User's Manual

3302660

Chapter 1 Introduction

Full-size DDR SDRAM Dual Socket 370 133MHZ Pentium III Dual LAN and UltraDMA 33/66/100 CPU Card

Product Introduction

GLOBAL's 3302660 combines the high performance and exceptional value of Intel Pentium III CPU and VIA Apollo Pro266 Chipset with a full-featured, new generation, full-size single board computer.

The world's first SBC with Dual Pentium III Processor CPU based upon the DDR SDRAM architecture use the VIA Apollo Pro266 Chipset, which include VT8633 V-Link Host system controller and VT8233 V-Link to PCI/LPC bridge, The Host system controller provides superior performance between the CPU, DRAM, AGP bus, and V-Link interface with pipelined, burst, and concurrent operation. With the Memory controller, The DDR DRAM interface allows zero wait state bursting between the DRAM and the data buffers. And also supports ECC (single-bit error correction and multi-bit detection) function. The 3302660 will provide the super computing performance.

The 3302660 include the following features:

- Support Intel Dual Pentium III CPU with 100/133MHz FSB up to 1GHz or above
- Provide Max. 3GB DDR SDRAM memory with 3 DDR memory Socket
- Graphic Chip use the C&T 69000/69030 VGA controller with 2MB/4MB VGA memory on die
- Dual LAN support by the Branded Intel 82559 10/100 Base Ethernet controller
- RS232 ×2 with 16C550 UARTs
- Enhanced parallel port, support SPP/EPP/ECP
- Support 2 IDE interface with UltraDMA 33/66/100MHZ
- FDC ×1
- PS/2 keyboard/mouse
- USB port ×2
- Watchdog Timer 1~64 sec)
- ISAMAX support up to 20 slots ISA card

With all the above features equipped on board, The 3302660 Provides all-in-one solution with VGA and Dual LAN. It is one of the top performance Dual Processor SBC boards that is suitable for the high performance, rock-solid reliability and non-stop operation application.

Features

- **Intel Dual Pentium III CPU with 100/133MHz FSB up to 1GHz or above**
- **3GB SDRAM (Max.) memory support, DDR x 3**
- **VIA Apollo PRO 266 Chipset (VT 8633 and VT8233)**
- **C&T 69030 VGA controller with on die 4MB Memory**
- **Dual Intel 82559 10/100 Base Ethernet controller**
- RS232 ×2 with 16C550 UARTs
- Enhanced parallel port, support SPP/EPP/ECP
- **UltraDMA 33/66/100MHZ x 2 with power connector**
- FDC ×1, PS/2 keyboard/mouse
- **USB port ×2**
- Watchdog Timer(1~64 sec)
- ISAMAX support up to 20 slots ISA card

Specification

System Architecture

- Full size SBC with PCI/ISA Golden finger
- **Intel dual Socket 370 Pentium III with 100/133MHz FSB**
- PCI V2.2 complied
- PICMG 1.0 (Rev.2.0) complied

CPU Support

- Intel Pentium III CPU with 128/256K cache on die
- **Socket 370 FC-PGA CPU running at 100/133MHz FSB up to 1GHz or above**
- Dual CPU support
- Support streaming SIMD instruction
- On board intelligent switching type power regulator ×2

Main Memory

- **Support DDR up to 3GB (Max.)**
- DDR Socket x 3
- ECC support (single bit error correction/Multiple bit errors reporting)

BIOS

- Award System BIOS
- Plug & Play support
- Advanced Power Management support
- Advanced configuration & Power Interface support
- **2M bits flash ROM**

Chip Set

- **VIA Apollo PRO 266 Chipset (VT 8633 and VT8233)**
- 100/133MHz FSB support
- PCI V2.2 complied
- DEC 21150 PCI Bridge

On Board VGA

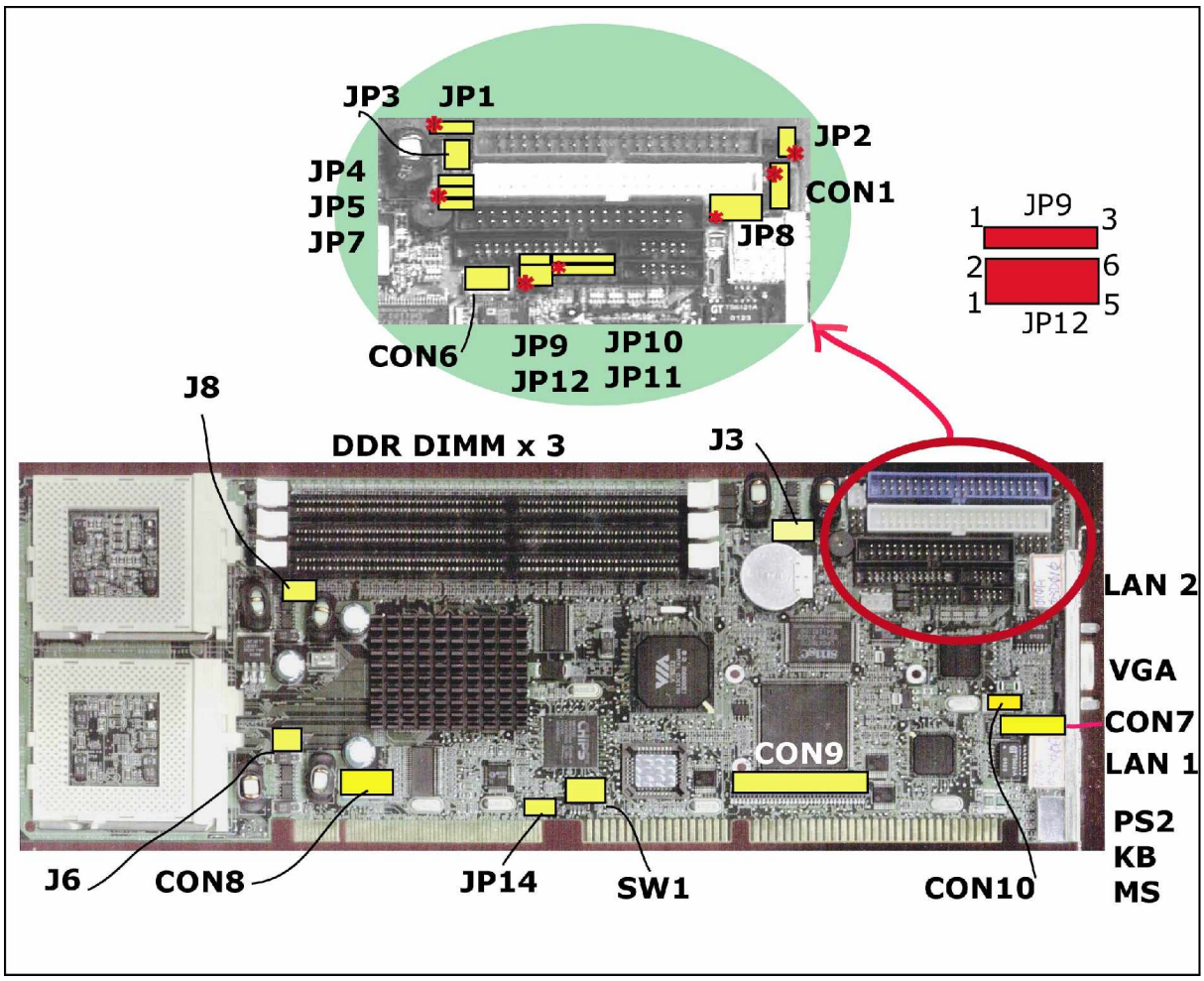
- **C&T 69030 VGA controller**
- **4MB SDRAM on die**
- Driver support Windows 95/98/2000, Windows NT4.0
- 15 pin CRT connector ×1

- **On Board LAN**
  - **Dual Intel 82559 Ethernet controller**
  - **10 Base T/100 Base TX support, full duplex**
  - **Complied with PCI V2.1, IEEE802.3, IEEE 802.3U**
  - **Backward compatible with former 82558 Ethernet controller base net modules**
  - **Drivers support DOS/Windows, Windows 95/98/2000, Windows NT, Netware, SCO Open Server 5.0**
  - **RJ45 connector ×2**

- **On Board I/O**
  - **SMsC LPC 47B 272 super I/O**
  - **SIO×2, with 2x16C550 UARTs, 10 pin header 2.0 pitch ×2**
  - **PIO×1, bi-directional, EPP/ECP support, 26 pin connector 2.0 pitch ×1**
  - **Floppy Disk controller 34 pin connector ×1**
  - **On chip enhanced IDE x 2, Ultra DMA/66/100 support, 40 pin connector × 2, total 4 E.IDE devices support. Two pin power connector for DOM.**
  - **On chip Keyboard, mouse controller, 5 pin connector x 1(for other keyboard) 6 pin mini DIN connector ×1, for PS/2 keyboard/mouse**
  - **On board USB port ×2**
  - **On Board buzzer ×1**
  - **On board 2 pin header for I^2C**
  - **GPIO (4 in 4 out)**
  - **On board 5 pin header for IrDA**
  - **On Board 2 pin header for reset SW, 4 pin for speaker, 5 pin for keylock, 2 pin power SW**
  - **On board buzzer ×1**
  - Power Connector (4P) x 1
- **On Board RTC**
  - **High precision real time clock/calendar with battery back up**
- **On Board Solid State Disk Socket**
  - Two power pin beside the IDE connector to support Disk On Module (DOM)
- **System Monitor**
  - **Winbond W83782D system monitor controller**
  - **Seven voltage (For +3.3V, +5V, +12V, –12V, Vtt and Vcore ×2,)**
  - **Two Fan speed (For CPU)**
  - **Three temperature**
  - **Drivers support: Windows 95/98/2000, Windows NT4.0**
- **ISAMAX Support**
  - Maximize ISA signals to support ISA cards up to 20
- **Watchdog Timer**
  - 1,2,4…64seconds time-out intervals
- **Dimensions**
  - 340mm(L) × 122mm(W)
- **Power Requirements**
  - +5V 20A (Max.)
  - +12V: 400mA (Max.)
  - -12V: 50mA (Max.)
  - +3.3V: 1.5A

