Table of Content

BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Power ON the computer and press <Del> immediately will allow you to enter Setup.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	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>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
<F7>	Load the Setup Defaults
<F8>	Reserved
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

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

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu (For example: BIOS Ver. :F2)

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 eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

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↑↓Standard CMOS Features	Select Language
↑↓Advanced BIOS Features	Load Fail-Safe Defaults
↑↓Advanced Chipset Features	Load Optimized Defaults
↑↓Integrated Peripherals	Set Supervisor Password
↑↓Power Management Setup	Set User Password
↑↓PnP/PCI Configurations	Save & Exit Setup
↑↓PC Health Status	Exit Without Saving
↑↓Frequency/Voltage Control	
ESC: Quit	F3: Change Language
F8: Dual BIOS / Q-Flash	F10: Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu

✍ **Standard CMOS Features**

This setup page includes all the items in standard compatible BIOS.

✍ **Advanced BIOS Features**

This setup page includes all the items of Award special enhanced features.

✍ **Advanced Chipset Features**

This setup page includes all the items of chipset special features.

✍ **Integrated Peripherals**

This setup page includes all onboard peripherals.

✍ **Power Management Setup**

This setup page includes all the items of Green function features.

✍ **PnP/PCI Configurations**

This setup page includes all the configurations of PCI & PnP ISA resources.

✍ **PC Health Status**

This setup page is the System auto detect Temperature, voltage, fan, speed.

✍ **Frequency/Voltage Control**

This setup page is control CPU's clock and frequency ratio.

✍ **Select Language**

This setup page is select multi language.

✍ **Load Fail-Safe Defaults**

Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

✍ **Load Optimized Defaults**

Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

✍ **Set Supervisor password**

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

✍ **Set User password**

Change, set, or disable password. It allows you to limit access to the system.

✍ **Save & Exit Setup**

Save CMOS value settings to CMOS and exit setup.

✍ **Exit Without Saving**

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

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Standard CMOS Features

Date (mm:dd:yy)	Mon, Feb 21 2000	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level
↴IDE Primary Master	[Press Enter None]	
↴IDE Primary Slave	[Press Enter None]	
↴IDE Secondary Master	[Press Enter None]	
↴IDE Secondary Slave	[Press Enter None]	
Drive A	[1.44M, 3.5"]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	130048K	
Total Memory	131072K	

↴↴↴↴: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 2: Standard CMOS Features

✍ Date

The date format is <week>, <month>, <day>, <year>.

- Week — The week, from Sun to Sat, determined by the BIOS and is display only
- Month — The month, Jan. Through Dec.
- Day — The day, from 1 to 31 (or the maximum allowed in the month)
- Year — The year, from 1994 through 2079

✍ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

✍ IDE Primary Master, Slave / Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- Capcity: The hard disk size. The unit is Mega Bytes.
- Access Mode: The options are: Auto / Large / LBA / Normal.
- Cylinder: The cylinder number of hard disk.
- Head The read / Write head number of hard disk.
- Precomp The cyliner number at which the disk driver changes the write current.
- Landing Zone The cylinder number that the disk driver heads (read/write) are seated when the disk drive is parked.
- SECTORS The sector number of each track define on the hard disk.

If a hard disk has not been installed select NONE and press <Enter>.

✍ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

- None No floppy drive installed
- 360K, 5.25 in. 5.25 inch PC-type standard drive; 360K byte capacity.
- 1.2M, 5.25 in. 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
- 720K, 3.5 in. 3.5 inch double-sided drive; 720K byte capacity
- 1.44M, 3.5 in. 3.5 inch double-sided drive; 1.44M byte capacity.
- 2.88M, 3.5 in. 3.5 inch double-sided drive; 2.88M byte capacity.

✍ Floppy 3 Mode Support (for Japan Area)

- Disabled Normal Floppy Drive. (Default value)
- Drive A Enabled 3 mode function of Drive A.
- Drive B Enabled 3 mode function of Drive B.
- Both Drive A & B are 3 mode Floppy Drives.

✍ Halt on

The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected and you will be prompted.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
All, But Keyboar	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

BIOS Flash Protection	[Auto]	
First Boot Device	[Floppy]	Item Help
Second Boot Device	[HDD-0]	Menu Level
Third Boot Device	[CDROM]	
Boot Up Floppy Seek	[Disabled]	
BootUp Num-Lock	[On]	
Password Check	[Setup]	
Interrupt Mode	[APIC]	
MPS Version Control For OS	[1.4]	
HDDS.M.A.R.T. Capability	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 3: Advanced BIOS Features

✍ BIOS Flash Protection

This feature allows you determine the states that flash BIOS.

- Enabled — During POST, DMI/ESCD would not be updated. Butflash tools can update BIOS always
- Auto — BIOS enables flash write access automatically when updating BIOS data/ DMI/ESCD. (Default Value)

✍ First / Second / Third Boot device

This feature allows you to select the boot device priority.

- Floppy — Select your boot device priority by Floppy.
- LS120 — Select your boot device priority by LS120.
- HDD-0~3 — Select your boot device priority by HDD-0~3.
- SCSI — Select your boot device priority by SCSI.
- CDROM — Select your boot device priority by CDROM.

- LAN — Select your boot device priority by LAN.
- USB-CDROM — Select your boot device priority by USB-CDROM.
- USB-ZIP — Select your boot device priority by USB-ZIP.
- USB-FDD — Select your boot device priority by USB-FDD.
- USB-HDD — Select your boot device priority by USB-HDD.
- ZIP — Select your boot device priority by ZIP.
- Disabled — Disabled this function.

✍ Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks.

- Enabled — BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80 tracks.
- Disabled — BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K. (Default value)

✍ Boot Up NumLock

When set On, allows the BIOS to automatically enable the Num Lock Function when the system boots up.

- On — Keypad is number keys. (Default value)
- Off — Key pad is arrow keys.

✍ Password Check

This feature allows you to limit access to the system and Setup, or just to Setup.

- System — The user must enter correct password in order to access the system and/or BIOS setup.
- Setup — The user must enter correct password in order to access BIOS setup utility. (Default value)

☞ Interrupt Mode

- APIC — Through IOAPIC generate more IRQ for system use.(Default value)
- PIC — Use AT stantard IRQ controlles to generate IRQ.

When you already have IOAPIC enable system and want to upgrade the system please note, since running an IOAPIC enabled OS (like Windows NT,Windows 2000, Windows XP...) system with none IOAPIC HW support will cause the system to hang. Following are some situations users might run into:

1.An IOAPIC enabled OS and change the BIOS setting from IOAPIC to PIC, this will cause your system to hang.

✍ MPS Version Control For OS

When two CPUs onboard (not this board) this feature allows you to select MPS(Multi Processor Specification) version control for OS when logo test excutes.

(Support Multi Processor Specification revision 1.4)

Note: Some old MPS OS support 1.1 version only

- 1.4 — Support MPS Version 1.4 . (Default Value)
- 1.1 — Support MPS Version 1.1.

✍ HDD S.M.A.R.T. Capability

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issue a warning with LDCM installed.

- Enabled — Enabled HDD S.M.A.R.T. Capability.
- Disabled — Disabled HDD S.M.A.R.T. Capability. (Default value)

Advanced Chipset Features

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Advanced Chipset Features

Configure DRAM Timing	[SPD]	Item Help
☞CAS Latency Time	2	Menu Level
☞Active to Precharge Delay	5	
☞DRAM RAS# to CAS# Delay	2	
☞DRAM RAS# Precharge	2	
☞Refresh Mode Select	[15.6 usec]	
DRAM Data Integrity Mode	Non-ECC	
DRAM Read Thermal Mgmt	[Disable]	
Delay Transaction	[Enable]	
AGP Aperture Size(MB)	[64]	
Delay Prior to Thermal	[16Min]	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Figure 4: Advanced Chipset Features

✍ Configure DRAM Timing

Warning: Wrong DRAM Timing may make system can't boot. Clear CMOS to overcome wrong Timing issue)

- SPD — Set Configure DRAM Timing Control by SPD. (Default value)
- Manual — Set Configure DRAM Timing Control by Manual.

✍ CAS latency Time

This feature allows you to select the CAS latency Time, When any DDR DIMM installed.

- 2.5 — Set CAS latency Time is 2.5.
- 2 — Set CAS latency Time is 2. (Default Value)
- 1.5 — Set CAS latency Time is 1.5.

✍ Active to Precharge Delay

This feature allows you to set ACtive to Precharge Delay, When any DDR DIMM installed.

- 5 Setactive to Precharge delay timing is 5 clk. (Default value)
- 6 Setactive to Precharge delay timing is 6 clk.
- 7 Setactive to Precharge delay timing is 7 clk.

✍ DRAM RAS# to CAS# delay

This feature allows you to set the delay time that from the DRAM RAS# active to CAS#.

- 3 SetDDR RAM RAS# to CAS# delay 3 SCLKs.
- 2 SetDDR RAM RAS# to CAS# delay 2 SCLKs.(Default value)

✍ DRAM RAS# Precharge

This feature allows you to set the DRAM RAS# Precharge Time.

- 3 SetDDR RAM RAS# Precharge Time to 3.
- 2 SetDDR RAM RAS# Precharge Time to 2. (Default value)

✍ Refresh Mode Select

- 7.8usec Setactive to Refresh mode timing is 7.8 usec.
- 15.6usec Setactive to Refresh mode timing is 15.6 usec. (Default value)
- 64 usec Setactive to Refresh mode timing is 64 usec.

✍ DRAM Data Integrity Mode

This feature allows you to set the DRAM data Integrity Mode

- Non-ECC Set the DRAM data Integrity Mode is Non-ECC (Default)
- ECC Set the DRAM data Integrity Mode is ECC.

✍ DRAM Read Thermal Mgmt

This feature allows you to set the DRAM Read Thermal Management register which in the chip of Intel 845 for the trade-off between system temperature and performance.

- Disabled — Disabled this function.(Default)
- Enabled — Enabled can reduce DRAM heat issue.

Note: DRAM heat thermal mangement is always enabled in write cycle.

✍ Delay Transaction

- Disabled — Normal operation.
- Enabled — Setting at Enabled will abort the current PCI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master. it will enhance the system performance.

✍ AGP Graphics Aperture Size

(This feature allows you to select the main memory frame size for AGP use)

- 4 — AGP Graphics Aperture Size is 4MB.
- 8 — AGP Graphics Aperture Size is 8MB.
- 16 — AGP Graphics Aperture Size is 16MB
- 32 — AGP Graphics Aperture Size is 32MB.
- 64 — AGP Graphics Aperture Size is 64MB.(Default Value)
- 128 — AGP Graphics Aperture Size is 128MB.
- 256 — AGP Graphics Aperture Size is 256MB.

✍ Delay Prior to Thermal

This feature allows you to select the Delay Prior to thermal.

- 4Min — Set active CPU Thermal function after booting 4 Min.
- 8Min — Set active CPU Thermal function after booting 8 Min.
- 16Min — Set active CPU Thermal function after booting 16 Min. (Default Value)
- 32Min — Set active CPU Thermal function after booting 32 Min.

Integrated Peripherals

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Integrated Peripherals

On-Chip Primary PCI IDE	[Enabled]	Item Help
On-Chip Secondary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level
IDE Primary Slave PIO	[Auto]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Primary Master UDMA	[Auto]	
IDE Primary Slave UDMA	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
IDE1 Conductor Cable	[Auto]	
IDE2 Conductor Cable	[Auto]	
USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
Init Display First	[AGP]	
AC97 Audio	[Auto]	
AC97 Modem	[Auto]	
Onboard USB 2.0 Device	[Enabled]	
Onboard Sound	[Enabled]	
Onboard ATA/RAID Device	[Enabled]	
Power On by Mouse	[Disabled]	
Power On by Keyboard	[Disabled]	
☞KB Power ON Password	Enter	
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
☞UR2 Duplex Mode	Half	

Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
☞ECP Mode Use DMA	3	
AC BACK Function	[Soft-Off]	
CIR Port Address	[Disabled]	
☞CIR Port IRQ	11	
SMART Card Interface	Enabled	
MS/SDI Interface	Memory Stick	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Figure 5: Integrated Peripherals

✍ On-Chip Primary PCI IDE

When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.

- Enabled — Enable onboard 1st channel IDE port. (Default value)
- Disabled — Disable onboard 1st channel IDE port.

✍ On-Chip Secondary PCI IDE

When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.

- Enabled — Enable onboard 2nd channel IDE port. (Default value)
- Disabled — Disable onboard 2nd channel IDE port.

✍ IDE Primary Master PIO (for onboard IDE 1st channel)

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Mode0~4 — Manually set the IDE Accessing mode.

✍ IDE Primary Slave PIO (for onboard IDE 1st channel)

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Mode0~4 — Manually set the IDE Accessing mode.

✍ IDE Secondary Master PIO (for onboard IDE 2nd channel)

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Mode0~4 — Manually set the IDE Accessing mode.

