other OS) into dividing 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 transformation process will be made inside INT13h in order to access the right HDD address.

If using Auto detect, the BIOS will automatically detect the IDE hard disk mode and set it as one of the three modes.

Remark

To support LBA or LARGE mode of HDDs, there must be some softwares involved which are located in Award HDD Service Routine(INT13h). It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.



Video

Set this field to the type of video display card installed in your system.

EGA/ VGA	Enhanced Graphics Adapter / Video Graphic Array. For EGA, VGA, SEGA, SVGA, or PGA monitor adapters.
CGA 40	Color Graphic Adapter, powering up in 40 column mode.
CGA 80	Color Graphic Adapter, powering up in 80 column mode.
MONO	Monochrome adapter, including high resolution monochrome adapters.

Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

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

Memory

This is a Display-Only Category, 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.
Extended Memory	The BIOS determines how much extended memory is presented during the POST.
Other Memory	This is the memory that can be used for different applications. Shadow RAM is most used in this area.
Total Memory	Total memory of the system equals the sum of the above memory.



CPU SpeedEasy Setup

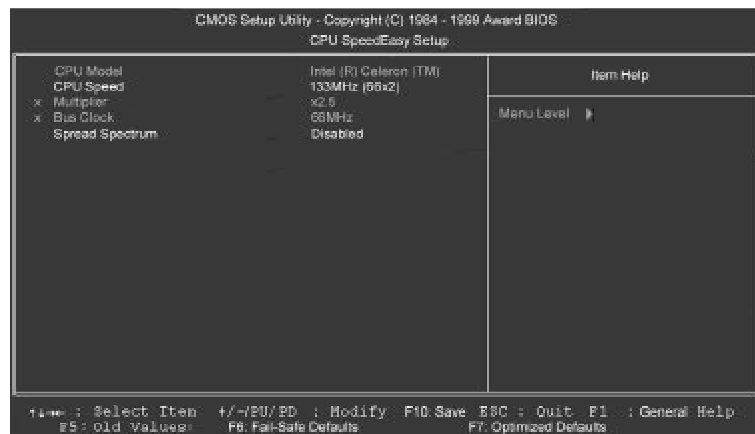


Figure-3 CPU SpeedEasy Setup Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• CPU Speed	<i>Jumper Emulation</i>	This item is only for users who understand all the CPU parameters, i.e. system bus frequency, "66MHz" and multiplication of processor core frequency for system bus frequency "x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8".
	133MHz(66x2)	Selects the CPU speed according to your CPU brand and type.
	166MHz(66x2.5)	
	.	
	.	
	.	
	533MHz(66x8)	
	200MHz(100x2)	
	250MHz(100x2.5)	
	.	
	.	
	.	
	800MHz(100x8)	
• Spread Spectrum	Enabled	Enables Spread Spectrum to reduce EMI.
	Disabled	Disables Spread Spectrum.



Advanced BIOS Features Setup



Figure-4 Advanced BIOS Features Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• ChipAwayVirus On Guard	<i>Enabled</i>	Guards against boot virus threats early in the boot cycle, before they have a chance to load into your system, ensuring your computer boots to a clean operating system.
	<i>Disabled</i>	Disables this function.
• CPU Internal Cache	<i>Enabled</i>	Enabling this option speeds up memory access.
	<i>Disabled</i>	However, it depends on CPU/chipset design.
• External Cache	<i>Enabled</i>	Enables external L2 cache. This allows better performance.
	<i>Disabled</i>	Disables external cache.
• CPU L2 Cache ECC Checking	<i>Enabled</i>	Enables CPU L2 Cache ECC (Error Checking and Correction) function.
	<i>Disabled</i>	Disables CPU L2 Cache ECC function.
• Quick Power On Self Test	<i>Enabled</i>	Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.
	<i>Disabled</i>	Normal POST.
• First (Second, Third) Boot Device	<i>Disabled</i>	Select Your Boot Device Priority. It could be Disabled, Floppy, LS/ZIP, HDD-0, HDD-1, HDD-2, HDD-3, SCSI, CDROM, LAN.
	<i>Floppy</i>	