- **Environments**
  - Operating temperatures 0°C to 60°C
  - Storage temperatures -20°C to 80°C
  - Relative humidity 10% to 90% (Non-condensing)
- **Certification**
  - **CE approval**
  - **FCC Class A**
- **Model Available**
  - 3302660:
    Full-size Dual Socket 370 Pentium III FSB 133MHZ UltraDMA 33/66/100 CPU Card with VGA / Dual LAN

Chapter 2 Switches and Connectors



* Default

RTC Clear:

Clear RTC	*Normal	Clear
JP1	2-3	1-2

+5V & +5VSB Option:

	* +5V	+5VSB
JP9	2-3	1-2
JP12	3-5	1-3
JP12	4-6	2-4

VGA Function:

	*Enable	Disable
SW1.1	ON	OFF
SW1.2	OFF	ON

PCI TO PCI Bridge Function:

	*Enable	Disable
SW1.3	ON	OFF
SW1.4	OFF	ON

NOTE:

1 LAN1,LAN2 Function Disable Control by CMOS

2 D1_LED(+5VSB), D7_LED(Power Management Status)

l Connector Position

Connector	Function	Remark
CON1	Keyboard Connector	
CON2	Floppy Connector	
CON3	Parallel Connector	
CON4	Serial Port #2	
CON5	Serial Port #1	
CON6	Standby Power Connector	
CON7	USB Connector	
CON8	4 Pin Power Connector	
CON9	PCI Connector	
CON10	Wake up LAN card Connector	
DIMM2	DDR SDRAM Connector	
DIMM3	DDR SDRAM Connector	
JP1	RTC Clear Connector	
JP2	Reset	
JP3	Disk On Module Power Connector	
JP4	SMBUS Connector	
JP5	HD LED	
JP6	GAL Program Connector	
JP7	PWRBTN	
JP8	Digital Input / Output	
JP9	+5V & +5VSB Option Connector	
JP10	KeyLock Connector	
JP11	IrDA Connector	
JP12	+5V & +5VSB Option Connector	
JP14	System Thermal Connector	
J1	Primary IDE Connector	
J2	Secondary IDE Connector	
J3	Speaker Connector	
J4	RJ45 Connector(LAN2)	
J5	CRT Connector	
J6	CPU2 FAN Connector	
J7	RJ45 Connector(LAN1)	
J8	CPU1 FAN Connector	
J9	PS/2 Keyboard & Mouse Connector	
SOCKET1,SOCKET2	CPU SOCKET	

l CON1: Keyboard Connector

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

l CON2: FLOPPY CONNECTOR

PIN No.	Description	PIN No.	Description
1	GND	2	DRVDEN0#
3	GND	4	NC
5	NC	6	DRVDEN1#
7	GND	8	INDEX#
9	GND	10	MTR0#
11	GND	12	DS1#
13	GND	14	DS0#
15	GND	16	MTR1#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TRK0#
27	GND	28	WRTPRT#
29	NC	30	RDATA#
31	GND	32	HDSEL#
33	GND	34	DSKCHG#

l CON3: 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

l CON4/CON5: Serial Port 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(RI)
10	Ground (GND)

l CON6: Standby Power Connector

PIN No.	Description
1	5V Standby Input
2	Ground
3	ATX Power-ON Remove Control

l CON7: USB Connector

PIN No.	Description
1	VCC
2	USB0-
3	USB0+
4	USB1-
5	USB1+
6	Ground

l CON8: Power Connector

PIN No.	Description
1	+5V
2	+5V
3	Ground
4	Ground

l CON9: PCI Connector

PIN No.	Description	PIN No.	Description
1	+5V	2	AD0
3	AD1	4	AD2
5	AD3	6	AD4
7	AD5	8	AD6
9	AD7	10	Ground
11	+5V	12	AD8
13	AD9	14	AD10
15	AD11	16	AD12
17	AD13	18	AD14
19	AD15	20	Ground
21	+5V	22	AD16
23	AD17	24	AD18
25	AD19	26	AD20
27	AD21	28	AD22
29	AD23	30	Ground
31	+5V	32	AD24
33	AD25	34	AD26
35	AD27	36	AD28
37	AD29	38	AD30
39	AD31	40	Ground
41	+5V	42	BE#0
43	BE#1	44	BE#2
45	BE#3	46	PAR
47	Frame#	48	TRDY#
49	IRDY#	50	Ground
51	+5V	52	STOP#
53	DEVSEL#	54	N/C
55	SERR#	56	REQ#1
57	GNT#1	58	REQ#2

59	GNT#2	60	Ground
61	PCI Clock	62	PCI Clock
63	PCIRST#	64	Lock#
65	IRQ#A	66	IRQ#B
67	IRQ#C	68	IRQ#D

- CON10: LAN CARD EVENT Connector

PIN No.	Description
1	5VSB
2	GND
3	PCI-PME

- JP2: Reset

PIN No.	Description
1	Reset
2	Ground

- JP3: Disk on Module Power Connector

PIN No.	Description
1	+5V
2	Ground

- JP4: SMBUS Connector

PIN No.	Description
1	SMBDATA
2	SMBCLK

- JP5: HD LED Connector

PIN No.	Description
1	+5V
2	HD_LED#

l JP7: PWRBTN Connector

PIN No.	Description
1	3.3VSB
2	PWRBTN

l JP8: Digital Input / Output Connector

PIN No.	Description
1	OUTPUT1
2	INPUT1
3	OUTPUT2
4	INPUT2
5	OUTPUT3
6	INPUT3
7	OUTPUT4
8	INPUT4

l JP10: Keylock

PIN No.	Description
1	+5V
2	N/C
3	Ground
4	Keylock
5	Ground

l JP11: IrDA

PIN No.	Description
1	+5V
2	N/C
3	RX
4	Ground
5	TX

l JP14: System Thermal Connector

PIN No.	Description
1	Thermal Sense
2	Ground

l J1/J2: IDE Interface 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	N/C
33	SA1	34	66Detect
35	SA0	36	SA2
37	HDC CS1#	38	HDC CS3#
39	HDD Active #	40	Ground

- J3: Speaker Connector

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

- J4/J7: LAN Connector

PIN No.	Description
1	TXO+
2	TXO-
3	RXI+
4	TERMPLANE
5	TERMPLANE
6	RXI -
7	TERMPLANE
8	TERMPLANE

- J5: CRT Connector

PIN No.	Description
1	RED
2	Green
3	Blue
4	NC
5	GND
6	GND
7	GND
8	GND
9	+5
10	GND
11	NC
12	Display Data channel data
13	Horizontal Sync
14	Vertical Sync
15	Display Data Channel CLK

- J6/J8: CPU Fan Power Connector

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

- J9: Key Board/Mouse Connector

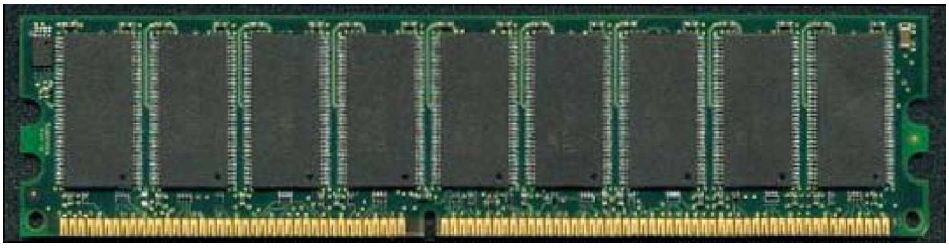
PIN No.	Description
1	KB/DATA
2	MS/DATA
3	Ground
4	5V
5	KB/CLK
6	MS/CLK

Chapter 3 DDR SDRAM

This chapter explains how you can expand capability of your CPU board in such aspects as system memory and CPU.

System Memory

System memory can install to 3 Double Data Memory Module (DDR) DIMM sockets and supports the maximum memory size up to 3GB. The architecture to provide the best choice for performance vs. stability



184 pins DDR SDRAM DIMM Module.
Please check the Position before Install the Module.

Installing DDR DIMM

To install the DDR DIMM's, first make sure the two handles of the DIMM socket are in the "open" position, i.e. the handles stay outward. Slowly slide the DIMM modules along the plastic guides in the both ends of the socket. Then press the DIMM module down right into the socket, until a click is heard. That means the two handles automatically locked the memory modules into the right position of the DIMM socket

Remove DDR DIMMs

To take away the memory module, just push the both handles outward, the memory module will be ejected by the mechanism in the socket.