✍ IDE Secondary Slave PIO (for onboard IDE 2nd channel)

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Mode0~4 — Manually set the IDE Accessing mode.

✍ IDE Primary Master UDMA

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Disabled — Disable UDMA function.

✍ IDE Primary Slave UDMA

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Disabled — Disable UDMA function.

✍ IDE Secondary Master UDMA

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Disabled — Disable UDMA function.

✍ IDE Secondary Slave UDMA

- Auto — BIOS will automatically detect the IDE HDD Accessing mode. (Default value)
- Disabled — Disable UDMA function.

✍ IDE1 Conductor Cable

- Auto — Will be automatically detected by BIOS (Default Value)
- ATA66/100 — Set IDE1 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100)
- ATA33 — Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33)

✍ IDE2 Conductor Cable

- Auto — Will be automatically detected by BIOS (Default Value)
- ATA66/100 — Set IDE2 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100)
- ATA33 — Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

✍ USB Controller

Disable this option if you are not using the onboard USB feature.

- Enabled — Enabled USB Controller. (Default value)
- Disabled — Disabled USB Controller.

✍ USB Keyboard Support

When a USB keyboard is installed, please set at Enabled.

- Enabled — Enabled USB Keyboard Support.
- Disabled — Disabled USB Keyboard Support. (Default value)

✍ USB Mouse Support

- Enabled — Enabled USB Mouse Support.
- Disabled — Disabled USB Mouse Support. (Default value)

✍ Init Display First

This feature allows you to select the first initation of the monitor display from which card, when you install an AGP VGA card and a PCI VGA card on board.

- PCI — Set Init Display First to PCI Slot.
- AGP — Set Init Display First to AGP. (Default value)

✍ AC97 Audio

This feature allows you to enable or disable the AC97 audio function.

- Auto — BIOS will automatically detect onboard AC97 Audio or Creative CT5880 audio. (Default value)
- Disabled — Disabled AC97 Audio.

☞ AC97 Modem

- Auto — BIOS will search MC97 Codec (AMR Modem Card). If found, MC97 function will be enabled. If no MC97 Codec found, MC97 function will be disabled. (Default Value)
- Disabled — Disable this function.

✍ Onboard USB 2.0 Device

- Enable — Enable onboard USB 2.0 Device. (Default value)
- Disable — Disable onboard USB 2.0 Device.

✍ Onboard Sound

- Enable — Enable onboard sound function. (Default value)
- Disable — Disable onboard sound function.

✍ Onboard ATA/RAID Device

- Enable — Enable onboard ATA/RAID Device. (Default value)
- Disable — Disable onboard ATA/RAID Device.

✍ Mouse Power On

- Disabled — Disabled this function. (Default value)
- Double Right — Set mouse power on by double click mouse right bottom.
- Double Left — Set mouse power on by double click mouse left bottom.

✍ Keyboard Power On

This feature allows you to set the method for powering-on the system.

The option "Password" allows you to set up to 5 alphanumeric characters to power-on the system.

The option "Any Key" allows you to touch the keyboard to power on the system.

The option "Keyboard 98" allows you to use the standard keyboard 98 to power on the system.

- Password — Enter from 1 to 5 characters to set the Keyboard Power On Password.
- Disabled — Disabled this function. (Default value)
- Keyboard 98 — If your keyboard have "POWER Key" button, you can press the key to power on your system.
- Any Key — Set Keyboard power on by any key

✍ KB Power ON Password

- Enter — Input password (from 1 to 5 characters) and press Enter to set the Keyboard Power On Password..

✍ Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

- Enabled — Enable onboard FDC port. (Default value)
- Disabled — Disable onboard FDC port.

✍ Onboard Serial Port 1

- Auto — BIOS will automatically setup the port 1 address.
- 3F8/IRQ4 — Enable onboard Serial port 1 and address is 3F8. (Default value)
- 2F8/IRQ3 — Enable onboard Serial port 1 and address is 2F8.
- 3E8/IRQ4 — Enable onboard Serial port 1 and address is 3E8.

- 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8.
- Disabled Disable onboard Serial port 1.

✍ Onboard Serial Port 2

- Auto BIOS will automatically setup the port 2 address.
- 3F8/IRQ4 Enable onboard Serial port 2 and address is 3F8.
- 2F8/IRQ3 Enable onboard Serial port 2 and address is 2F8. (Default Value)
- 3E8/IRQ4 Enable onboard Serial port 2 and address is 3E8.
- 2E8/IRQ3 Enable onboard Serial port 2 and address is 2E8.
- Disabled Disable onboard Serial port 2.

✍ UART Mode Select

(This feature allows you to determine which Infra Red(IR) function of Onboard I/O chip)

- ASKIR Set onboard I/O chip UART to ASKIR Mode.
- IrDA Set onboard I/O chip UART to IrDA Mode.
- Normal Set onboard I/O chip UART to Normal Mode. (Default Value)

✍ RxD, TxD Active

This feature is available only if the item, UART 2 Mode, is set at ASKIR or IrDA. The feature allows you to select the active signals of the recception end and the transmission end.

- Hi, Hi Set RxD, TxD Active to Hi, Hi.
- Hi, Lo Set RxD, TxD Active to Hi, Lo. (Default Value)
- Lo, Hi Set RxD, TxD Active to Lo, Hi.
- Lo, Lo Set RxD, TxD Active to Lo, Lo.

✍ IR Transmission Delay

- Enabled Enabled IR Transmission delay. (Default Value)
- Disabled Enabled IR Transmission delay.

✍ UR2 Duplex Mode

This feature allows you to select the IR modes.

- Half — IR Function Duplex Half. (Default Value)
- Full — IR Function Duplex Full.

✍ OnBoard Parallel port

This feature allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

- 378/IRQ7 — Enable On Board LPT port and address is 378.(Default Value)
- 278/IRQ5 — Enable On Board LPT port and address is 278.
- 3BC/IRQ7 — Enable On Board LPT port and address is 3BC.

✍ Parallel Port Mode

This feature allows you to connect with an advanced print via the port mode it supports.

- SPP — Using Parallel port as Standard Parallel Port. (Default Value)
- EPP — Using Parallel port as Enhanced Parallel Port.
- ECP — Using Parallel port as Extended Capabilities Port.
- ECP+EPP — Using Parallel port as ECP & EPP mode.

✍ ECP Mode Use DMA

This feature allows you to select Direct Memory Access(DMA) channel if the ECP mode selected.

- 1 — Set ECP mode use DMA 1.
- 3 — Set ECP mode use DMA 3. (Default value)

✍ AC Back Function

- Memory — System power on depends on the status before AC lost.
- Soft-Off — Always in Off state when AC back. (Default value)
- Full-On — Always power on the system when AC back.

CIR Port Address

This feature allows you to select CIR port address or disable it.

- Disabled — Disabled this function. (Default Value)
- 310 — Set CIR Port Address to 310.
- 320 — Set CIR Port Address to 320.

CIR Port IRQ

This feature allows you to select CIR IRQ , if CIR is enabled.

- 5 — Set 5 for CIR Port IRQ.
- 11 — Set 11 for CIR Port IRQ. (Default Value)

Smart Card Interface

- Enabled — Enabled Smart Card Interface. (Default value)
- Disabled — Disabled Smart Card Interface.

MS/SDI Interface

- Memory Stick — Set MS/SDI Interface to Memory Stick. (Default value)
- Secure Digital — Set MS/SDI Interface to Secure Digital.
- Disabled — Disabled MS/SDI Interface.

Power Management Setup

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Power Management Setup

ACPI Suspend Type	[S1(POS)]	Item Help
☞USB Device Wake-Up From S3	Disabled	Menu Level
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend Type	[Stop Grant]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-off]	
PME Event Wake Up	[Enabled]	
Modem Ring On/Wake On Lan	[Enabled]	
Resume by Alarm	[Disabled]	
☞Date(of Month) Alarm	[Everyday]	
☞Time(hh:mm:ss) Alarm	[0 0 0]	
** Reload Global Timer Events **		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD,COM,LPT Port	[Disabled]	
PCI PIRQ[A-H]#	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 6: Power Management Setup

✍ ACPI Suspend Type

S1/POS	Set ACPI Suspend Type to S1/POS (Power On Suspend). (Default value)
S3/STR	Set ACPI Suspend Type to S3/STR (Suspend To RAM).

✍ USB Device Wake-up From S3

When set at Enabled, it allows USB Device to activate the system from ACPI S3 power saving mode.

Enabled	Enable USB Device Wakeup From S3.
Disabled	Disable USB Device Wakeup From S3. (Default value)

✍ Power Management

This feature allows you to adjust the power management item.

User Define	For configuring our own power management features (Default Value)
Min Saving	Disabled Green & software APM function.
Max Saving	Enabled Green & software APM function.

✍ Video off Method

V/H SYNC+Blank	BIOS will turn off V/H-SYNC when gets into Green mode for Green monitor power saving.
Blank Screen	BIOS will only black monitor when gets into Green mode.
DPMS	BIOS will use DPMS Standard to control VGA card. (The Green type VGA card will turn off V/H-SYNC automatically.)(Default value)

✍ Video Off In Suspend

This feature allows you to select VGA status when system goes to suspend mode.

Yes	Set Suspend type is stop grant. (Default value)
No	Set Suspend type is Power on Suspend.

✍ Suspend Type

Stop Grant	Set Suspend type is stop grant. (Default value)
PwrOn Suspend	Set Suspend type is Power on Suspend.

✍ MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem's IRQ#.

N/A	Set MODEM Use IRQ to NA.
3	Set MODEM Use IRQ to 3. (Default value)
4	Set MODEM Use IRQ to 4.
5	Set MODEM Use IRQ to 5.
7	Set MODEM Use IRQ to 7.
9	Set MODEM Use IRQ to 9.
10	Set MODEM Use IRQ to 10.
11	Set MODEM Use IRQ to 11.

✍ Suspend Mode

When disabled, the system will not enter suspend mode. The specified time option defines the idle time the system takes before it enters suspend mode.

Disabled	Disabled Suspend Mode. (Default value)
1 min - 1 Hour	Setup the timer to enter Suspend Mode.

✍ HDD Power Down

The option lets the BIOS turn the HDD motor off when system is in suspend mode. Selecting 1 Min..15Min allows you define the HDD idle time before the HDD enters the Power saving Mode. The options 1Min..15Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.

Disabled	Disabled HDD Power Down mode function. (Default value)
1-15mins.	Enabled HDD Power Down mode between 1 to 15 mins.

✍ Soft-off by PWR-BTTN

Instant-off	Press power button then Power off instantly. (Default value)
Delay 4 Sec.	Press power button 4 sec to Power off. Enter suspend if button is pressed less than 4 sec.

✍ PME Event Wake up

When set at Enabled, any PCI-PM event awarkes the system from a PCI-PM controlled state.

- Disabled — Disabled PME Event Wake up function.
- Enabled — Enabled PME Event Wake up function. (Default Value)

✍ Modem Ring On/ Wake On LAN

An incoming call via modem awakes the system from its soft-off mode./When set at Enabled, an input signal comes from the other client/server on the LAN awarks the system from a soft off state if connected over LAN.

- Disabled — Disabled Modem Ring On / Wake On LAN function.
- Enabled — Enabled Modem Ring On / Wake On LAN function. (Default Value)

✍ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Data/time to power on system.

- Disabled — Disable this function. (Default Value)
- Enabled — Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

Date (of Month) Alarm : Everyday ,1~31

Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

✍ Primary IDE 0/1

When the primary master/slave HDD is working, the system timer will be reloaded and the system will not be into the system will not be into suspend mode.

- Disabled — Disabled this function. (Default value)
- Enabled — Enabled monitor Primary IDE 0/1 for Green event.

✍ Secondary IDE 0/1

When the secondary master/slave HDD isworking, the system timer will be reloaded and the system will not be into the system will not be into suspend mode.

- Disabled — Disabled this function. (Default value)
- Enabled — Enabled monitor Secondary IDE 0/1 for Green event.

✍ FDD,COM,LPT Port

When FDD, COM, or LPT is working, the system timer will be reloaded and the system will not be into the system will not be into suspend mode.

- Disabled — Disabled this function. (Default value)
- Enabled — Enabled monitor FDC,COM,LPT for Green event.

✍ PCI PIRQ[A-H]

When the PCI PIRQ[A-H]# has been alerted, the system timer will be reloaded and the system will not be into the system will not be into suspend mode.