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Advanced Chipset Features Setup

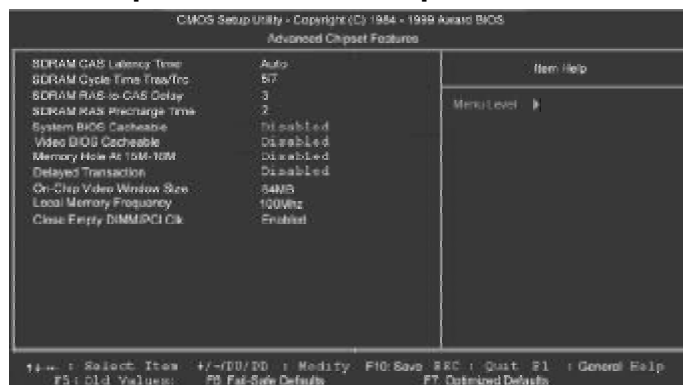


Figure-5 Advanced Chipset Features Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• SDRAM CAS Latency Time	Auto 3 2	Contains the information for SDRAM initialization procedure.
• SDRAM Cycle Time Tras/Trc	5/7 6/8	
• SDRAM RAS To CAS Delay	2 3	Adds a delay time between the assertion of RAS and CAS. Without additional delay time. Default setting is suggested.
• SDRAM RAS Precharge Time	2 3	
• System BIOS Cacheable	Enabled Disabled	Besides conventional memory, the system BIOS area is also cacheable.
• Video BIOS Cacheable	Enabled Disabled	Besides conventional memory, video RAM area is also cacheable. Video RAM area is not cacheable.
• Memory hole at 15M-16M	Enabled Disabled	Memory hole at 15-16M is reserved for expanded ISA card. Does not set this memory hole.
• Delayed Transaction	Enabled Disabled	Default setting is suggested.
• On-Chip Video Window Size	32/64MB Disabled	Selects graphic display cache window size. Does not select it.
• Local Memory Frequency	100MHz 133MHz	Defines the local memory frequency, 100MHz or 133MHz.
• Close Empty DIMM/PCI Clk	Enabled Disabled	Closes empty DIMM clock or PCI clock to reduce EMI. Does not close empty DIMM/PCI clock.



Power Management Setup

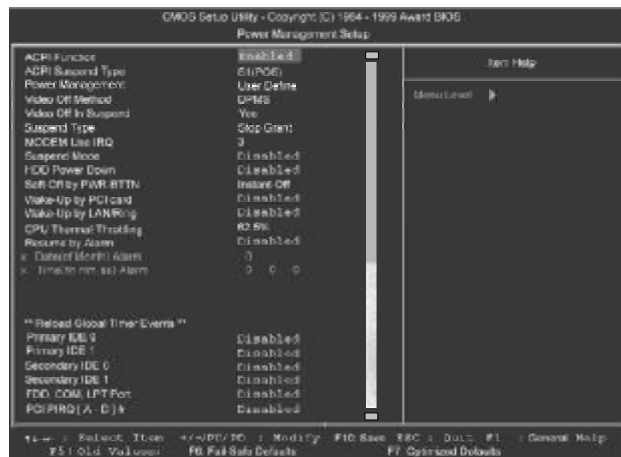


Figure-6 Power Management Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
• ACPI function	<i>Disabled</i> <i>Enabled</i>	Invalidates ACPI function. Validates ACPI function.
• ACPI Suspend Type	<i>S1</i> <i>S3</i>	Selects the ACPI suspend type.
• Power Management	<i>Disabled</i> <i>User Define</i> <i>Min Saving</i> <i>Max Saving</i>	Global Power Management (PM) will be disabled. Users can configure their own Power Management Timer. Pre - defined timer values are used. All timers are in their MAX values. Pre - defined timer values are used. All timers are in their MIN values.
• Video Off Method	<i>Blank Screen</i> <i>V / H SYNC +</i> <i>DPMS</i>	The system BIOS will only blank off the screen when disabling video. In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA card to monitor. This function is enabled only for VGA cards supporting DPMS. Note: When the green monitor does not detect the V/H-SYNC signals, the electron gun will be turned off.
• Video Off In Suspend	<i>Yes</i>	The system will disable video when entering suspend mode.