Chapter 4 BIOS

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.

The Chapter show the currently BIOS setup picture is for reference only, which may change by the BIOS modification in the future. Any Major updated items or re-version.You can visit http://www.globalamericaninc.com for help.

4-1 BIOS Setup

Entering Setup

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

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

If the message disappears before you respond 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 <DEL> 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

Table 4-1 Control Keys

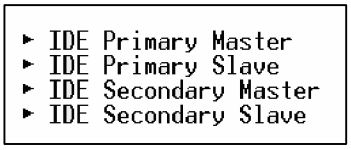
Getting Help

Main Menu

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

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields (as shown in the right view), that means a sub-menu containing additional options for the field can be launched from this field.



To enter the sub-menu, highlight the field and press <Enter>. Then you can use control keys to move between and change the settings of the sub-menu.

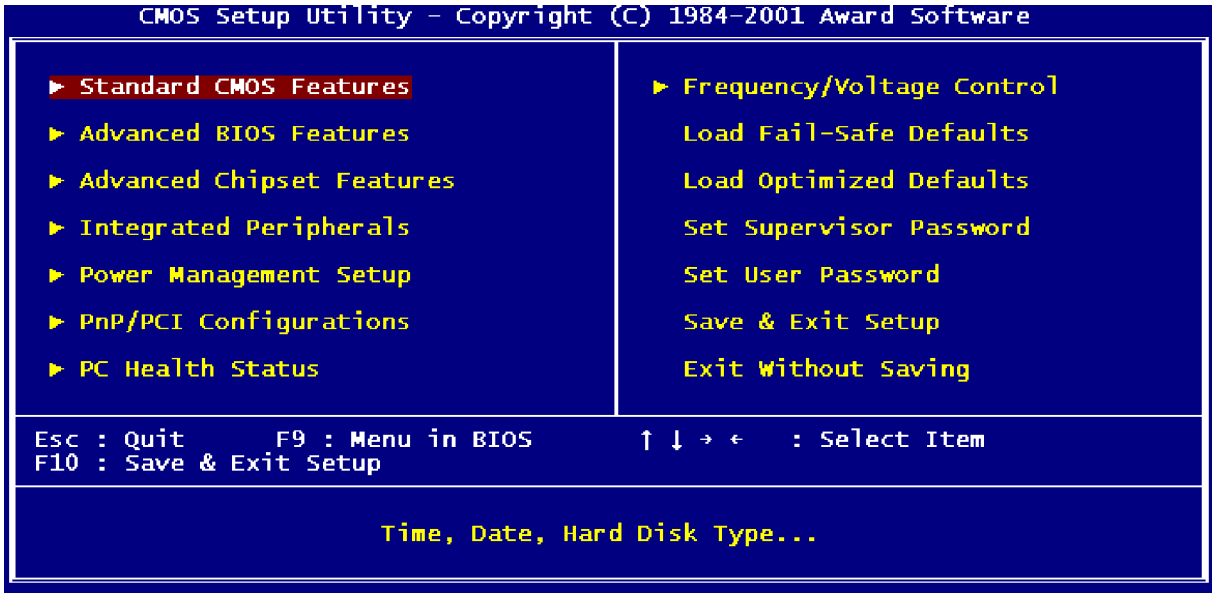
To return to the main menu, press <Esc>.

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 Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management setup

Use this menu to specify your settings for power management

PNP/PCI Configuration

This entry appears if your system supports PnP / PCI.

PC health Status

Display CPU/System Temperature, Fan speed.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set 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.

Save & Exit Setup

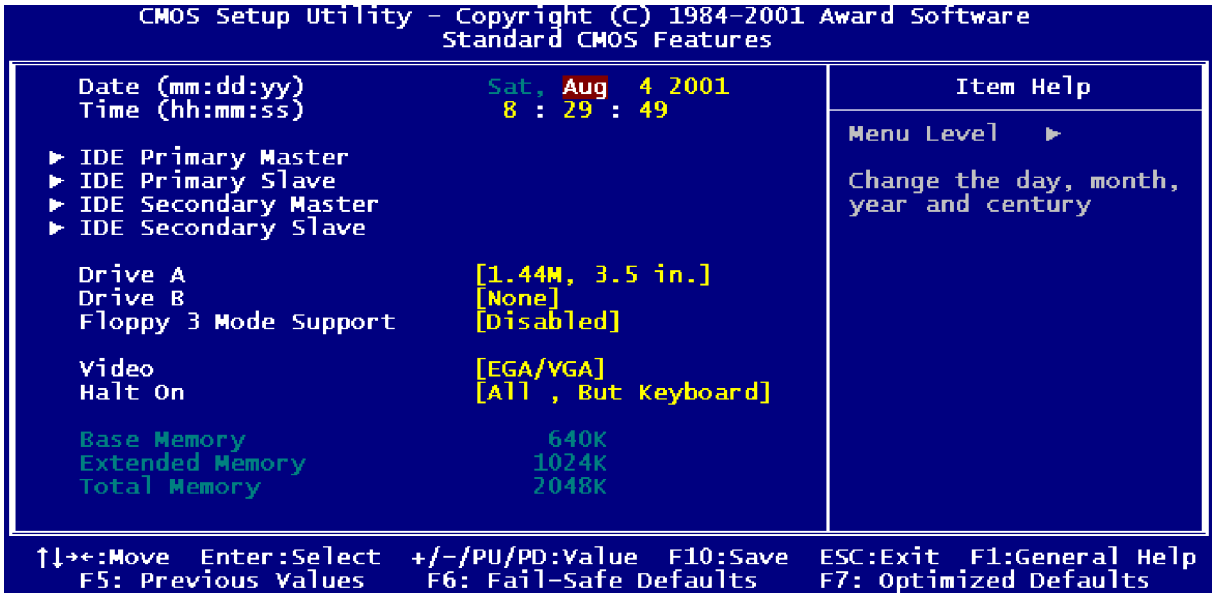
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

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.



Main Menu Selections

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu (Described in Table 4-3)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (Described in Table 4-3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary	Options are in its sub menu (Described in Table 4-3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary	Options are in its sub menu (Described in Table 4-3)	Press <Enter> to enter the sub menu of detailed options
Drive A	None	Select the type of floppy disk drive installed in your system

Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	
Floppy 3 Mode	Disabled Drive A Drive B Both	3 Mode floppy disk drives (FDD) are 3 1/2″ drives used in Japanese computer systems. If you need to access data stored in this kind of floppy, you must select this mode, and of course you must have a 3 Mode floppy drive.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

Table 4-2 Main Menu Selections

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

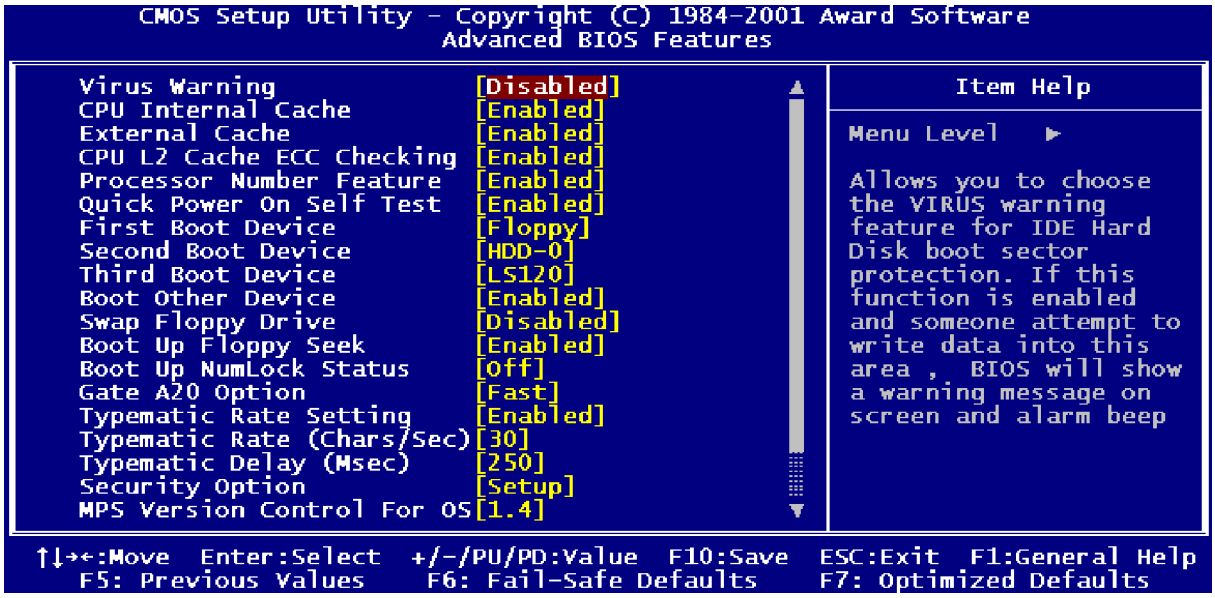
Use the legend keys to navigate through this menu and exit to the main menu. Use Table 3 to configure the hard disk.