- Enabled — Monitor PCI PIRQ[A-H]# IRQ Active.
- Disabled — Ignore PCI PIRQ[A-H]# IRQ Active. (Default value)

PnP/PCI Configurations

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PnP/PCI Configurations

Resources Controlled By	[Auto]	Item Help
⇨IRQ Resources	Press Enter	Menu Level
PCI1/PCI5 IRQ Assignment	[Auto]	
PCI2/PCI6 IRQ Assignment	[Auto]	
PCI3 IRQ Assignment	[Auto]	
PCI4 IRQ Assignment	[Auto]	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F3:Language F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 7: PnP/PCI Configurations

✍ Resources Controlled by

- Manual — User can set the PnP resource (I/O Address, IRQ & DMA channels) used by legacy ISA DEVICE.
- Auto — BIOS automatically use these PnP rescuers. (Default value)

✍ IRQ Resources (3,4,5,7,9,10,11,12,14,15)

- PCI Device — The resource is used by PCI device.
- Reserved — Set the resource to reserved.

✍ PCI1/PCI5 IRQ Assignment

- Auto — Auto assign IRQ to PCI 1/ PCI 5. (Default value)
- 3,4,5,7,9.,10,11,12,14,15 — Set 3,4,5,7,9,10,11,12,14,15 to PCI1/ PCI5.

✍ PCI2/PCI6 IRQ Assignment

- Auto — Auto assign IRQ to PCI 2/ PCI 6. (Default value)
- 3,4,5,7,9.,10,11,12,14,15 — Set 3,4,5,7,9,10,11,12,14,15 to PCI2/ PCI6.

✍ PCI3 IRQ Assignment

Auto	Auto assign IRQ to PCI 3. (Default value)
3,4,5,7,9.,10,11,12,15	Set3,4,5,7,9,10,11,12,14,15 to PCI3.

✍ PCI4 IRQ Assignment

Auto	Auto assign IRQ to PCI 4. (Default value)
3,4,5,7,9.,10,11,12,15	Set3,4,5,7,9,10,11,12,14,15 to PCI4.

PC Health Status

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PC Health Status

Reset Case Open Status	[Disabled]	
Case Opened	No	
VCORE	1.746V	Item Help
VCC18	1.792V	
+3.3V	3.296V	Menu Level
+ 5V	5.080 V	
+12V	11.904V	
Current CPU Temperature	39°C	
Current CPU FAN Speed	4821 RPM	
Current POWER FAN Speed	0 RPM	
Current SYSTEM FAN speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
POWER FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F3: Language F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure8: PC Health Status

☞Reset Case Open Status

☞Case Opened

If the case is closed, "Case Opened" will show "No".

If the case have been opened, "Case Opened" will show "Yes".

If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.

✍Current Voltage (V) VCORE /VCC18/ +5V / +12V

Detect system's voltage status automatically.

✍ Current CPU Temperature (°C)

Detect CPU Temp. automatically.

✍ Current CPU FAN / POWER / SYSTEM FAN Speed (RPM)

Detect Fan speed status automatically.

✍ CPU Warning Temperature

- 60°C / 140°F Monitor CPU Temp. at 60°C / 140°F.
- 70°C / 158°F Monitor CPU Temp. at 70°C / 158°F.
- 80°C / 176°F Monitor CPU Temp. at 80°C / 176°F.
- 90°C / 194°F Monitor CPU Temp. at 90°C / 194°F.
- Disabled Disabled this function. (Default value)

✍ Fan Fail Warning (CPU / POWER / SYSTEM)

- Disabled Fan Fail Alarm Function Disabled. (Default value)
- Enabled Fan Fail Alarm Function Enabled.

Frequency/Voltage Control

CMOS Setup Utility-Copyright(C) 1984-2001 Award Software
Frequency/Voltage Control

CPU Clock Ratio	[x 14]	Item Help
CPU Host Clock Control	[Disable]	Menu Level
CPU Host Frequency (MHz)	[100]	
Host/DRAM Clock ratio	[Auto]	
Memory Frequency (MHz)	[266]	
PCI/AGP Frequency (MHz)	[33/66]	
DIMM OverVoltage Control	[Normal]	
APG OverVoltage Control	[Normal]	
CPU OverVoltage Control	[Normal]	
Normal CPU Vcore	1.750V	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F3:Language F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 9: Frequency/Voltage Control

✍ CPU Clock Ratio

Set CPU Ratio if CPU Ratio is unlocked.

- X8~X 23 It's depends on CPU Clock Ratio.

✍ CPU Host Clock Control

Note: If system hangs up before enter CMOS setup utility, wait for 10 sec for times out reboot. When time out occur, system will reset and run at CPU default Host clock at next boot.

- Disable Disable CPU Host Clock Control.(Default value)
- Enable Enable CPU Host Clock Control.

✍ CPU Host Frequency

- 100MHz ~ 200MHz Set CPU Host Clock from 100MHz to 200MHz.

☞ PCI/AGP Frequency(Mhz)

- The values depend on CPU Host Frequency (Mhz).

☞ Memory Frequency(Mhz)

- The values depend on CPU Host Frequency (Mhz).

✍ Host/DRAM Clock Ratio

(Warning: wrong frequency may make system can't boot, clear CMOS to overcome wrong frequency issue)

- 2.0 Memory Frequency = Host clock X 2.0.
- 2.66 Memory Frequency = Host clock X 2.66.
- Auto Set Memory frequency by DRAM SPD data. (Default value)

✍ DIMM OverVoltage Control

- Normal The default DIMM voltage. (Default value)
- 2.6V~2.8V Set DIMM voltage from 2.6V~2.8V.

✍ AGP OverVoltage Control

- Normal Auto detect AGP voltage. (Default value)
- 1.6V~1.8V Set CPU voltage from 1.6V~1.8V.

✍ CPU OverVoltage Control

- Normal Auto detect CPU voltage. (Default value)
- 1.100V~1.850V Set CPU voltage from 1.100V~1.850V.

Select Language

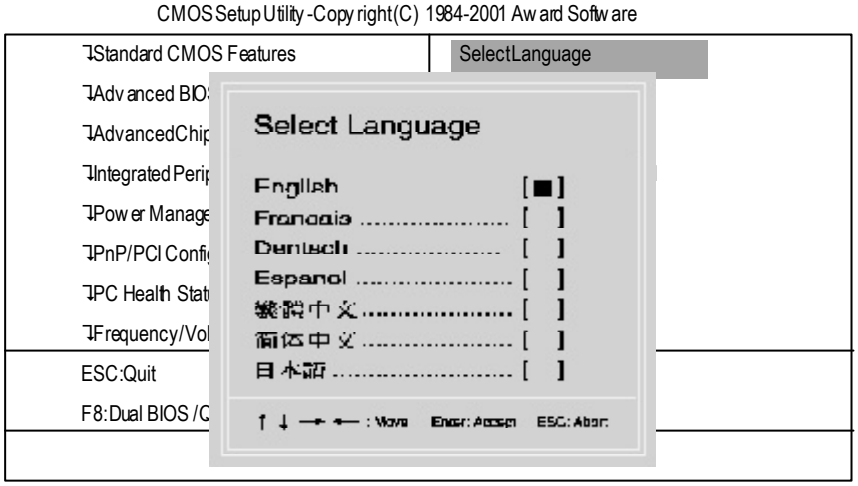


Figure 10: Select Language

Select Language

Multi Language is supports 7 languages. There are English, Japanese, French, Spanish, Germany, Simplified Chinese, Traditional Chinese.

Load Fail-Safe Defaults

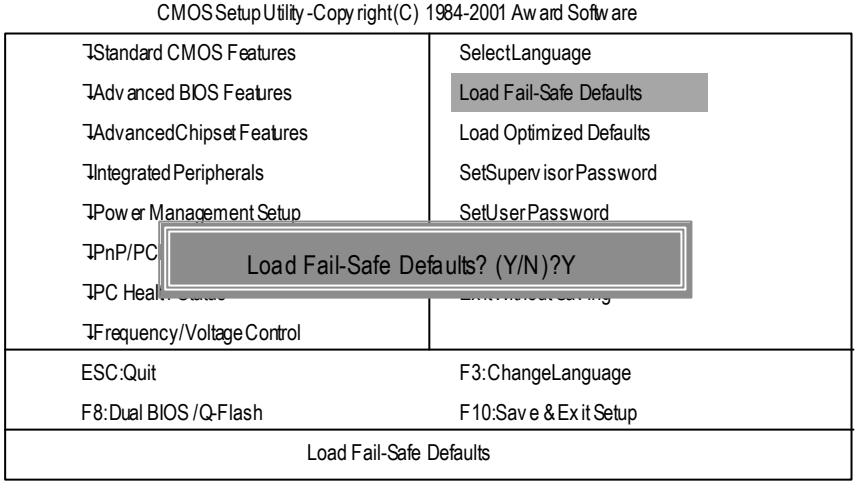


Figure 11: Load Fail-Safe Defaults

✍ Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Optimized Defaults

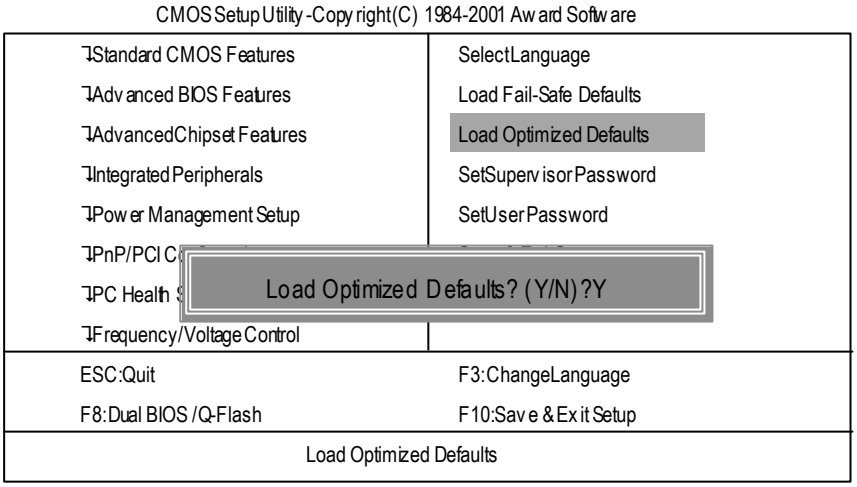


Figure 12: Load Optimized Defaults

✍ Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Set Supervisor/User Password

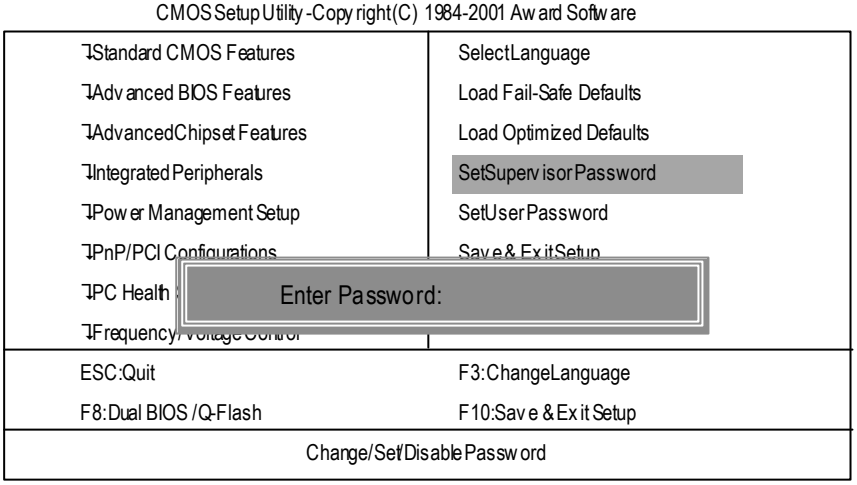


Figure 13: Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. 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 password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords: a SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Security Option" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Security Option" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

Save & Exit Setup

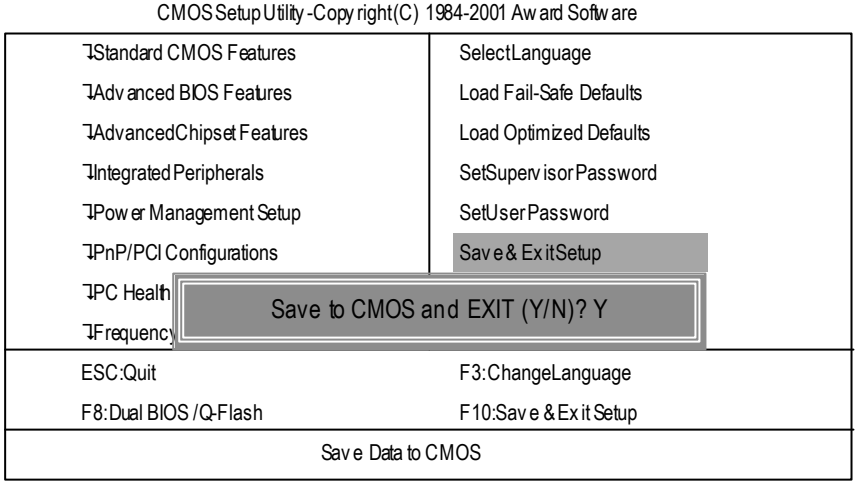


Figure 14: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.
Type "N" will return to Setup Utility.

