AWARD 386/486 MODULAR BIOS

OPTI

User's Manual

AWARD MODULAR BIOS
386/486 BIOS FOR OPTI CHIPSET
User's Manual

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Overview

Award's BIOS ROM has a built-in SETUP program that allows users to modify the basic system configuration contained in CMOS RAM.

The power-conserving RAM is battery-backed so that it retains the configuration SETUP information, which includes the date, the time, and the number and type of diskette drives and fixed disk drives installed on the system, when the power is turned off.

How to Invoke SETUP

End users run the SETUP program by pressing the space bar during the boot up procedure. This results in a keyboard error message. When the keyboard error is displayed, press the CTRL+ALT+ESC key sequence to display the SETUP screen.

The SETUP screen Default Values

The standard AT BIOS selections have the default values shown in Figure 3-1. The SETUP program is used to change the information in the CMOS RAM that defines the system configuration. The CMOS RAM contains information to tell the BIOS and CPU what peripherals are attached to the system; information such as the disk drive type and video display. It is necessary to set these values to correctly correspond to the parameters of your system.

ROM SETUP Default Values

AWARD SOFTWARE CMOS SETUP

DATE (MM/DD/YY)	1/1/80			
TIME (HH:MM:SS)	0:00:00			
DISKETTE 1	None			
DISKETTE 2	None			
	CYLS.	HEADS	SECTORS	PRECOMP
DISK 1	None			
DISK 2	None			
VIDEO	EGA/VGA			
BASE MEMORY	512			
EXTENDED MEMORY	0			
ERROR HALT	NO DISK ERROR HALT			
SHADOW RAM	DISABLE			
SPEED SELECT	NO CHANGE			

↑↓↵moves between items,← →selects values
F10 records changes, F1 exits, F2 for color toggle.

□ **NOTE:** If for some reason or other your particular drive is not one of the 47 predefined types, simply scroll down to type 48 or 49 and enter the following drive specifications: cylinders, heads, WPcom, LZone, and sectors. To move the high light from one field to another, use the UP ARROW Key.

Changing the SETUP Selection Values

The information contained in the SETUP screen can be changed in two different ways.

1. Use the RIGHT ARROW key to increase the numeric value or move to the next value and the LEFT ARROW key to decrease the numeric value or move to the previous value.

2. Enter the new numeric value directly from the keyboard using either the numeric keypad or the standard keyboard.

□ **NOTE:** Be sure NUM LOCK is on before you enter numbers with the numeric keypad.

To move the highlight from one field to another, use the UP ARROW and DOWN ARROW keys (with NUM LOCK OFF). After the value has been changed, use the RETURN key to enter the new value.

After the information has been changed press the UP ARROW or DOWN ARROW keys to move the highlight to the next field.

Pressing the F1-key exits the SETUP program without making any changes.

Pressing the F2-key changes the video output from color to monochrome. Tis function is specifically designed to improve the quality of the SETUP screen on composite monitors.

Pressin the F10-key stores any changes made in the SETUP program to CMOS RAM. The F5-key must be pressed after F10 to confirm changes before they are written to CMOS.

Date

Type the current date into this position and press RETURN. Type the date in the folowing format:

MM/DD/YY

where,

MM is a value for the month from 1 to 12

DD is a value for the day from 1 to 31, and

YY is the last two digits in the year.

The century is always set to 1900. The slash, "/," must be typed separating each entry. The backspace key can be sused to correct typing mistakes.

Time

Type the current time into this position and press RETURN. Type the time in the format HOUR:MINUTE:SECONDS. The HOUR is calculated according to the 24-hour military-time clock. As an example 1 p.m. is typed 13:00:00. It is not necessary to enter leading zeros in front of numbers, or to enter values for the seconds, however you will need to type the ":" to separate the hours and minutes.

Diskette 1 And Diskette 2

The choices for the floppy drives ("A" and "B" drives) are

NONE	No floppy drive installed.
360K	5.25-inch PC-type standard drive; 360 kilobyte capacity.
1.2M	5.25-inch AT-type quad-density drive; 1.2 megabyte capacity.

720K	3.5-inch single sided drive; 720 kilobyte capacity.
1.4M	3.5-inch double sided drive; 1.4 megabyte capacity.

Pressing the RIGHT ARROW and LEFT ARROW keys change the value.

Disk 1 And Disk 2

The DISK selections identify the types of fixed disk drives that have been installed in the computer. Appendix B, Fixed Disk Drive Type Table, shows the 47 types of drives in the SETUP drive table. The first 23 are IBM AT standard. Types 24 through 47 are exclusive to.the Award BIOS.

Press the RIGHT ARROW key to select a higher numbered fixed disk type, press the LEFT ARROW key to select a lower numbered fixed disk type or enter the disk type using the numeric keys.

If a fixed disk has not been installed select NONE. NONE can be selected by using the arrow keys to display the word NONE or by entering 0.

Standard IBM drives have 17 sectors per track. RLL drives have more sectors per track (22, 26, 34 and so on) because of data compression techniques used by the controller. If your system contains a drive with characteristics not listed in the drive table then you must have a special driver for it (to be loaded by the CONFIG.SYS file during the boot). In such a case, select the drive type recommended by the drive manufacturer or NONE if there is no drive type recommended.

Video

This selection specifies the type of video adapter used with the primary system monitor. To make a choice, determine which of four fundamental types your adapter emulates.