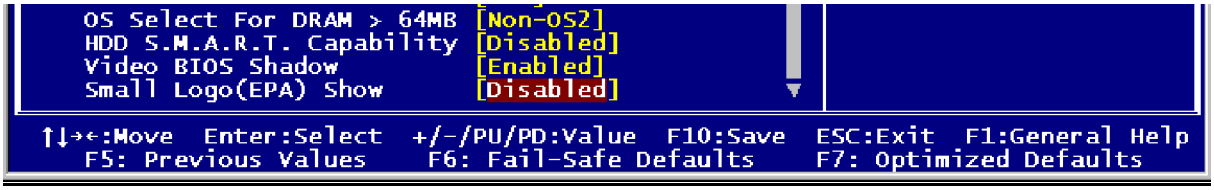
Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
Access Mode	Normal LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Table 4-3 Hard disk selections

Advanced BIOS Features Setup Menu

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.





Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

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 will appear when anything attempts to access the boot sector or hard disk partition table.

```
! WARNING!
Disk boot sector is to be modified
Type "Y" to accept write or "N" to abort write
Award Software, Inc.
```

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 Enable. If your CPU without Internal Cache then this item "CPU Internal Cache" will not be show.

The Choice: Enabled, Disabled

CPU L2 Cache ECC Checking

This category could turn on the ECC of Pentium III L2 Cache or just disable it.

The Choice: Enabled/Disabled

Processor Number Feature

Intel included a serial number in their Pentium III processors as a unique system identifier. For privacy reasons, you can disable this setting to prevent the release of this identifier.

The Choice: Enabled, Disabled

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 Enable, BIOS will shorten or skip some check items during POST.

The Choice: Enabled, Disabled

First / Second / Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, Hdd-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Disabled.

Boot Other Device

If all the selected boot devices failed to boot, select Enabled the BIOS will try to boot from the other boot devices (in a predefined sequence) which are present but not selected as boot devices in the setup (and hence have not yet been tried for booting). If select Disabled, that may be present but not selected as boot devices in setup.

Swap Floppy drive

If the system has two floppy drives, you can swap the logical drive name assignments.

The choice: Enabled, Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot up. Disabling speeds boot up.

The Choice: Enabled, Disabled.

Boot Up NumLock Status

Select power on state for NumLock.

The Choice: On/Off.

Gate A20 Option

Select if chipset or keyboard controller should control GateA20.

Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control Gate A20

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The Choice: Enabled, Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down.

The Choice: 6, 8, 10, 12, 15, 20, 24, 30

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The Choice: 250, 500, 750, 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter 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.

MPS Version control For OS

This field specifies the version of MPS used by the motherboard.

The Choice: 1.1, 1.4

OS Select for DRAM > 64MB

Select the operating system that is running with greater than 64MB of RAM on the system.

The Choice: Non-OS2, OS2

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

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a technology developed to manage the reliability of the hard disk by predicting future device failures. The hard disk needs to be S.M.A.R.T. capable. The settings for this option are Disabled or Enabled.

* Note: S.M.A.R.T. cannot predict all future device failures. S.M.A.R.T. should be used as a warning tool, not as a tool to predict the device reliability.

The Choice: Enabled/Disabled.

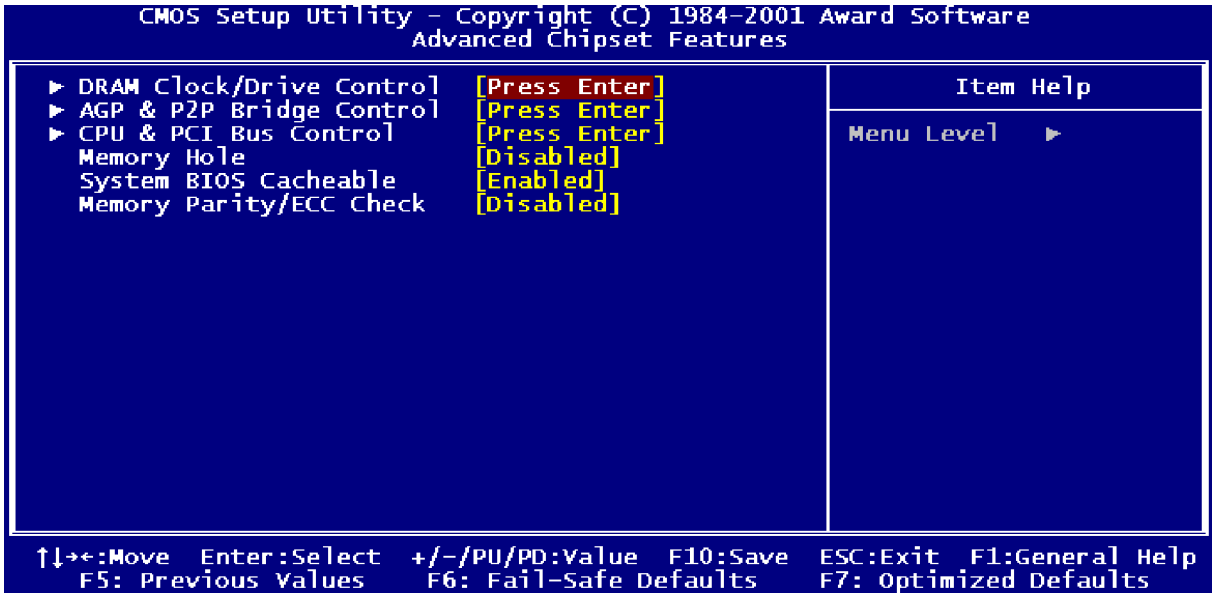
Video BIOS Shadow

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

Advanced 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.

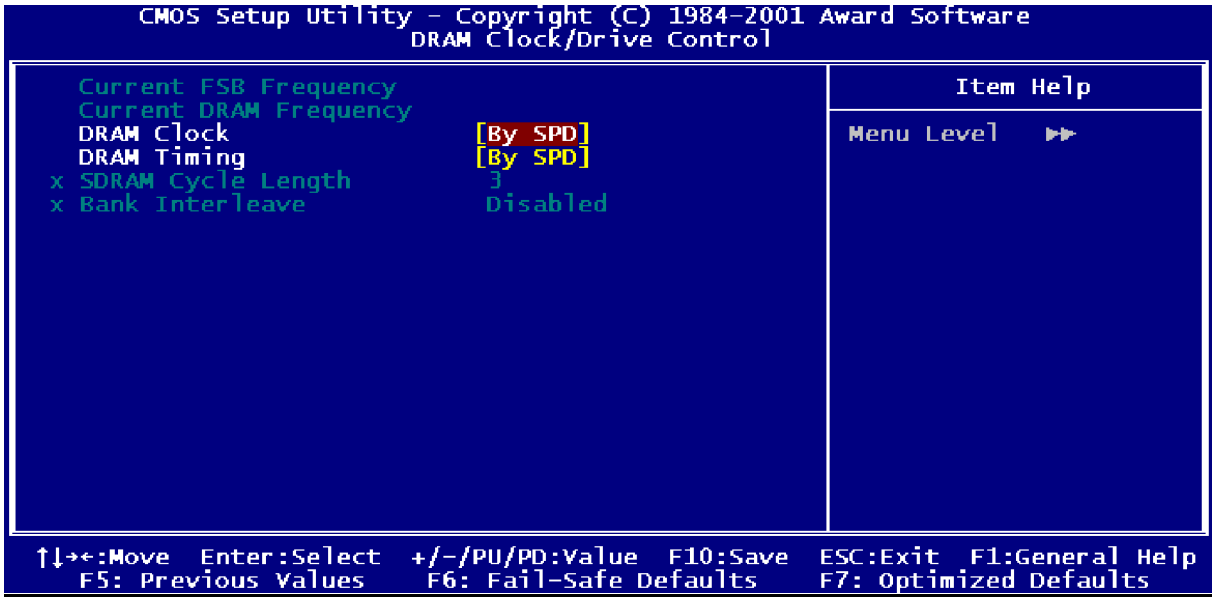


This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

DRAM Clock / Drive Control

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



Current FSB Frequence

Displays current Host Clock frequency.

DRAM Clock

The chipset supports synchronous and asynchronous mode between host clock and DRAM clock frequency.

Host CLK	The DRAM clock will be equal to the Host Clock.
HCLK-33M	The DRAM clock will be equal to the Host Clock minus 33MHz. For example, if the Host Clock is 133MHz, the DRAM clock will be 100MHz.
HCLK+33M	The DRAM clock will be equal to Host Clock plus 33MHz. For example, if the Host Clock is 100MHz, the DRAM clock will be 133MHz.
By SPD	BIOS automatically determine the DRAM clock frequency by SPD IC on the DRAM card.

DRAM Timing

Selects whether the SPD IC on the DRAM card or Manual controls DRAM timing.

Selecting Manual allows you to control SDRAM Cycle Length and Bank Interleave by yourself.

It is strongly suggested to select By SPD to avoid causing any system error.

The Choice: Manual, By SPD.

SDRAM Cycle Length

Controls the time delay (in clock cycles) before SDRAM starts a read command after receiving it.

The Choice: 3, 2.5, 2.