Exit Without Saving

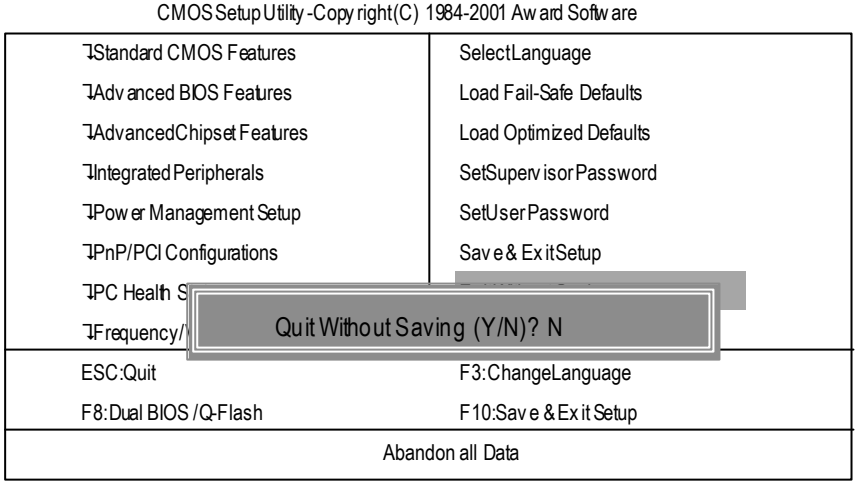
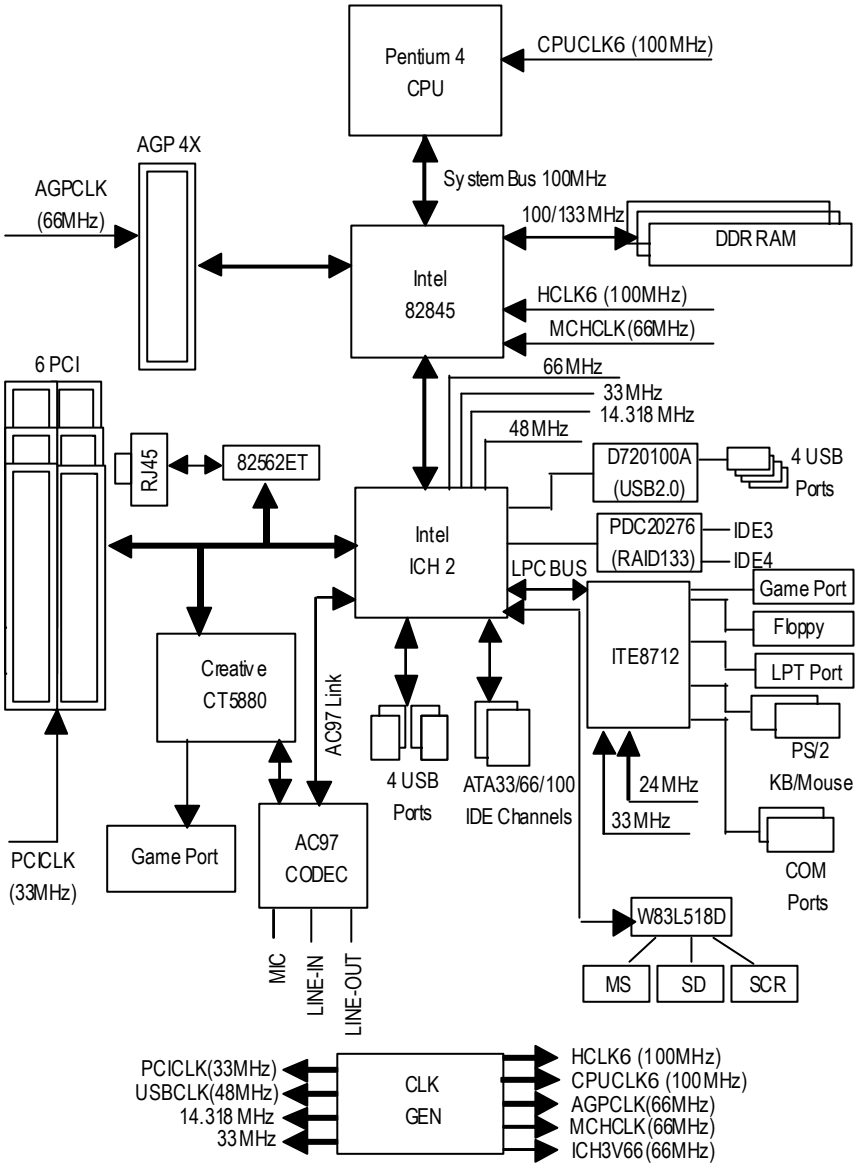


Figure 15: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

Block Diagram



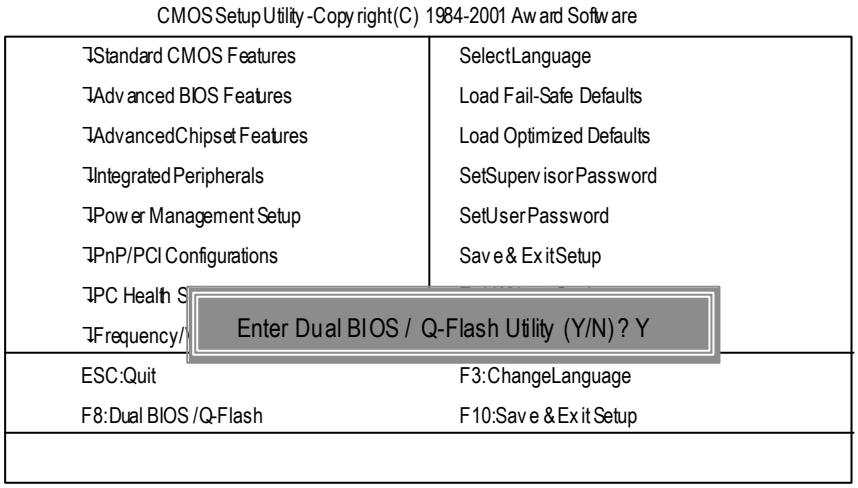
Dual BIOS / Q-Flash Introduction

A. What is Dual BIOS Technology?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS and Q-Flash Utility?

a. After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP, then press <F8> to enter Flash utility.



b. Dual BIOS / Q-Flash Utility

Dual BIOS / Q-Flash Utility V845.4MF3 (C) 2001, GIGA-BYTE Technology Co., LTD.	
Wide Range Protection	:Disabled
Halt On BIOS Defects	:Disabled
Auto Recovery	:Enabled
Boot From	:MainBIOS
BIOS Recovery	:Main to Backup
F3: Load Default	F5:StartBIOS Recovery
F7: Save And Restart	F9:Exit Without Saving
F8: Update BIOS from disk	F10:Recovery from Disk
Use <Space> key to toggle setup	

c. Dual BIOS Item explanation:

Wide Range Protection: Disabled(Default), Enabled

Status 1:

If any failure (ex. Update ESCD failure, checksum error or reset...) occurs in the Main BIOS , just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to "Enable", the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals to request restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Halt On BIOS Defects : Disabled(Default), Enabled

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On BIOS Defects set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

If Auto Recovery :**Disabled**, it will show ***<or the other key to continue.>***

If Auto Recovery :**Enabled**, it will show ***<or the other key to Auto Recover.>***

Auto Recovery : Enabled(Default), Disabled

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.

(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press **"Del"** key when the boot screen appears.)

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

The user can set to boot from main BIOS or Backup BIOS.

Status 2:

If one of the main BIOS or the Backup BIOS fails, this item *"Boot From : Main BIOS(Default) "* will become gray and will not be changed by user.

BIOS Recovery : Main to Backup

Auto recovery message:

BIOS Recovery: Main to Backup

The means that the Main BIOS works normally and could automatically recover the Backup BIOS.

BIOS Recovery: Backup to Main

The means that the Backup BIOS works normally and could automatically recover the Main BIOS.

(This auto recovery utility is set by system automatically and can't be changed by user.)

C. What is Q-Flash Utility?

Q-Flash utility is a pre-O.S. BIOS flash utility enables users to update its BIOS within BIOS mode, no more fooling around any OS.

D. How to use Q-Flash Flash?

F3: Load Default Load current BIOS default value.	**F5: Start BIOS Recovery** Press F5 to recovery new BIOS version.
F7: Save and Restart Save revised setting and restart the computer.	**F9: Exit Without Saving** Exit without changing.
F8: Update BIOS from Disk Update boot-up BIOS.	**F10: Recovery from Disk** Update another BIOS (different from boot-up BIOS)

DualBIOS™ Technology FAQ

GIGABYTE Technology is pleased to introduce DualBIOS technology, a hot spare for your system BIOS. This newest "Value-added" feature, in a long series of innovations from GIGABYTE, is available on this motherboard. Future GIGABYTE motherboards will also incorporate this innovation.

What's DualBIOS™?

On GIGABYTE motherboards with DualBIOS there are physically two BIOS chips. For simplicity we'll call one your "Main BIOS" and the other we'll call your "Backup" BIOS (your "hot spare"). If your Main BIOS fails, the Backup BIOS almost automatically takes over on your next system boot. Almost automatically and with virtually zero down time! Whether the problem is a failure in flashing your BIOS or a virus or a catastrophic failure of the Main BIOS chip, the result is the same - the Backup BIOS backs you up, almost automatically.

I. Q: What is DualBIOS™ technology?

Answer:

DualBIOS technology is a patented technology from Giga-Byte Technology. The concept of this technology is based on the redundancy and fault tolerance theory. DualBIOS™ technology simply means there are two system BIOSes (ROM) integrated onto the motherboard. One is a main BIOS, and the other is a backup BIOS. The mainboard will operate normally with the main BIOS, however, if the main BIOS is corrupt or damaged for various reasons, the backup BIOS will be automatically used when the system powered-On. Your PC will operate as before the main BIOS was damaged, and is completely transparent to the user.

II. Q: Why does anyone need a motherboard with DualBIOS™ technology?

Answer:

In today's systems there are more and more BIOS failures. The most common reasons are virus attacks, BIOS upgrade failures, and/or deterioration of the BIOS (ROM) chip itself.

1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.
2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.
3. If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system may not be able to boot correctly. This may cause the PC system hang in operation or during boot.
4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.
   With Giga-Byte Technology's patented DualBIOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costly repair bills cause by BIOS failures.

III. Q: How does DualBIOS™ technology work?

Answer:

1. DualBIOS™ technology provides a wide range of protection during the boot up procedure. It protects your BIOS during system POST, ESCD update, and even all the way to PNP detection/assignment.
2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during boot up does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.
3. DualBIOS™ provides manual recovery for the BIOS. DualBIOS™ technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.
4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corrupt BIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

IV. Q: Who Needs DualBIOS™ technology?

Answer:

1. Every user should have DualBIOS™ technology due to the advancement of computer viruses.

   Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS™ technology will provide a state-of-the-art solution to protect your PC:

   Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.

   Case II.) If the "Auto Recovery" option is enabled in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.

   Case III.) A user may override booting from the main system BIOS. The DualBIOS™

utility may be entered to manually change the boot sequence to boot from the backup BIOS.

2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technology examines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.
3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.
4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, "Halt On When BIOS Defects," to be enabled to halt your system with awarning message that the main BIOS has been corrupted. Most workstation/ servers require constant operation to guarantee services have not been interrupted. In this situation, the "Halt On When BIOS Defects" message may be disabled to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.

Four Speaker & SPDIF Introduction

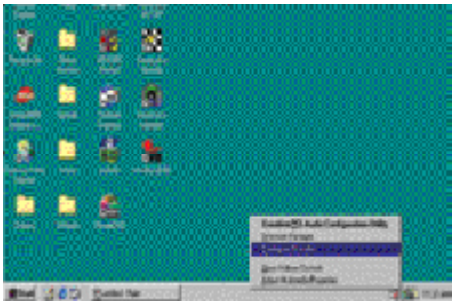
Four Speaker Introduction

A. What is Four Speaker?

The Creative CT5880 audio chip can support up to 4 speaker output. If you select "Four speaker out", Line In will be reconfigured as another line out to support a second pair of speakers.

B. How to use Four Speaker?

Microsoft Windows 98 Second Edition setup procedure:

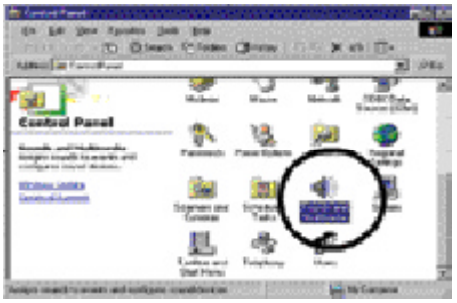


Click the audio icon along the task bar and select "Configure 3D Audio"

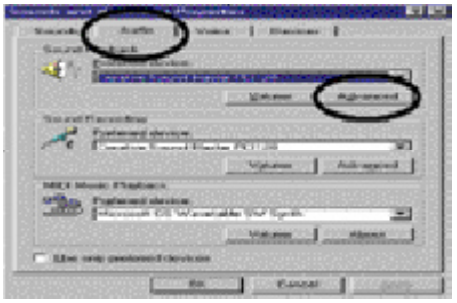
Select two speaker (Default)

Select "Four speaker" item.