EGA/VGA	Enhanced Graphics Adapter, Video Graphics Array or any special video adapter
40 Color	Color Adapter, power up in 40 column mode
80 Color	Color Adapter, power up in 80 column mode
MONO	Monochrome adapter

Pressing the LEFT ARROW key changes the value displayed to the next selection EGA/VGA, 40 Color, etc. Pressing the RIGHT ARROW key changes to the previously displayed selection.

To specify an EGA, VGA, SEGA or PGA monitor adapter choose EGA/VGA.

There is no selection for secondary video adapters in the SET-UP program, although they are supported. Normally, a monitor and video adapter should be specified and installed, however it is not necessary to have them installed, such as in a system being used as a file server.

Base Memory

At power up, the computer determines how much memory is present. To set this value, enter the amount of continuous memory below 1 megabyte using the numeric keys on your keyboard. Most computers have 512K or 640K. This does not include extended, expanded or video memory.

If the value entered in this field is different from the value found by the computer at power up, a prompt will ask for confirmation that the correct value has been entered. Press the

F5-key only if you are sure the correct number has been entered. Press any other key to restore the previous base memory value.

Extended Memory

At power up, the computer determines how much extended memory is present. To set this value, enter the amount of memory above the 1 megabyte boundary using the numeric keys on your keyboard.

Enter the amount of memory, in kilobytes, using the numeric keys on your keyboard. If the value entered in this field is different from the value found by the computer at power up, a prompt will ask for confirmation that the correct value has been entered. Press the F5-key only if the number entered is correct. Press any other key to restore the previous value.

Error Halt

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

For most situations, choice 1, Halt on all errors, should be used. A system halt may prevent a loss of data (as is common when a fixed disk or RAM malfunctions). For some special applications, however, the computer should not halt. For example, systems tied to local area networks do not need disk drives if they can boot from the file server. The system should not halt if it fails to detect any disk drives. Also, computers that are employed in multi-user systems as a file server might not use a keyboard and should not halt when a keyboard error is detected. Choices 2 and 5 will prevent this halt from being executed. The BIOS will support a videoless environment regardless of this selection.

The choices are

HALT ON ALL ERRORS	Whenever the BIOS detects an error the system boot will be stopped and the user will be prompted.
NO HALT ON ANY ERRORS	The system boot will not be stopped for any error that may be detected.
NO KEYBOARD ERROR HALT	The system boot will not stop for a keyboard error; it will stop for all other errors.
NO DISK ERROR HALT	The system boot will not stop for a disk error; it will stop for all other errors
NO KEYBOARD OR DISK HALT	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Press the LEFT ARROW and RIGHT ARROW keys when you want to change the displayed selection. Continue pressing the ARROW keys until the choice you want is displayed.

Speed Select

This selection will be displayed only if the computer motherboard (circuitry) supports speed switching. Speed select is automatically executed before the system software is booted.

This selection is used to alter the system speed during the boot process. The speed can be changed from LOW to HIGH during the boot or from High to LOW; or the speed can remain the same

There are three choices are available if speed switching is supported.

NO CHANGE	The speed will not be changed.
LOW	The system will be set to Low Speed.
HIGH	The system will be set to High Speed.

To select the desired speed press the LEFT ARROW or RIGHT ARROW keys until the choice you wish is displayed.

System Configuration

This allows the user to select from 5-7 system configurations custom designed by the OEM for their hardware. The selection titles are designed by the OEM. However, they generally concern the memory configuration.

Some examples of the different types of configurations available on the 386 system, would be

1x256K	1M of RAM non-interleaved memory
4x256K	4M of RAM Interleaved memory
1x1MEG	4M of RAM non-interleaved memory

When a system configuration is selected, the System and Extended memory fields are automatically loaded with correct values and the Extended CMOS checksum is updated. As with any SETUP option, the values must be explicitly saved with the F10/F5 combination to exit SETUP and save values.

Shadow RAM

This field allows the user to specify the Shadow RAM option. The hardware of these systems generally supports shadowing of the BIOS area F000:0000-F000:FFFF, and of the video area C000:0000-C000:8000. Some systems require shadowing of the entire 64K video block C000:0000-C000:FFFF. This could impact some hard disk controllers with option ROMs. ROM SETUP allows Shadow RAM to be selected to correct these problems.

The possible values are:

DISABLE	System BIOS and Video BIOS not shadowed
SYSTEM	System BIOS shadowed, Video BIOS not shadowed.
VIDEO	System BIOS not shadowed, Video BIOS shadowed.
SYSTEM&VIDEO	System BIOS and Video BIOS shadowed.

ROM SETUP Default Values

AWARD software CMOS SETUP

DATE (MM/DD/YY)	1/1/80			
TIME (HH:MM:SS)	0:00:00			
DISKETTE 1	None			
DISKETTE 2	None			
	CYLS.	HEADS	SECTORS	PRECOMP
DISK 1	None			
DISK 2	None			
VIDEO	EGA/VGA			
BASE MEMORY	512			
EXTENDED MEMORY	0			
ERROR HALT	NO DISK ERROR HALT			
CACHE CONTROLLER	DISABLE			
SHADOW RAM	DISABLE			
SPEED SELECT	NO CHANGE			

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☐ NOTE : If for some reason or other your particular drive is not one of the 47 predefined types, simply scroll down to type 48 or 49 and enter the following drive specifications : cylinders, heads, WPcom, LZone, and sectors. To move the high light from one field to another, use the UP ARROW Key.

* cache Controller (486 BIOS only)

This enables or disables the cache capabilities of the 486 processor . A standard 486 BIOS will offer only two selections, DISABLE and ENABLE.