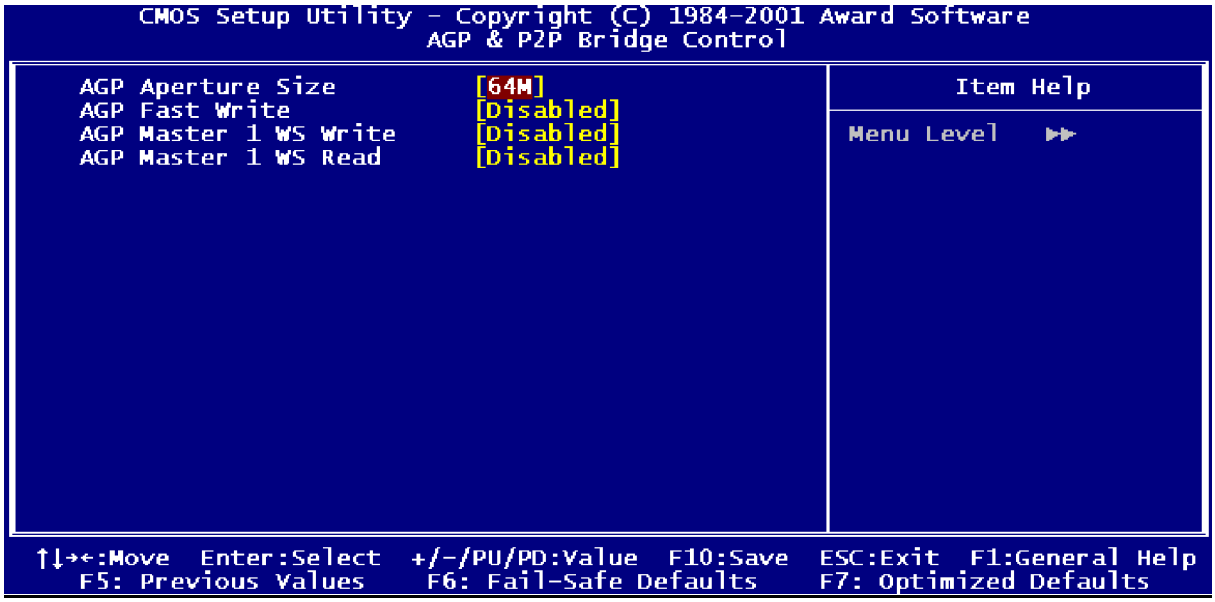
Bank Interleave

Enables or disables bank interleave feature.

The Choice: Disabled, 2 Bank, 4 Bank.

CPU & PCI Bus Control

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



CPU to PCI Write Buffer

Enables or disables CPU to PCI Post-Write function.

The Choice: Enabled, Disabled.

PCI Delay Transaction

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

The Choice: Enabled, Disabled.

Memory Hole

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.

The Choice: Disabled, 15M - 16M.

System BIOS Cacheable

Selecting Enabled 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.

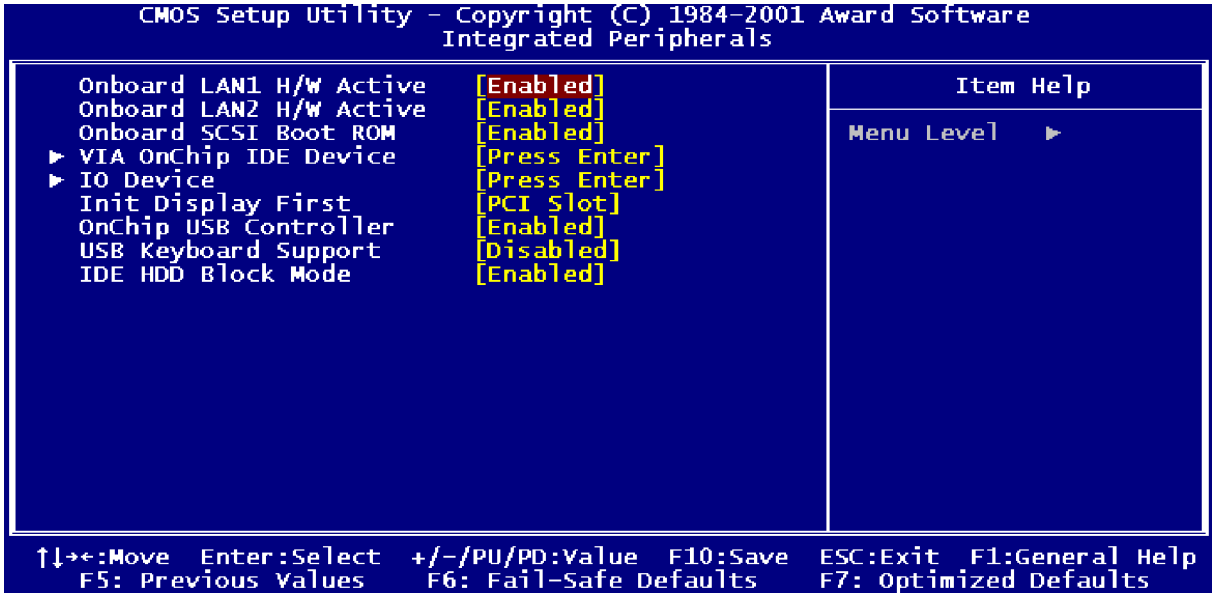
The choice: Enabled, Disabled.

Memory Parity/ECC Check

Select Parity/ECC (error-correcting code) according to the type of installed DRAM.

The Choice: Enabled, Disabled.

Integrated Peripherals



Onboard VGA/LAN1/LAN2/SCSI H/W Active

Select the enabled if there is a H/W active installed on the system board and you wish to use it.

Choice: Enabled, Disabled.

Onboard LAN Boot ROM

Select enabled if you wish to run the LAN Boot ROM as boot-up your computer.

Choice: Disabled, LAN1, LAN2.

Onboard SCSI Boot ROM

Select enabled if you wish to run the SCSI Boot ROM as boot-up your computer.

Choice: Enabled, Disabled.

Init Display First

This item allows you to decide to active whether PCI Slot, AGP, or on-board VGA first.

The Choice: PCI Slot, Onboard, AGP.

USB Controller

The item specifies which USB (Universal Serial Bus) Port is enabled.

The Choice: All Disabled, All Enabled, 1&2 USB Port, 2&3 USB Port, 1&3 USB Port, 1 USB Port, 2 USB Port, 3 USB Port.

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.

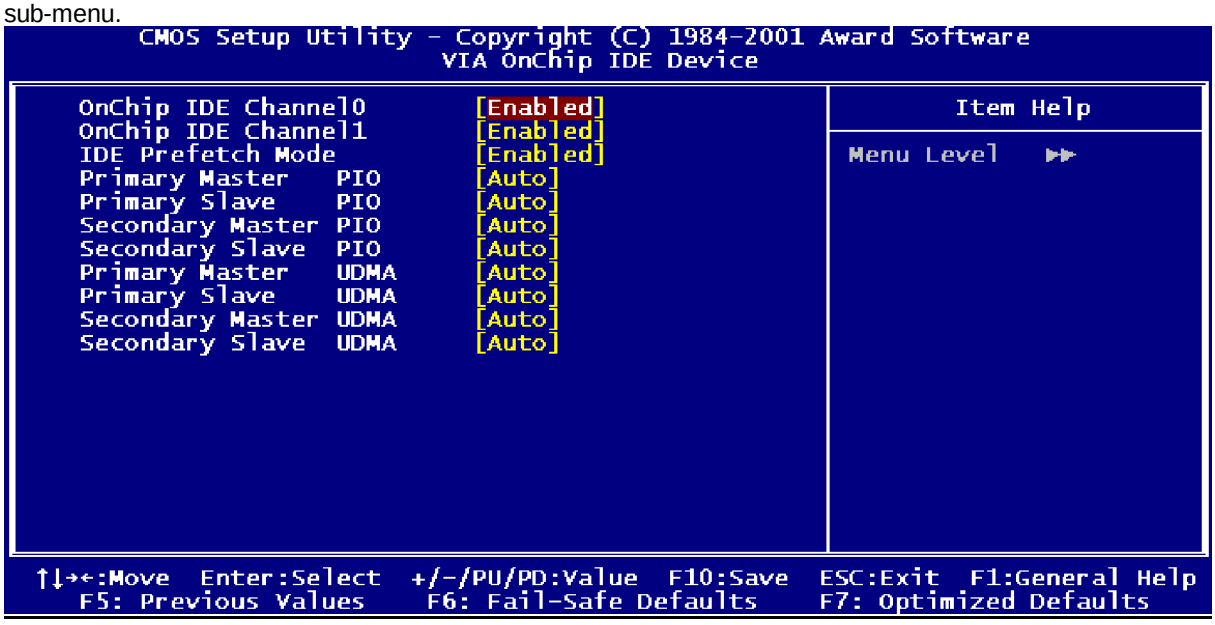
IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

The Choice: Enabled, Disabled.

VIA OnChip IDE Device

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



OnChip IDE Channel0/Channel1

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate this IDE interface. Select Disabled to deactivate this interface

The choice: Enabled, Disabled.