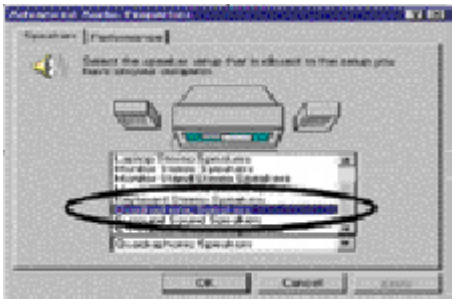
Microsoft Windows Me setup procedure:



Go to "Control Panel" and double click "Sounds and Multimedia".



Select "Audio" Page, and click "Advanced" button.



Select "Quadraphonic Speakers" and click ok.

C. Four Speaker Application

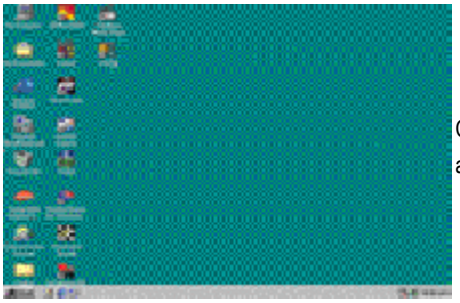
The four speaker function will only be supported in application softwares that use Microsoft DirectX and Creative EAX, for example, the game titles, software DVD player and MP3 player.

SPDIF Introduction

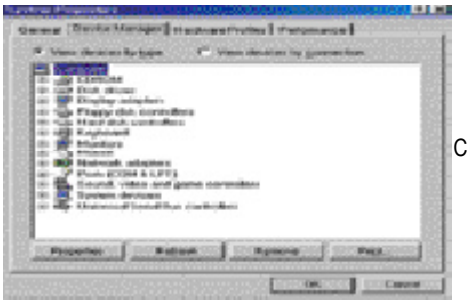
A. What is SPDIF?

The SPDIF output is capable of providing digital signal to AC3 decoder which can support upto 5.1 speakers.

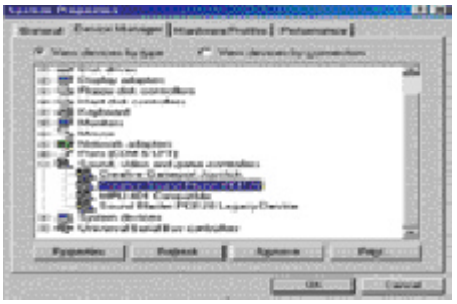
B. How to use SPDIF?



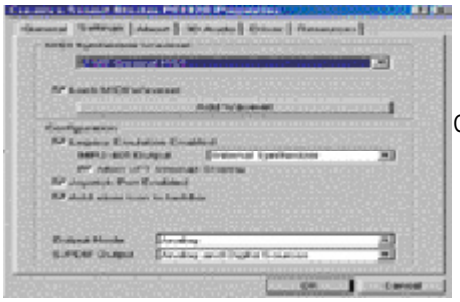
Click your mouse right button in "My Computer" and select the "Properties" item.



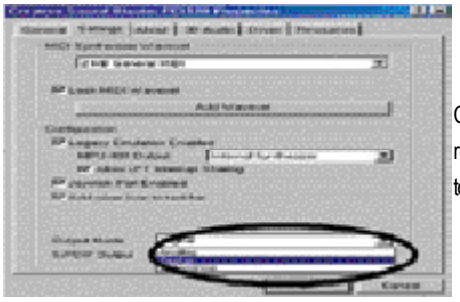
Click "Device Manager" item.



Click "Sound, vidio and game controllers" item and select the "Creative Sound Blaster PCI128" item.



Click “Settings” item and select the “Output Mode” item.



Click “Digital” item, Line Out will be reconfigure
to SPDIF Out.

Recommend you to select “Autosense”, It will automatically detect the type (mono or stereo) of the audio connector that you plug into Line Out audio jack, then configure Line Out to either SPDIF or Speaker accordingly.

@ BIOS Introduction

Gigabyte announces @BIOS
Windows BIOS live update utility

Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always hesitate to update it? Because you think updating newest BIOS is unnecessary and actually you don't know how to update it.

Maybe not like others, you are very experienced in BIOS updating and spend quite a lot of time to do it. But of course you don't like to do it too much. First, download different BIOS from website and then switch the operating system to DOS mode. Secondly, use different flash utility to update BIOS. The above process is not a interesting job. Besides, always be carefully to store the BIOS source code correctly in your disks as if you update the wrong BIOS, it will be a nightmare.

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS—the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internetand update it. Not like the other BIOS update software, it's a Windows utility. With the help of "@BIOS', BIOS updating is no more than a click.

Besides, no matter which mainboard you are using, if it's a Gigabyte's product*, @BIOS help you to maintain the BIOS. This utility could detect your correct mainboard model and help you to choose the BIOS accordingly. It then downloads the BIOS from the nearest Gigabyte ftp site automatically. There are several different choices; you could use "Internet Update" to download and update your BIOS directly. Or you may want to keep a backup for your current BIOS, just choose "Save Current BIOS" to save it first. You make a wise choice to use Gigabyte, and @BIOS update your BIOS smartly. You are now worry free from updating wrong BIOS, and capable to maintain and manage your BIOS easily. Again, Gigabyte's innovative product erects a milestone in mainboard industries.

For such a wonderful software, how much it costs? Impossible! It's free! Now, if you buy a Gigabyte's motherboard, you could find this amazing software in the attached driver CD. But please remember, connected to internet at first, then you could have a internet BIOS update from your Gigabyte @BIOS.

Easy TuneIII™ Introduction

Gigabyte announces *EasyTune*III Windows overdrive utility

"Overdrive" might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "overdrive" is thought to be very difficult and includes a lot of technical know-how, sometimes "overdrive" is even considered as special skills found only in some enthusiasts.

But as to the experts in "overdrive", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware and software tools to do "overdrive". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "overdrive" system is unknown.

Now everything is different because of a Windows overdrive utility EasyTuneIII—announced by Gigabyte. This utility has totally changed the gaming rule of "overdrive". This is the first overdrive utility suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" to run "overdrive" at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have auto and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If someone prefers to "overdrive" by oneself, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class overclocking. In "Advanced Mode", one can change the system bus speed in small increments to get ultimate system performance. And no matter which mainboard is used, if it's a Gigabyte's product*, EasyTuneIII helps to perform the best of system.

Besides, different from other traditional over-clocking methods, EasyTuneIII doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "overdrive" at only one click. Therefore, this is a safer way for "overdrive" as nothing is changed on software or hardware. If user runs EasyTuneIII over system's limitation, the biggest lost is only to restart the computer again and the side effect is then well controlled. Moreover, if one well-performed system speed been tested in EasyTuneIII, user can "Save" this bus speed and "Load" it in next time. Obviously, Gigabyte EasyTuneIII has already turned the "overdrive" technology toward to a newer generation.

This wonderful software is now free bundled in Gigabyte motherboard attached driver CD. Users may make a test drive of "Easy TuneIII" to find out more amazing features by themselves.

RAID Introduction

What is RAID?

This motherboard implements two different types of RAID levels as follows:

RAID 0 (stripe)

For capacity -- The motherboard array will be as big as the smallest HDD in the array times however many HDDs are in the array. Any larger HDDs will simply be truncated. The truncated space on the bigger HDDs will then be unusable.

For sustained data transfers -- A RAID 0 array consisting of two HDDs will transfer at about twice the speed of the slowest HDD in the array. A RAID 0 array consisting of four HDDs will transfer at about three times the speed of the slowest HDD in the array.

RAID 1 (mirror)

For capacity - This Motherboard array will be as big as the smallest HDD in the array. The larger HDD will simply be truncated. The truncated space on the bigger HDD will then be unusable.

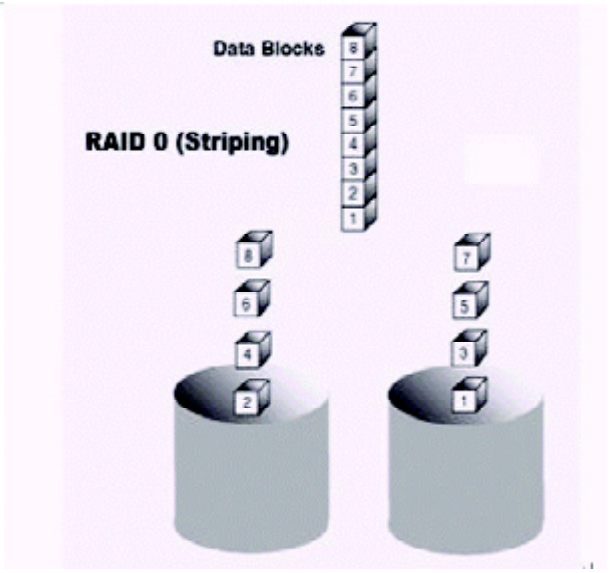
For sustained data transfers -- This motherboard array will write data at the rate of the slowest HDD in the array. This motherboard array will read data at twice the rate of the slowest HDD in the array.

About RAID Levels

Striping (RAID 0)

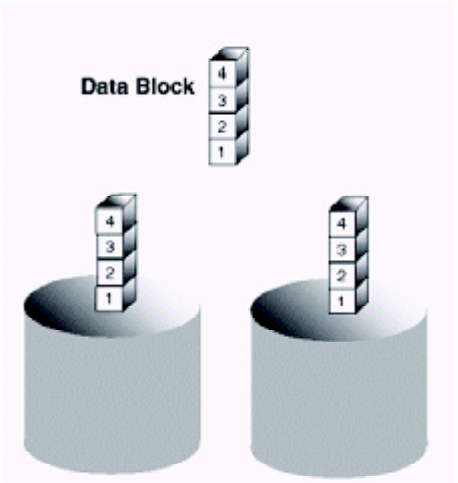
Reads and writes sectors of data interleaved between multiple drives. When any disk member fails, it affects the entire array. Performance is better than a single drive since the workload is balanced between the array members. This array type is for high performance systems. Identical drives are recommended for performance as well as data storage efficiency. The disk array data capacity is equal to the number of drive members times the smallest member capacity. For example, one 1GB and 1 drives will form a 2GB (2 x 1GB) disk array.

Stripe Size - a value can be set from 1KB to 1024KB sector size. The size can directly affect performance. In the FastBuild BIOS, the "Desktop" default is 8KB while "Server" and "A/V Editing" are 64KB.



Mirroring (RAID 1)

Writes duplicate data on to a pair of drives while reads are performed in parallel. ATA RAID 1 is fault tolerant because each drive of a mirrored pair is installed on separate IDE channels. If one of the mirrored drives suffers a mechanical failure (e.g. spindle failure) or does not respond, the remaining drive will continue to function. This is called Fault Tolerance. If one drive has a physical sector error, the mirrored drive will continue to function.



RAID 1 (Mirroring)

On the next reboot, the FastBuild™ utility will display an error in the array and recommend to replace the failed drive. Users may choose to continue using their PC, however Promise recommends replacing the failed drive as soon as possible. See Chapter 4 for a functional description.

Due to redundancy, the drive capacity of the array is half the total drive capacity. For example, two 1GB drives that have a combined capacity of 2GB would have 1GB of usable storage. With drives of different capacities, there may be unused capacity on the larger drive.

Creating Your Disk Array

You will now use the FastBuild BIOS utility to create your array using the attached drives. There are two different scenarios in creating this array. You can create an array for performance, you can create a Security array using new hard drives (recommended).

WARNING: If creating a Security array using an existing hard drive, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.

1. Boot your system. If this is the first time you have booted with RAID, the FastBuild BIOS will display the following screen.

```
FastTrak100 (tm) "Lite" BIOS Version 1.xx (Build xxxx)
(c) 1995-2001 Promise Technology, Inc. All Rights Reserved.
    No array defined . . .
Press <Ctrl-F> to enter FastBuild (tm) Utility
Or press <ESC> key to continue booting the system.
```

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu
3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to creating your first array.

```
        FastBuild (tm) Utility 1.32 (c) 1995-2001 Promise Technology, Inc.
                        [Auto Setup Options Menu]
  Optimize Array for:                Performance
  Typical Application usage:          DESK TOP
                        [ Auto Setup Configuration ]
  Mode.....Stripe
  Spare Driver.....0
  Drives used in Array.....2
  Array Disk Capacity (Size in MB).....160107
                                [ Keys Available ]
[↴] Up [↴] Down [↴ , ↴ , Space] Change Option [ESC] Exit [Ctrl-Y] Save
```

Creating an Array for Performance

NOTE: This motherboard allows users to create striped arrays with 1, 2 drives.