	No	Does not turn off video when entering suspend mode.
• Suspend Type	Stop Grant PwrOn Suspend	Selects the Suspend type.
• MODEM Use IRQ	3, 5, 7, 9, 10, 11 NA	Special wake-up event for Modem.
• Suspend Mode	Disabled Min ~ 1Hr	The system never enters Suspend mode by timer. Defines the continuous idle time before the system enters Suspend mode. If any items defined in "PM Events" are on and activated, the system will be woken up.
• HDD Power Down	Disabled 1 - 15 Min	HDD's motor will not be off by timer. Defines the continuous HDD idle time before the HDD enters power saving mode (motor off).
• Soft-Off by PWR-BTTN	Instant-Off Delay 4 secs	They system will immediately power off once the power button is pressed. The system will power off when power button is pressed for 4 seconds.
• Wake-Up by PCI card	Enabled	Allows the system to be woken up by PCI card. Does not allow the system to be powered on by PCI card.
• Wake-Up by LAN/Ring	Enabled	Allows the system to be powered on when a Ring indicator signal comes up to UART1 or UART2 from external modem (to LAN Wake-up Header from LAN adapter or to modem Ring on Header from internal modem card).
• CPU Thermal-Throttling	Disabled 12.5%, 25%, 50%, 37.5%, 62.5%, 75%, 87.5%	Does not allow Ring/LAN wake up. Selects the duty cycle of the STPCLK# signal, slowing down the CPU speed when the system enters green mode.
• Resume by Alarm	Enabled	RTC alarm can be used to generate a wake-up event to power up the system.
• Primary IDE 0/1, Secondary IDE 0/1	Disabled Enabled Disabled	RTC has no alarm function. Reloads global timer, when there's an IDE event. Does not reload global timer.
• FDD/COM/LPT Port	Enabled	Reloads global timer, when there's a FDD/COM/LPT event.
• PCI IRQ [A - D] #	Disabled Enabled Disabled	Does not reload global timer. Reloads global timer, when there's an PCI event. Does not reload global timer.



PNP/PCI Configuration Setup

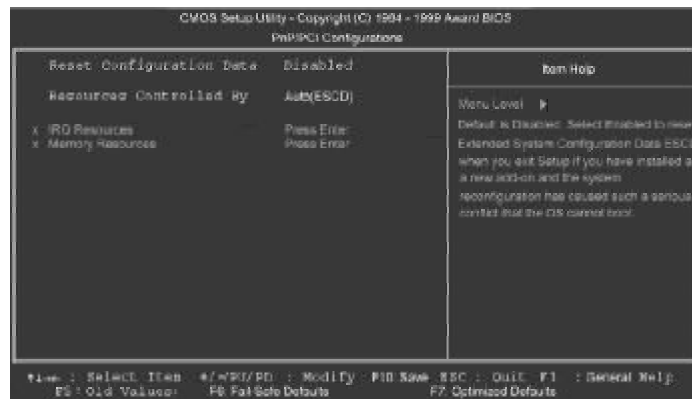


Figure-7 PNP/PCI Configuration Setup Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Reset Configuration Data	<i>Enabled</i>	Default is 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 serious conflicts preventing the OS from booting.
• Resources Controlled By	<i>Disabled</i> <i>Auto(ESCD)</i> <i>Manual</i>	Disables the configuration data function. BIOS can automatically configure all boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, because BIOS automatically assigns them.