IDE Prefetch Mode

The onboard IDE drive interfaces supports prefetching, for faster drive accesses. Set to Disabled if your primary and/or econdary add-in IDE interface does not support prefetching.

The choice: Enabled, Disabled.

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.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3 and Mode 4.

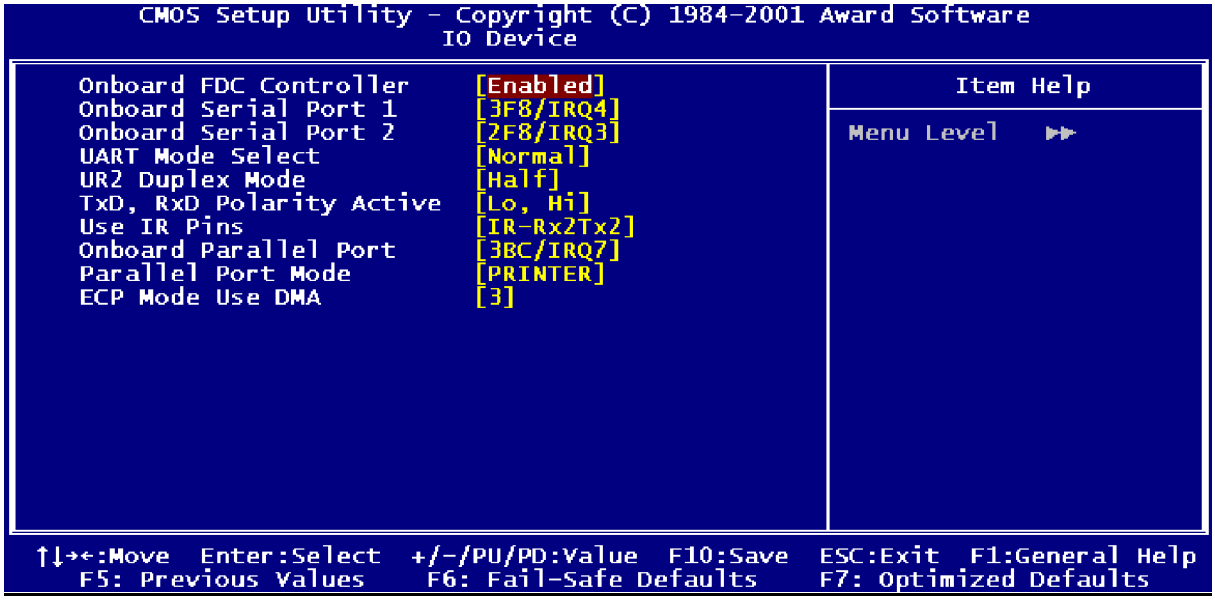
Primary/Secondary Master/Slave UDMA

Ultra DMA 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, select Auto to enable BIOS support.

The Choice: Auto, Disabled.

IO Device

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

The Choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The Choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled, Auto.

UART Mode Select

This item allows you to select second serial port mode.

The Choice: Normal, IrDA, ASKIR.

UR2 Duplex Mode

This item allows you to select the IR half/full duplex function.

The Choice: Half, Full.

TxD, RxD Polarity Active

This item allows you to determine the active of IR. TxD, RxD signal.

The Choice: "Hi, Hi", "Lo, Lo", "Lo, Hi", "Hi, Lo".

Onboard Parallel Port

This item allows you to determine access On-Board parallel port controller with which I/O address.

The Choice: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

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

The Choice: SPP, ECP, PRINTER, EPP1.9+SPP, EPP1.9+ECP, EPP1.7+SPP, EPP1.7+ECP.

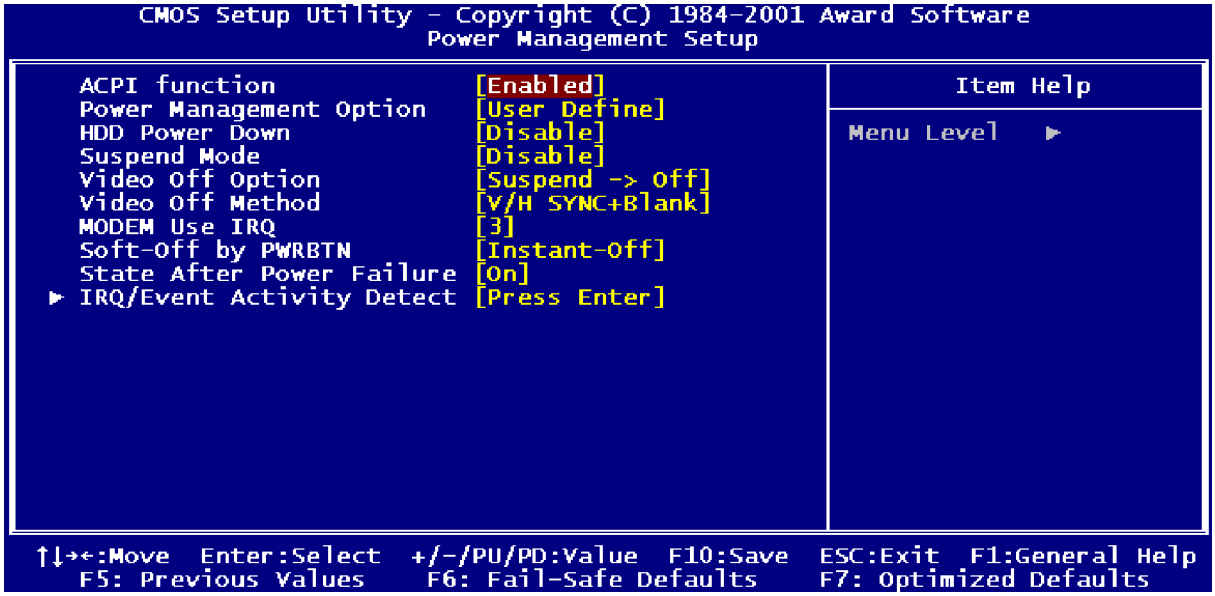
ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode.

The Choice: 3, 1.

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.



ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (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. HDD Power Down
2. Suspend Mode

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

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr.
Max. Power Saving	Maximum power management. Suspend Mode = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

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.

The Choice: ranges from 1 min. to 15 min. and Disable.

Suspend Mode

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

The Choice: ranges from 1 min. to 1 hr. and Disable.

Video Off Option

This determines the manner in which the monitor is blanked.

The Choice: Always On, Suspend -> Off.

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 Support	Initial display power management signaling.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The choice: 3, 4, 5, 7, 9, 10, 11, NA.

Soft-Off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

The Choice: Delay 4 Sec, Instant-Off.

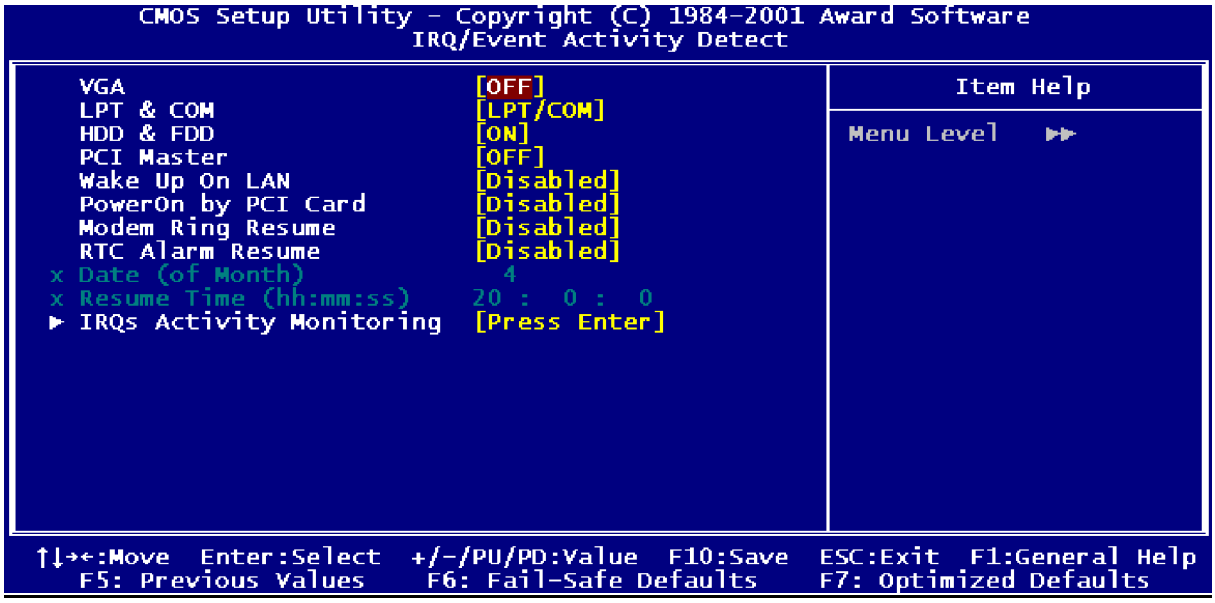
State After Power Failure

Remember the power status, once the Power Failure.

The Choice: Auto, On, Off.

IRQ/Event Activity Detect

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



VGA / LPT & COM / HDD & FDD / PCI Master

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Wake Up On LAN

The choice: Enabled, Disabled.