To create an array for best performance, follow these steps:

1. Using the Spacebar, choose "Performance" under the Optimize Array for section.
2. Select how you will use your PC most under the Typical Application usage section The choices are A/V Editing, Server, and Desktop (the default).
3. Press <Ctrl-Y> keys to Save and create the array.
4. Reboot your system.
5. Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.
6. Proceed to Installing Drivers section of the manual (see RAID Manual of the IUCD).

Creating a Security Array With New Drives

NOTE: This motherborad permit only two drives to be used for a single Mirrored array in Auto Setup.

To create an array for data protection using new hard drives, follow these steps:

1. Using the Spacebar, choose "Security" under the Optimize Array for section.
2. Press <Ctrl-Y> keys to Save your selection.
3. The window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

4. Press "N" for the Create Only option.
5. A window will appear almost immediately confirming that your Security array has been created.Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

6. Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
7. Once the arrayed drives have been formatted, proceed to the Installing Driver chapter (see RAID Manual of the IUCD) to install your operating system.

Creating a Security Array With An Existing Data Drive

NOTE: This motherboard permits only two drives to be used for a single Mirrored array in Auto Setup.

You would use this method if you wish to use a drive that already contains data and/or is the bootable system drive in your system. You will need another drive of identical or larger storage capacity.

WARNING: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.

WARNING: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on your system, do NOT connect the hard drive to the motherboard controller yet. You MUST install the Windows NT4 or 2000 driver software first (see RAID Manual of the IUCD) to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.

Follow these steps:

1. Using the Spacebar, choose "Security" under the Optimize Array for section.
2. Press <Ctrl-Y> keys to Save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

3. Press "Y" for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

```
                        Source Disk
Channel:ID              Drive Model              Capacity (MB)
                        Target Disk
Channel:ID              Drive Model              Capacity (MB)
                        [Please Select A Source Disk]
Channel:ID              Drive Model              Capacity (MB)
1 :Master   QUANTUMCR8.4A                 8063
2 :Master   QUANTUMCR8.4A                 8063
                        [↴] Up [↴]DOWN  [ESC] Exit  [Enter] Select
```

4. Use the arrow keys to choose which drive contains the existing data to be copied.
5. Press [Enter] keys to selection and start duplication. The following progress screen will appear.

```
Start to duplicate the image . . . Do you want to continue? (Yes/No)
Y - Continue
N - Abort
```

6. Select "Y" to continue. If you choose "N" , you will be returned to step 1.
7. Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

8. Proceed to the Installing Driver chapter (see RAID Manual of the IUCD) to install the RAID driver and/or operating system.

Using FastBuild™ Configuration Utility

The FastBuild™ Configuration Utility offers several menu choices to create and manage the drive array on the motherboard. For purposes of this manual, it is assumed you have already created an array in the previous chapter and now wish to make a change to the array or view other options.

Viewing BIOS Screen

When you boot your system with the RAID function and drives installed, the FastBuild BIOS will detect the drives attached and show the following screen.

```
FastTrak100 (tm)"Lite" BIOS Version 1.xx (Build xx)
(c) 1995-2001 Promise Technology, Inc. All Rights Reserved.
    Scanning IDE drives . . . . .
```

If an array exists already, the BIOS will display the following screen showing the board RAID BIOS version and status of the array.

```
FastTrak100 (tm) "Lite"BIOS Version 1.xx (Build xxxx)
(c) 1995-2001 Promise Technology, Inc. All Rights Reserved.
  ID    MODE SIZE          TRACK-MAPPING        STATUS
  1 *   1*2 Mirror         16126M  611/128/32   Functional
  Press <Ctrl-F> to enter FastBuild (tm) Utility....
```

The array status consists of three possible conditions: Functional, Critical, Offline.

Functional - The array is operational.

Critical - A mirrored array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuildO Setup utility, and then replace the problem drive.

Offline - A striped array has 1 drive that has failed or been disconnected. When the array condition is "offline," the user must replace the failed drive(s), then restore data from a backup source.

Navigating the FastBuild™ Setup Menu

When using the menus, these are some of the basic navigation tips: Arrow keys highlights through choices; [Space] bar key allows to cycle through options;
[Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

Using the Main Menu

This is the first option screen when entering the FastBuild™ Setup.

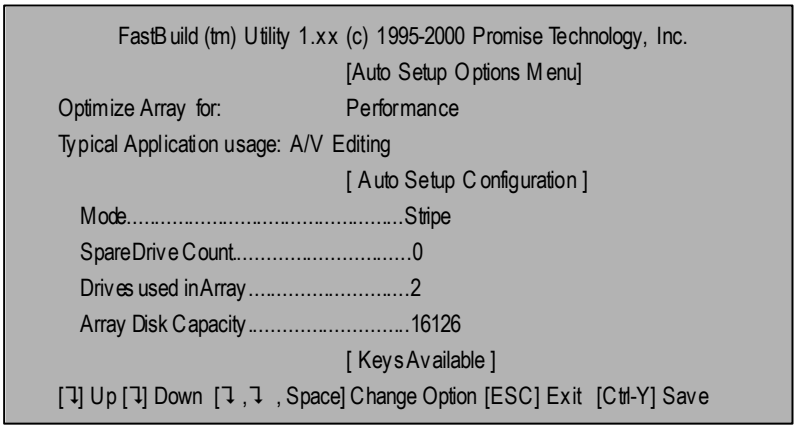
```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
                    [ Main Menu ]
   Auto Setup.....[ 1 ]
   View Drive Assignments.....[ 2 ]
   View Array.....[3]
   Delete Array.....[ 4 ]
   Rebuild Array.....[ 5 ]
   Controller Configuration.....[ 6 ]
                    [ Keys Available ]
          Press 1...6 to Select Option   [ESC] Exit
```

To create a new array automatically, follow the steps under "Creating Arrays Automatically" on page 64. Promise recommends this option for most users.
To view drives assigned to arrays, see "Viewing Drive Assignments" on page 66.
To delete an array (but not delete the data contained on the array), select "Deleting An Array" on page 68.
To rebuild a mirrored array, see "Rebuilding an Array" on page 70.
To view controller settings, see "Viewing Controller Configuration" on page 72.

NOTE: After configuring an array using FastBuild, you should FDISK and format the arrayed drive(s) if you are using new, blank drives. Depending on the type of array you are using.

Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to Save selections. FastBuild will automatically build the array.



Optimize Array For

Select whether you want Performance (RAID 0), Security (RAID 1) under the "Optimize Array for"setting.

Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

NOTE: This motherboard permits striped arrays using 1, 2 drive attached in Auto Setup mode.

Security (RAID 1 Mirroring)

Creates a mirrored (or fault tolerant) array for data security.

NOTE: Under the Security setting, This motherboard permits two drives to be used for a single Mirrored array only.

Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how This motherboard handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numerous small file transfers), or Desktop (a combination of large and small file sizes).

Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk arrays or are unassigned.

Under the "Assignment" column, drives are labeled with their assigned disk array or shown as "Free" if unassigned. Such "Free" drives can be used for a future array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc...)

FastBuild (tm) Utility 1.32 (c) 1996-2001 Promise Technology, Inc.

[View Drive Assignments]

Channel:ID	Drive Model	Capacity(MB)	Assignment	Mode
1 : Master	QUANTUMCR8.4A	8063	Array 1	U5
1 : Slave	QUANTUMCR8.4A	8063	Free	U5
2 : Master	QUANTUMCR8.4A	8063	Array 1	U5

[Keys Available]

[↑] Up [↓] Down [ESC] Exit Mode (P=PIO, D=DMA, U=UDMA)

How Orders Arrays

During startup, the disk arrays on the motherboard are recognized in this order: 1) The array set to bootable in the FastBuildTM Setup, and 2) the Array number (i.e. Array 0, Array 1¡K). This would be involved in determining which drive letters will be assigned to each disk array.

How Saves Array Information

All disk array data is saved into the reserved sector on each array member. We suggests that users record their disk array information for future reference.

Another feature of the motherboard disk array system is to recognize drive members even if drives are moved between different motherboard connectors(IDE3&IDE4). Since each drive's array data identifies itself to the array, it is possible to move or swap drives without modifying the array setup. This is valuable when adding drives, or during a rebuild.

Deleting An Array

The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted array.

WARNING: Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.

FastBuild (tm) Utility 1.32 (c) 1996-2001 Promise Technology, Inc.

[Delete Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	8063	Functional
Array 2	Stripe	1	8063	Functional
Array 3	Stripe	1	8063	Functional
Array 4	-----	-----	-----	-----

[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Del] Delete

1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
2. The View Array Definition menu will appear (see below) showing which drives are assigned to this array.

FastBuild (tm) Utility 1.32 (c) 1996-2001 Promise Technology, Inc.

[Define Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	8063	Functional

Stripe Block: 64 KB

[Drive Assignments]

Channel:ID	Drive Model	Capacity (MB)	Assignment
1 : Master	QUANTUMCR8.4A	8063	Y
2 : Master	QUANTUMCR8.4A	8063	Y

3. Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

```
Are you sure you want to delete this array?
Press Ctrl-Y to Delete, others to Abort
```

4. After deleting the array, you should create a new array using Auto Setup or the Define Array menu from the FastBuild Main Menu.

Rebuilding A Mirrored Array

The Rebuild Array <5> Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the BIOS.

NOTE: Drives MUST be replaced if they contain any physical errors.

Follow these steps BEFORE using the Rebuild Array menu option:

1. On bootup, the system Startup BIOS will display an error message identifying which drive has failed.
2. Press <Ctrl-F> keys to enter FastBuild Main Menu.
3. Select submenu Define Array <3>.
4. Select the failed array and identify the Channel and ID of the failed drive.
5. Power off and physically remove the failed drive.
6. Replace the drive with an identical model.
7. Reboot the system and enter the FastBuild Main Menu.
8. Select the <5> Rebuild Array option. The following screen will appear.

FastBuild (tm) Utility 1.32 (c) 1996-2001 Promise Technology, Inc.

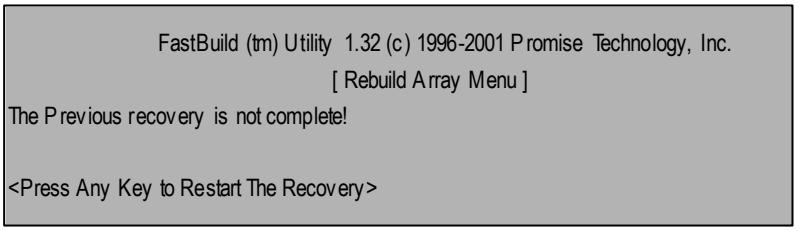
[Rebuild Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	16126	Critical
Array 2	Stripe	1	8063	Functional
Array 3	Stripe	1	8063	Functional
Array 4	-----	-----	------	-------

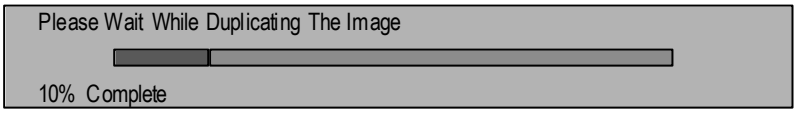
[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Enter] Select

9. Highlight the array whose Status is "Critical".
10. Press [Enter]. The following screen will then appear (see next page).



11. Press anykey and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.



12. Once the rebuild process is complete, the user will be asked to reboot the system.

Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the BIOS from halting (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of data channels

```
        FastBuild (tm) Utility 1.32 (c) 1996-2001 Promise Technology, Inc.
                              [ Adapter Configuration - Options ]
                              Halt On Error:     Enable
                              [ System Resources Configuration ]
Channel 1 (IDE1)              Interrupt : A I/O Port : 9800
Channel 2 (IDE2)              Interrupt : A I/O Port : A000
                              [ Keys Available ]
                  [↴,↴ Space] Change Option  [ESC] Exit
```

Halting BIOS On Bootup Errors

The [Adapter Configuration - Options] section allows you to enable or disable The system to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.

Viewing System Resources

The [System Resources Configuration] section of this submenu displays the PCI slot interrupt and port address used by the system. The resources used are determined by the Mainboard PCI PnP BIOS for the PCI slot in which the system resides.

In the rare case that there is a resource conflict, refer to the Mainboard BIOS documentation on changes on resources allocated to the system PCI slot.

Driver Installing

Picture below are shown in Windows ME (Special CD)

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

A. Installing Intel 845 Chipset Driver

Please install this driver as the first priority.
this item installs the chipset driver utility that enableds Plug-n-Plag INF support for Intel chipset component.

B. Installing Audio Driver

Click this item to install audio driver.

C. Installing Network Driver

Click this item to install Network driver.

D. Installing Promise PCI Device

Click this item to install Promise PCI Device Driver.

E. Installing SD, MS SCR Driver

Click this item to install SD, MS, SCR releation device driver.

F. Installing USB 2.0 Host Controller Driver

Click this item to install USB3,USB4 (in orange connector are for USB 2.0) driver.

Picture below are shown in Windows ME (Special CD)

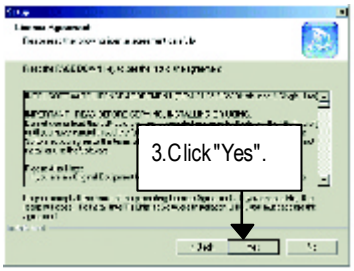
Appendix A: Intel 845 Chipset Driver Installation

A. Windows 9x/ME/2000/XP INF Update Utility:

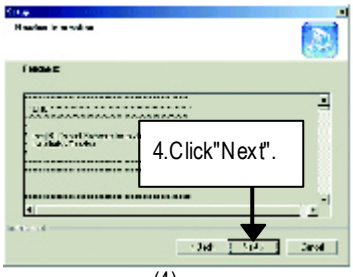
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)

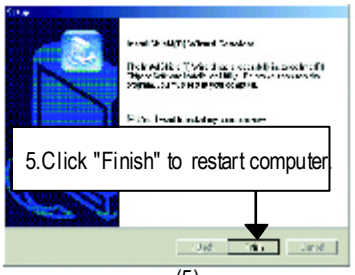
(2)



(3)



(4)



(5)

B. Intel Ultra ATA Storage Driver:

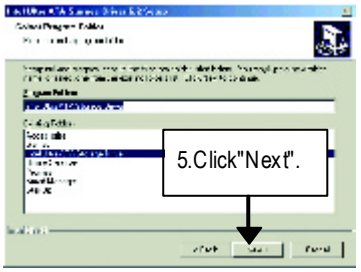
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)

(2)

(3)

(4)



(5)

C: Sound Driver Installation

(1)

(2)

(3)

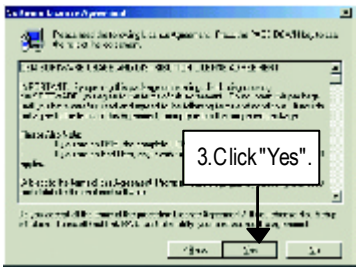
D: Network Driver Installation

E: Promise RAID Driver Installation

F: Fast Trak Utilies Installation

(1)

(2)

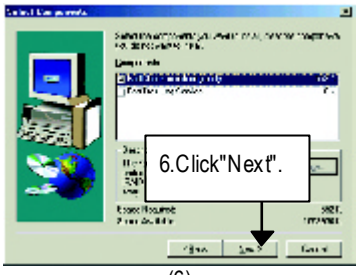


(3)

(4)


5.Click"Next".

(5)


6.Click"Next".

(6)


7.Click"Next".

(7)


8.Click"Next".

(8)


9.Click"Next".

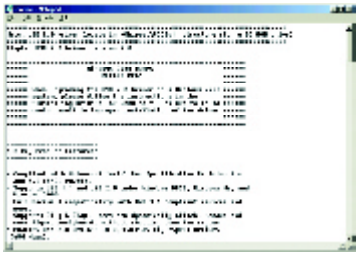
(9)


10.Click"Next".

(10)

G: USB 2.0 Host Controller Driver

(1)

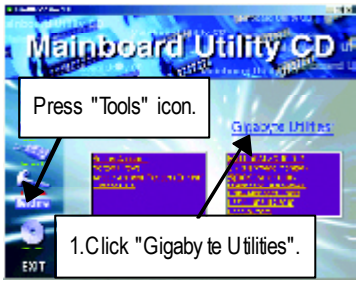


(2)

Click “USB2.0 Host Controller Driver” Item

Appendix B: EasyTuneIII Utilities Installation

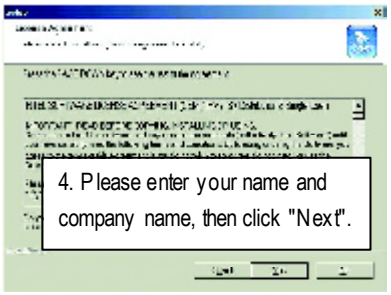
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.



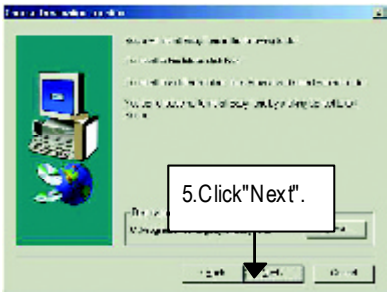
(1)

(2)

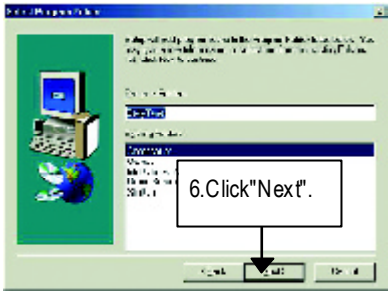
(3)



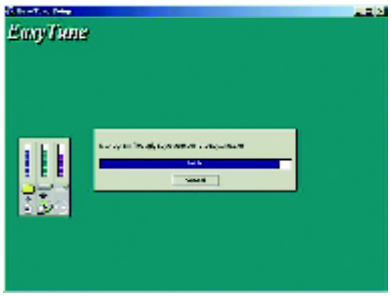
(4)


5.Click"Next".

(5)


6.Click"Next".

(6)


EasyTune

(7)


7.Click "Finish" to restart computer.

(8)

Appendix C: Face-Wizard Utilities Installation

What is Face-Wizard™?

Face-Wizard™ is a windows based utility with user-friendly interface that allows users to change the boot-up logo with picture from Gigabyte Logo Gallery on web site or other compatible picture you have.

How does it work?

Face-Wizard™ allows user to select BIOS on board or file in hard drive, floppy disk , zip, MO or other storage devices and combine the compatible picture you prefer into BIOS. And not only this, Face-Wizard™ also helps user to update BIOS in windows mode.

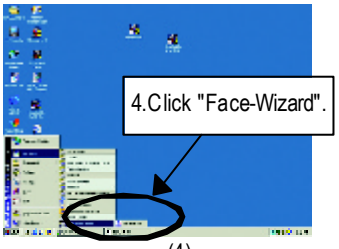
What's benefit for using Face-Wizard™?

It can personalize boot-up logo to show your unique style from others, and never again looking at the black and white boot up screen.

(1)

(2)

(3)



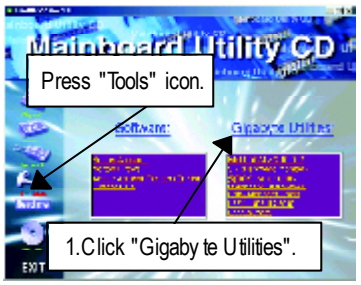
(4)

(5)

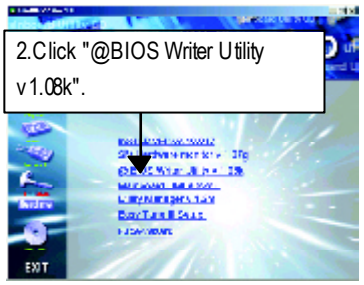
BIOS Flash Procedure

BIOS update procedure:

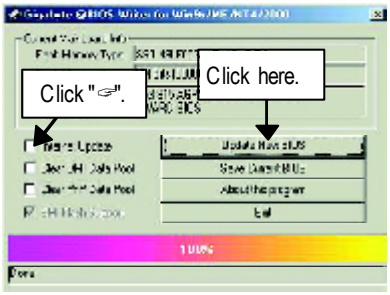
If your OS is Win9X, we recommend that you used Gigabyte @BIOS™ Program to flash BIOS.



(1)



(2)



(3)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon
b. Click "Update New BIOS" icon
c. Select @BIOS™ sever ("Gigabyte @BIOSTM sever 1 in Taiwan" and "Gigabyte @BIOS™ sever 2 in Taiwan" are available for now, the others will be completedsoon)
d. Select the exact model name on your motherboard
e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

a. Do not click "Internet Update" icon
b. Click "Update New BIOS"
c. Please select "All Files" in dialog box while opening the old file.
d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8IRXP.F1).
e. Complete update process following the instruction.

III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

Note:

a. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
b. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
c. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.
d. Please note that any interruption during updating will cause system unbooted

We use GA-7VTX motherboard and Flash841 BIOS flash utility as example.

Please flash the BIOS according to the following procedures if you are now under the DOS mode.

Flash BIOS Procedure:

STEP 1:

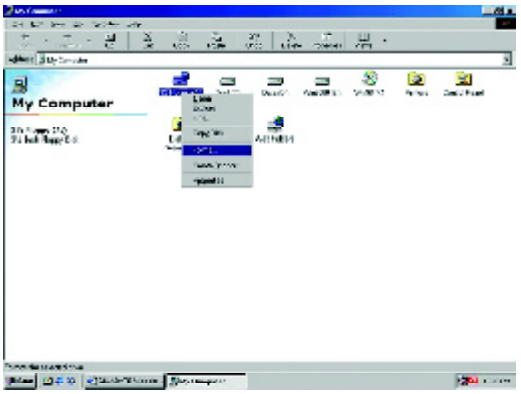
(1) Please make sure you have set "Auto" for BIOS Feature Setup (BIOS Flash Protection). For more detail please refer to page 8.

(2) Please make sure your system has installed the extraction utility such as winzip or pkunzip. Firstly you have to install the extraction utility such as winzip or pkunzip for unzip the files. Both of these utilities are available on many shareware download pages like http://www.shareware.cnet.com

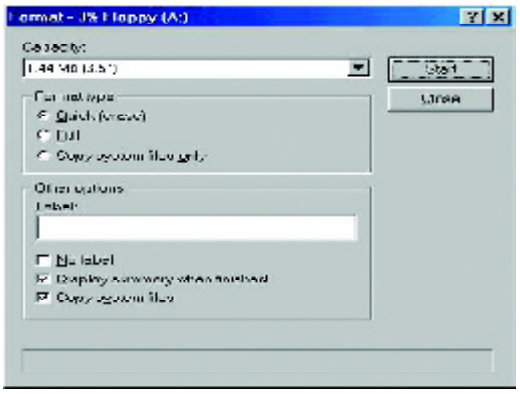
STEP 2: Make a DOS boot diskette. (See example: Windows 98 O.S.)

Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.

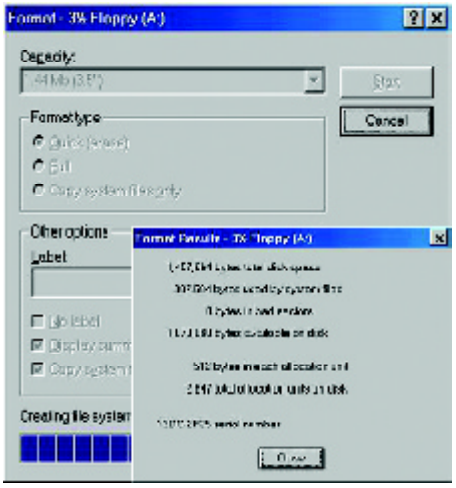
(1) With an available floppy disk in the floppy drive. Please leave the diskette "UN-write protected" type. Double click the "My Computer" icon from Desktop, then click "3.5 diskette (A)" and right click to select "Format (M)"



(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.
Beware: This procedure will erase all the prior data on that floppy, so please proceed accordingly.



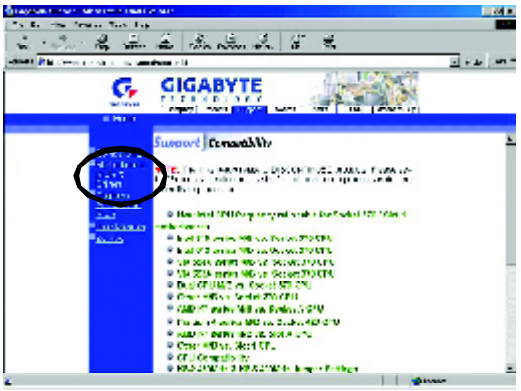
(3) After the floppy has been formatted completely, please press "Close".



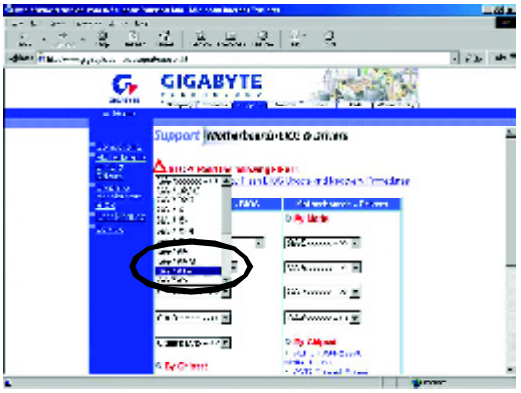
STEP 3: Download BIOS and BIOS utility program.