PowerOn by PCI Card

When enabled, you can "wake-up" your system using a PCI rev.2.2 card, when a "PME" event occurring.

The Choice: Enabled, Disabled.

Modem Ring Resume

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.

RTC Alarm Resume

This is to enable or disable the feature of booting up the system on a scheduled time/date.

The Choice: Enabled, Disabled.

Date (of Month)

Specifies the date for RTC Alarm Resume.

The Choice: 0~31.

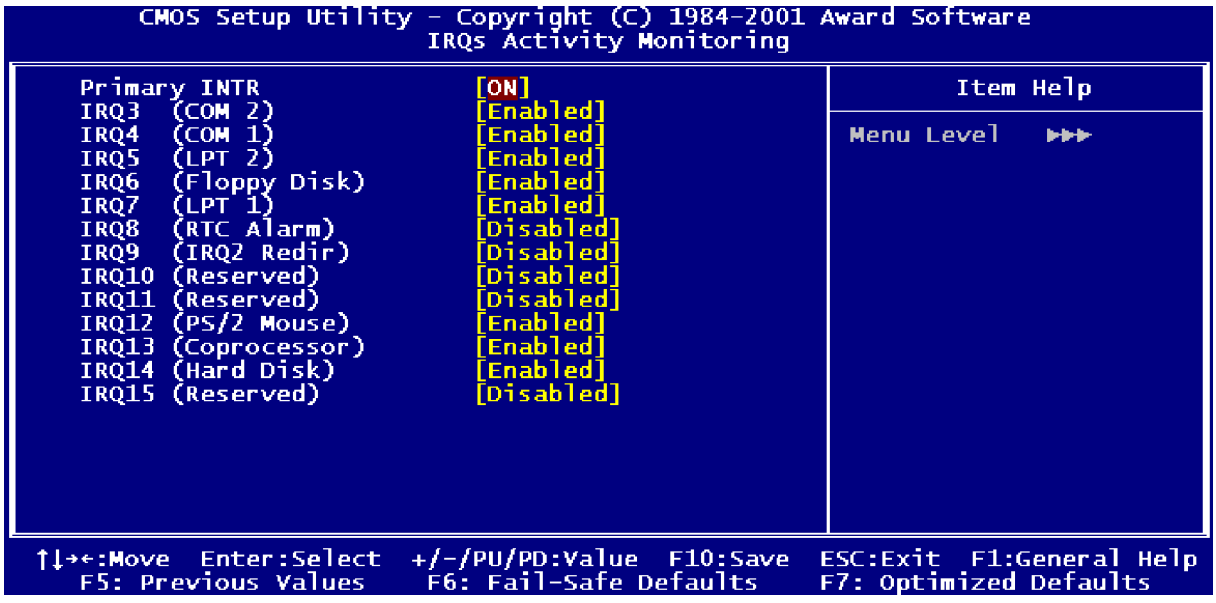
Resume Time (hh:mm: ss)

Specifies the time for RTC Alarm Resume.

Format is <hour><minute><second>.

IRQs Activity Monitoring

Press <Enter> to enter the sub-menu, and you will see a sub-menu.



PM events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as Enabled, even when the system is in a power down mode.

Primary INTR

When this is set to On, any event occurring will wake up the system which has been powered down.

The Choice: ON, OFF.

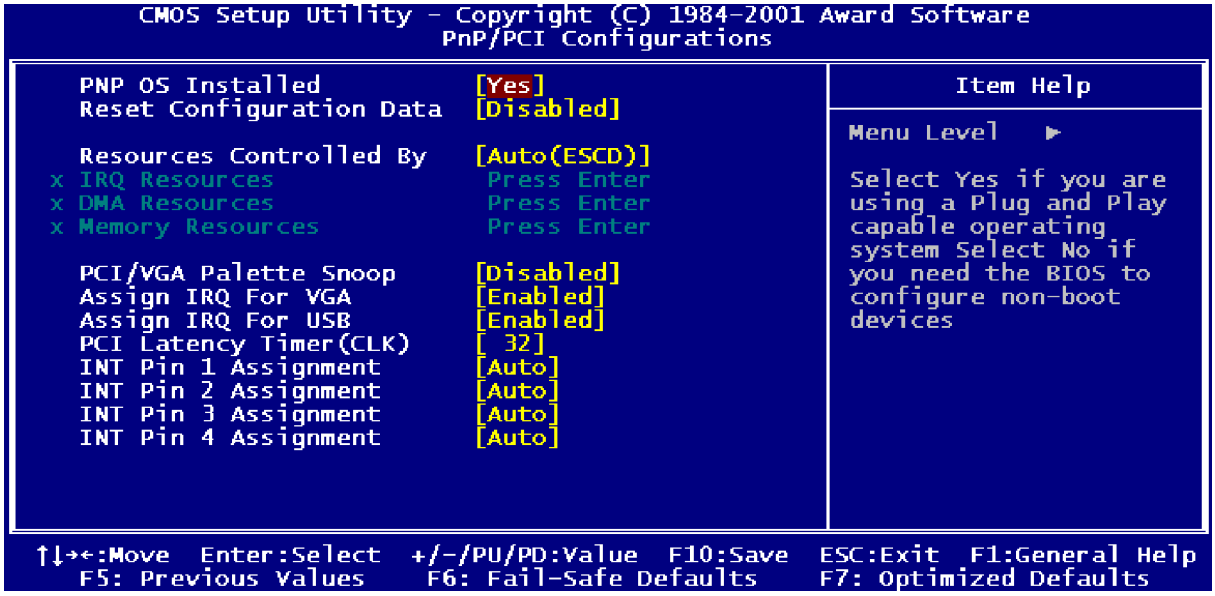
IRQ [3-15]

Enables or disables the monitoring of the specified IRQ line. If set to Enabled, the activity of the specified IRQ line will prevent the system from entering power saving modes or awaken it from power saving modes.

The Choice: Enabled, Disabled.

PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or Peripheral Component Interconnect, 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.



PNP OS Installed

Select Yes if the system operating environment is Plug-and-Play aware (e.g. Windows 95).

The Choice: Yes, No.

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 Card and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The Choice: Enabled, Disabled.

Resources Controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field.

The Choice: Auto (ESCD), Manual.

IRQ Resources

Press <Enter> to enter the sub-menu, and you will see a sub-menu.

IRQ Assigned To

This item allows you to determine the IRQ assigned to PCI Device or Reserved.

The Choice: PCI Device, Reserved.

Memory Resources

Press <Enter> to enter the sub-menu, and you will see a sub-menu.

Reserved Memory Base

Some add-in cards ask for a specific address space in the system memory. This field specifies the memory base (start address) of the reserved memory space.

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

Reserved Memory Length

This item is available only when the Used MEM Base Addr has been assigned a base address. It specifies the memory size for the add-in card used.

The Choice: 8K, 16K, 32K, 64K

PCI / VGA Palette Snoop

Leave this field at Disabled.

The Choice: Enabled, Disabled.

Assign IRQ For VGA / USB

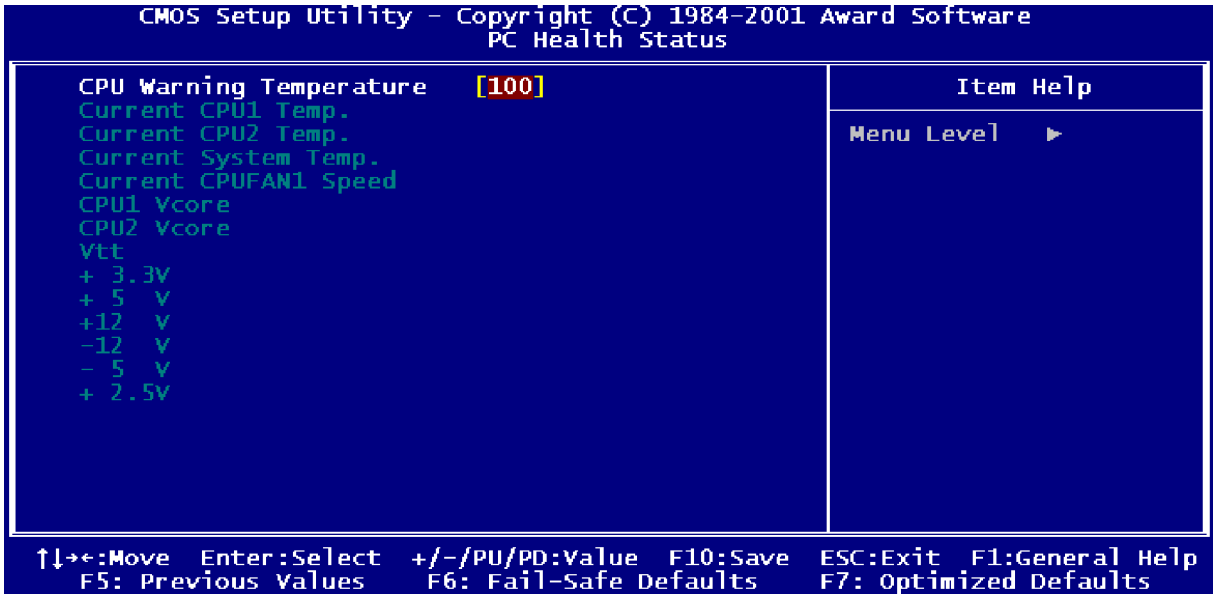
Enable/Disable to assign a IRQ for VGA/USB.

The Choice: Enabled, Disabled.

INT Pin 1~4 Assignment

The Choice: Auto,3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

PC Health Status



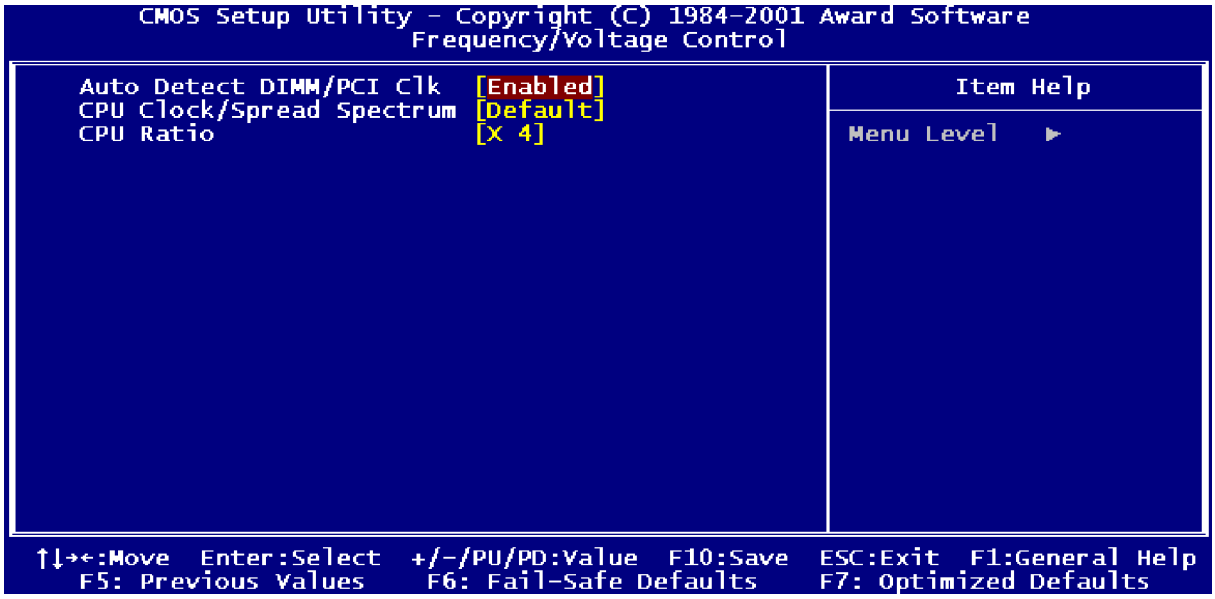
CPU Warning Temperature

This item is used to specify a thermal standard for CPU. If CPU temperature reaches the specified standard, the system will issue a warning and allows you to prevent the CPU overheat problem. The Choice: 30-120.

Current CPU1/CPU2 Temp., Current CPUFAN1/2 Speed, CPU1/2 Vcore, Vtt, +3.3/+5/+12/-12/-5/+2.5V, Current Extend FAN1/2/3 Speed

These items display the current status of all of the monitored hardware devices/components such as CPU voltages, temperatures and fans's speed.

Frequency/Voltage Control



Auto Detect DIMM/PCI Clk

Use this item to enable or disable the feature of auto detecting the clock frequency of the installed DRAM DIMMs and PCI cards.

The Choice: Enabled, Disabled.

Spread Spectrum Modulated

This item is used to enable or disable the clock generator's Spread Spectrum feature.

The Choice: Enabled, Disabled.

CPU Clock

This item allows you to set up the CPU clock, but this function depends on different CPU performance.

It is highly recommended to use the default setting by the CPU ID auto detect. The standard CPU Clock will be 100MHZ or 133MHZ. If you set the wrong CPU clock cause the system can't power on, please do hardware clear the CMOS to reset the BIOS default value then setup the correct CPU clock. Or you can press INSERT key to power on system to restore the BIOS default.

CPU Ratio

This item allows you to set up the CPU clock ratio, but this function depends on different CPU performance. It is only effective for those clock ratio haven't been locked.

The Choice: X3.0~X8.0.

Supervisor/User Password Setting

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

supervisor password : can enter and change the options of the setup menus.

user password : just can only 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 3). 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.

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.

4-2 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.

BIOS ROM checksum error-System halted.
The checksum of ROM address F0000H-FFFFFH is bad.

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.

FLOOPY DISK(S) fail (80)

Unable to reset floppy subsystem.

FLOOPY DISK(S) fail (40)

Floppy Type dismatch.

Hard Disk(s) fail (80)

HDD reset failed

Hard Disk(s) fail (40)

HDD controller diagnostics failed.

Hard Disk(s) fail (20)

HDD initialization error.

Hard Disk(s) fail (10)

Unable to recalibrate fixed disk.

Hard Disk(s) fail (08)

Sector Verify failed.

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 configurating 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.

Keyboard is locked out-Unlock the key

BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Manufacturing POST loop

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

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 test fail

BIOS reports the memory test fail if the onboard memory is tested error.

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.

Should Be Empty But EISA Board Found
PLEASE RUN EISA CONFIGURATION UTILITY

A valid board ID was found in a slot that was configurated as having no board ID.

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

Should Have EISA Board But Not Found
PLEASE RUN EISA CONFIGURATION UTILITY

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

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

Slot Not Empty

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

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

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.

Wrong Board In Slot
PLEASE RUN EISA CONFIGURATION UTILITY

The board ID does not match the ID stored in the EISA non-volatile memory.

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

4-3 BIOS Reference - POST Codes

POST (hex)	Description
CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
0h1	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved
03h	Initial Superio_Early_Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved
0Ah	1. Disable PS/2 mouse interface (optional). 2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). 3. Reset keyboard for Winbond 977 series Super I/O chips.

POST (hex)	Description
0Bh	Reserved
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial Early_Init_Onboard_Generator switch.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial EARLY_PM_INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)

POST (hex)	Description
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved
23h	1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. 2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead. 3. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information. 4. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 5. Early PCI initialization: -Enumerate PCI bus number -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0.
24h	Reserved
25h	Reserved
26h	Reserved
27h	Initialize INT 09 buffer
28h	Reserved
29h	1. Program CPU internal MTRR (P6 & PII) for 0-640K memory address. 2. Initialize the APIC for Pentium class CPU. 3. Program early chipset according to CMOS setup. Example: onboard IDE controller. 4. Measure CPU speed. 5. Invoke video BIOS.
2Ah	Reserved
2Bh	Reserved

POST (hex)	Description
2Ch	Reserved
2Dh	1. Initialize multi-language 2. Put information on screen display, including Award title, CPU type, CPU speed ....
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard except Winbond 977 series Super I/O chips.
34h	Reserved
35h	Reserved
36h	Reserved
37h	Reserved
38h	Reserved
39h	Reserved
3Ah	Reserved
3Bh	Reserved
3Ch	Test 8254
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1.
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2.
41h	Reserved
42h	Reserved
43h	Test 8259 functionality.

POST (hex)	Description
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K page. 2. Program write allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved
50h	Initialize USB
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Reserved
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	1. Display PnP logo. 2. Early ISA PnP initialization

POST (hex)	Description
	-Assign CSN to every ISA PnP device.
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved
5Dh	1. Initialize Init_Onboard_Super_IO switch. 2. Initialize Init_Onbaord_AUDIO switch.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reserved
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved
6Bh	Program chipset registers according to items described in Setup & Auto-configuration table.

POST (hex)	Description
6Ch	Reserved
6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".
6Eh	Reserved
6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
70h	Reserved
71h	Reserved
72h	Reserved
73h	(Optional Feature) Enter AWDFLASH.EXE if : -AWDFLASH is found in floppy drive. -ALT+F2 is pressed
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM.....
76h	Reserved
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Reserved
7Dh	Reserved
7Eh	Reserved
7Fh	1. Switch back to text mode if full screen logo is supported.

POST (hex)	Description
	-If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: 2. Clear EPA or customization logo.
80h	Reserved
81h	Reserved
E8POST.ASM starts	
82h	1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen logo) 3. If password is set, ask for password.
83h	Save all data in stack back to CMOS
84h	Initialize ISA PnP boot devices
85h	1. USB final Initialization 2. NET PC: Build SYSID structure 3. Switch screen back to text mode 4. Set up ACPI table at top of memory. 5. Invoke ISA adapter ROMs 6. Assign IRQs to PCI devices 7. Initialize APM 8. Clear noise of IRQs.
86h	Reserved
87h	Reserved
88h	Reserved
89h	Reserved
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code

POST (hex)	Description
94h	1. Enable L2 cache 2. Program boot up speed 3. Chipset final initialization. 4. Power management final initialization 5. Clear screen & display summary table 6. Program K6 write allocation 7. Program P6 class write combining
95h	1. Program daylight saving 2. Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick 5. Build MSIRQ routing table.
FFh	Boot attempt (INT 19h)

Any advice or comments about our products and service, or anything we can help you with please don't hesitate to contact with us. We will do our best to support you for your products, projects and business

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