(1) Please go to Gigabyte website http://www.gigabyte.com.tw/index.html, and click "Support".

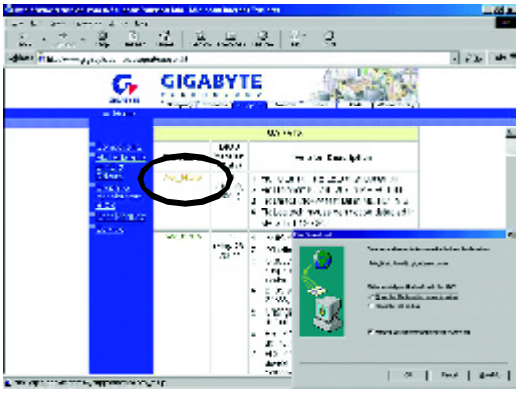
(2) From Support zone, click the "Motherboards BIOS & Drivers".



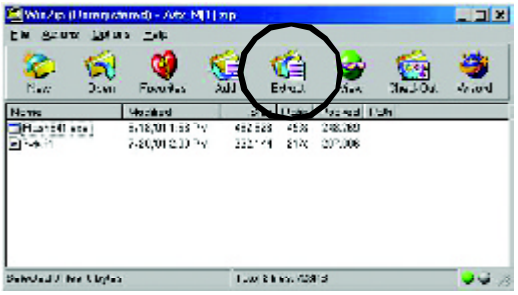
(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.



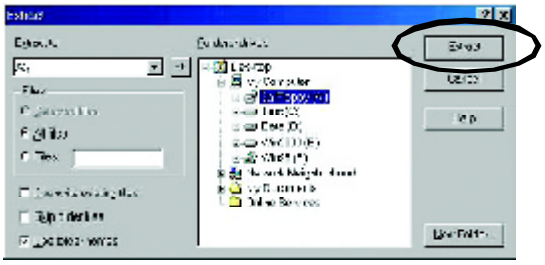
(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".



(5) At this time the screen shows the following picture, please click "Extract" button to unzip the files.



(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".



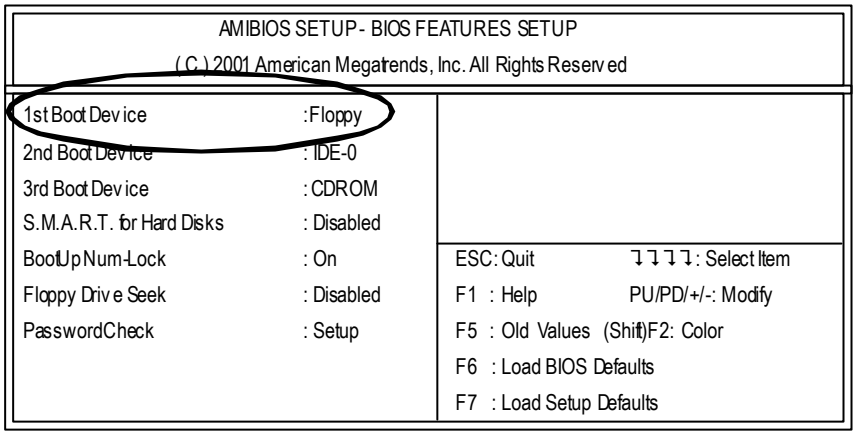
STEP 4: Make sure the system will boot from the floppy disk.

(1) Insert the floppy disk (contains bootable program and unzip file) into the floppy drive A. Then, restart the system. The system will boot from the floppy disk. Please press <DEL> key to enter BIOS setup main menu when system is boot up.

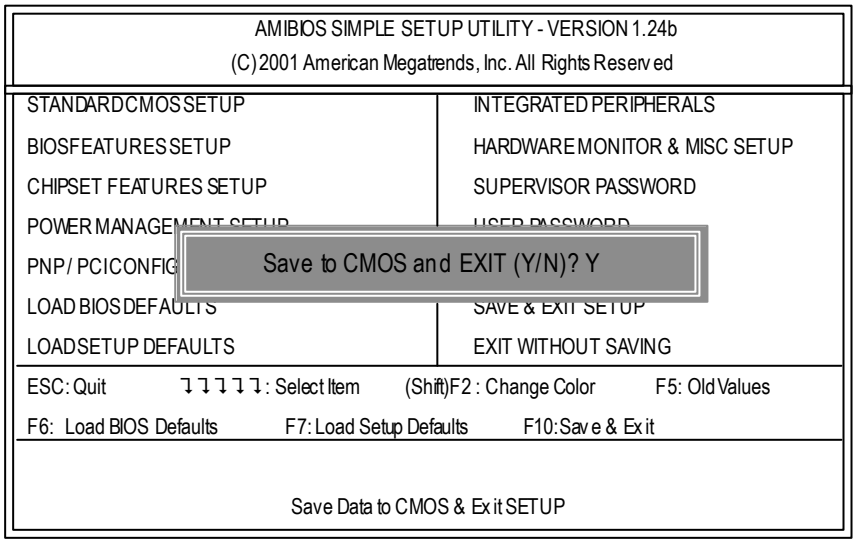
(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b (C) 1999 American Megatrends, Inc. All Rights Reserved	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/ PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC: Quit ↑↓→←: Select Item	(Shift)F2 : Change Color F5: Old Values
F6: Load BIOS Defaults	F7: Load Setup Defaults F10: Save & Exit
Time, Date , Hard Disk Type...	

(3) Press "Enter" to enter "BIOS FEATURES SETUP" menu. Use the arrows to highlight the item "1st Boot Device", and then use the "Page Up" or "Page Down" keys to select "Floppy".



(4) Press "ESC" to go back to previous screen. Use the arrows to highlight the item "SAVE & EXIT SETUP" then press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.

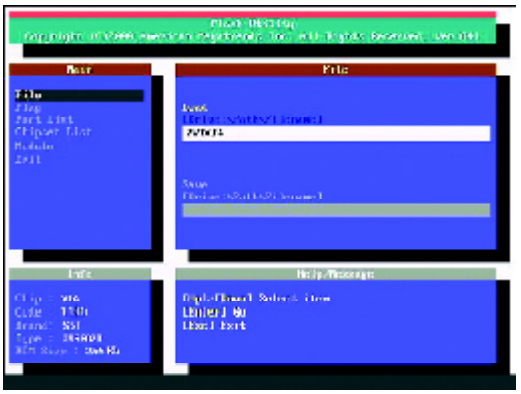


STEP 5: BIOS flashing.

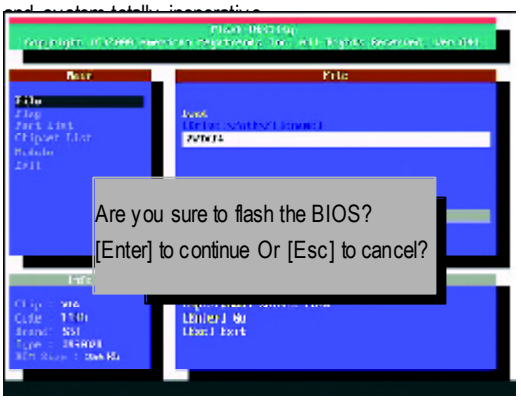
(1) After the system boot from floppy disk, type "A:\> dir/w" and press "Enter" to check the entire files in floppy A. Then type the "BIOS flash utility" and "BIOS file" after A:\>. In this case you have to type "A:\> Flash841 7VTX.F4" and then press "Enter".

```
Starting Windows 98...

Microsoft(R) Windows98
   © Copyright Microsoft Corp 1981-1999

A:\>dir/w
   Volume in drive A has no label
Volume Serial Number is 16EB-353D
Directory of A:\
COMMAND.COM    7VTX.F4   FLASH841.EXE
            3 file(s)      838,954 bytes
            0 dir(s)       324,608 bytes free

A:\> Flash841 7VTX.F4
```

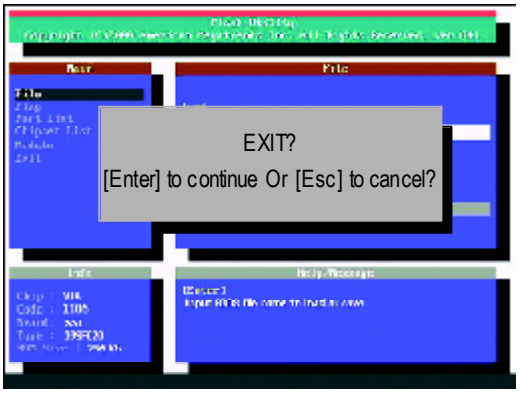
(2) Now screen appears the following Flash Utility main menu. Press "Enter", the highlighted item will locate on the model name of the right-upper screen. Right after that, press "Enter" to start BIOS Flash Utility.



(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue the
procedure, or press [ESC] to quit.
Beware: Please do not turn off the system while you are upgrading BIOS. It will render your BIOS corrupted and system totally inoperative.



(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.

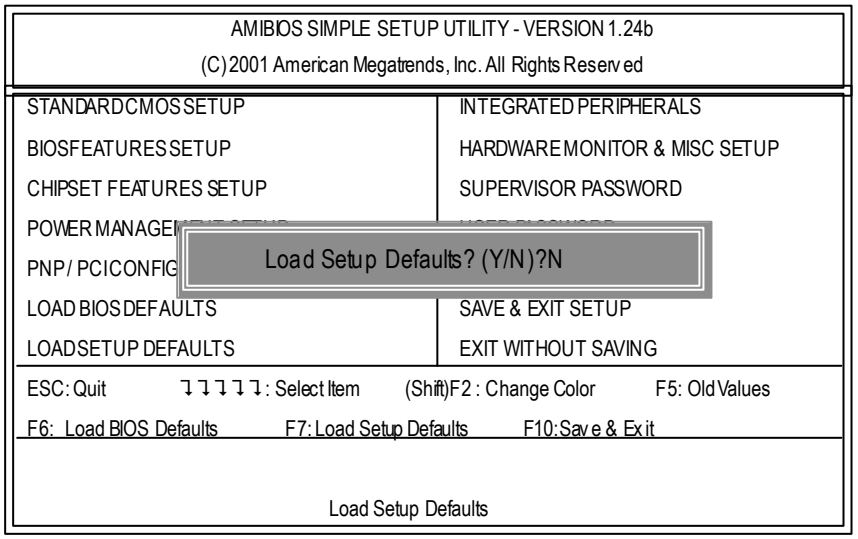


STEP 6: Load BIOS defaults.

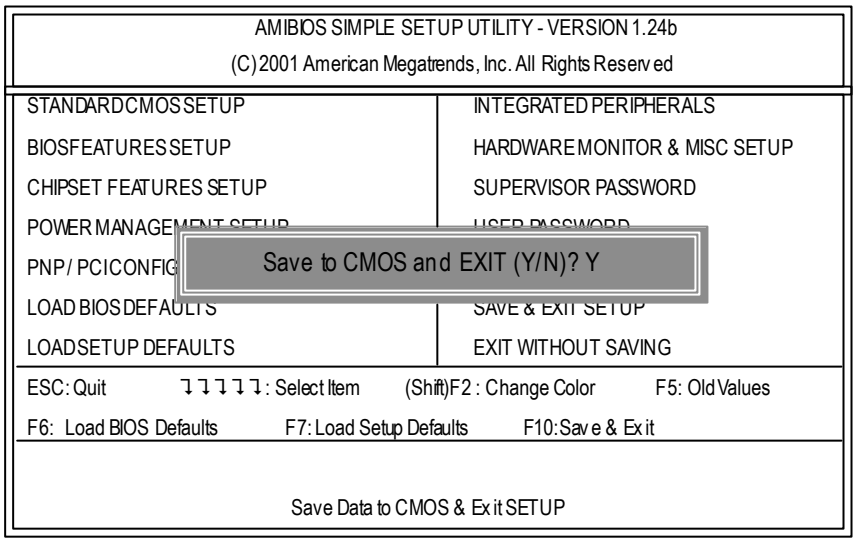
Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded. This important step resets everything after the flash.

(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.

(2) Don't forget to press <DEL> key to enter BIOS setup again when system is boot up. Use the arrows to highlight the item "LOAD SETUP DEFAULTS" then press "Enter". System will ask "Load Setup Defaults (Y/N)?" Press "Y" and "Enter" keys to confirm.



(3) Use the arrows to highlight the item "SAVE & EXIT SETUP" and press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.



(4) Congratulate you have accomplished the BIOS flash procedure.

Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

to be continued.....

Acronyms	Meaning
IOAPIC	Input Output Advanced Programmable Input Controller
ISAIndustry	Standard Architecture
LAN	Local Area Network
I/O	Input / Output
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description: