Declaration of Conformity

According to 47 CFR, Parts 2 and 15 of the FCC Rules

The following designated product:

EQUIPMENT: MAINBOARD

MODEL NO.: 9LIF6

is a Class B digital device that complies with 47 CFR Parts 2 and 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This declaration is given to the manufacturer:

CHAINTECH-EXCEL COMPUTER INC.
4427 Enterprise St. Fremont, CA 94538, U.S.A.
http://www.chaintech-excel.com
Chaintech President: Simon Ho
Signature:

9LIF6

Motherboard

Intel® Socket 478
Intel® 845GL + ICH4
u-ATX Motherboard

User's Manual

V.2_E

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

* This device may not cause harmful interference.
* This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for audio noise emissions from digital apparatuses set out in the Radio Interference Regulations of the Canadian Department of Communications.

Manufacturer's Disclaimer Statement

The information in this document is subject to change without notice and does not represent a commitment on the part of the vendor. No warranty or representation, either expressed or implied, is made with respect to the quality, accuracy or fitness for any particular purpose of this document. The manufacturer reserves the right to make changes to the content of this document and/or the products associated with it at any time without obligation to notify any person or organization of such changes. In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages arising out of the use or inability to use this product or documentation, even if advised of the possibility of such damages. This document contains materials protected by copyright. All rights are reserved. No part of this manual may be reproduced or transmitted in any form, by any means or for any purpose without expressed written consent of it's authors. Product names appearing in this document are mentioned for identification purposes only. All trademarks, product names or brand names appearing in this document are registered property of their respective owners.

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TABLE OF CONTENTS

Chapter 1 Introduction 1

1-1 Product Specifications 1
1-2 Package Contents 2
1-3 9LIF6 Motherboard Diagram 3
1-4 9LIF6 Motherboard Layout 4

Chapter 2 Hardware Setup 5

2-1 Installing a CPU Processor for Socket 478 5
2-2 Setting Your CPU's Performance: 5
2-3 Main Memory Configuration 6
2-4 Connector and Jumper Reference Chart 6
2-5 Connector and Jumper Settings 7

Chapter 3 BIOS Setup Program 11

3-1 Standard CMOS Setup 12
3-2 Advanced BIOS Features 13
3-3 Advanced Chipset Features 16
3-4 Integrated Peripherals 17
3-5 Power Management Setup 20
3-6 PNP/PCI Configurations 23
3-7 Frequency/Voltage Control 24
3-8 Load Fail-Safe Defaults 24
3-9 Load Optimized Defaults 25
3-10 Supervisor Password & User Password Setting 25
3-11 Save and Exit Setup 25
3-12 Exit Without Saving 25

Chapter 4 How to update your BIOS? 26

Chapter 1 Introduction

1-1 Product Specifications

Processor

- Supports Intel® Socket 478 CPU.
- Supports Intel® Celeron / Pentium 4 system bus at 400MHz.

Chipset

- Intel® 845GL + ICH4 Chipset.

Main Memory

- Supports two 184-pin DDR DIMM sockets up to 2GB.
- Supports PC1600/2100 DDR SDRAM modules.

Expansion Slots

- Three 32-Bit PCI slots (v2.2 compatible).

On-board video subsystem

- Integrated 2D/3D graphics accelerator.
- Full frame DVD audio and video playback.
- Integrated 24-bit 230MHz RAMDEC.
- Shared system memory use Intel® D.V. M, technology.

Audio subsystem via AC-Link

- With external high quality AC'97 Codec
- Complete software driver supports for Windows® OS

Embedded USB 2.0/1.0 Host Controller

- Three EHCI USB 2.0 Controllers support total 6 USB 2.0/1.1 Ports - Support USB 2.0 High-Speed Device @480 Mb/s Transfer Rates
- Optional USB adapter for additional USB2.0/1.1 ports

Two Ultra DMA-66/100 PCI IDE Controller

- Supports PIO Mode 4 up to 16.6 Mbps, Multi-Word DMA Mode 2 and Ultra DMA mode 5 up to 100MB/s with Bus Mastering.
- Bus-Mastering software drivers for all common multitasking operating systems

On board Super I/O IT 8711Controller

- Two UARTs support serial ports.
- One SPP/ECP/EPP parallel port.
- One floppy disk drive connector supports up to 2.88MB

Boot-Block Flash ROM

- Award system BIOS support PnP, APM, DMI, ACPI, & Multi-device booting features.

Fast Ethernet/Home Networking Controller

- On Board Realtek RTL 8101L support 10/100Mb Fast Ethernet or 1/10Mb HomePNA 2.0.

1-2 Package Contents

This product comes with the following components:

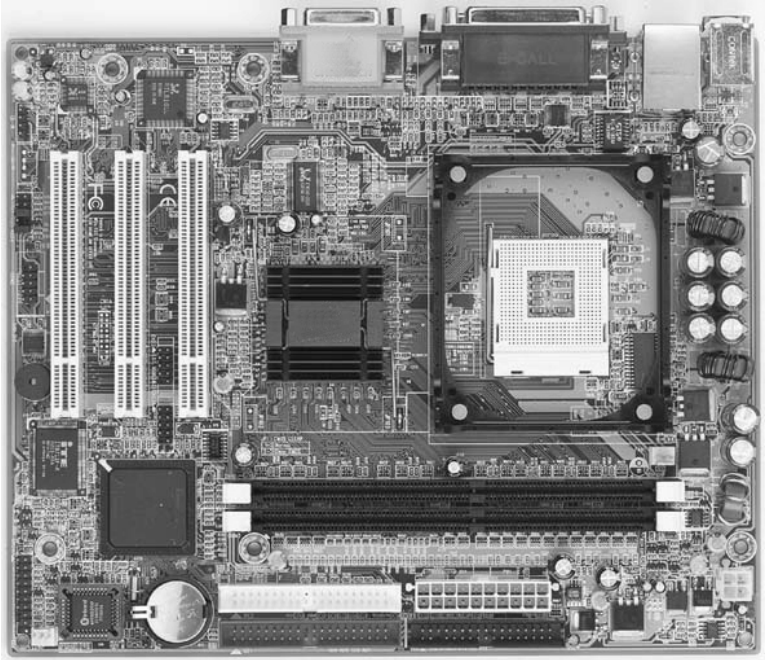
1. Motherboard x 1
2. 40-Pin UDMA-100 IDE Cable x 1

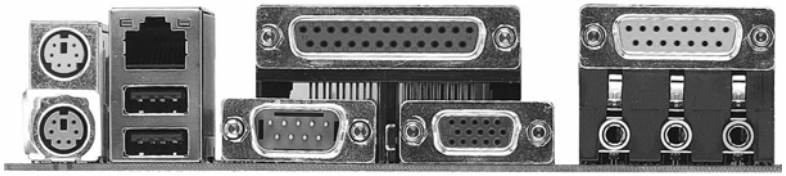
   Blue to motherboard, **Gray** to Master and **Black** to Slave.
3. 34-Pin floppy Disk Drive Cable x 1
4. Manual x 1
5. Driver CD x 1

   Includes:

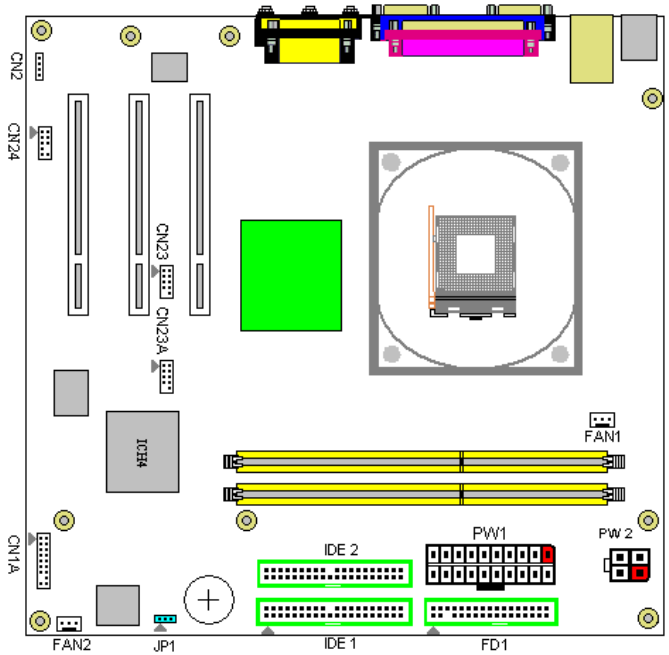
- Award DMI Utility for DOS
- Audio and VGA drives and utility
- Intel® Chipset Software installation utility.

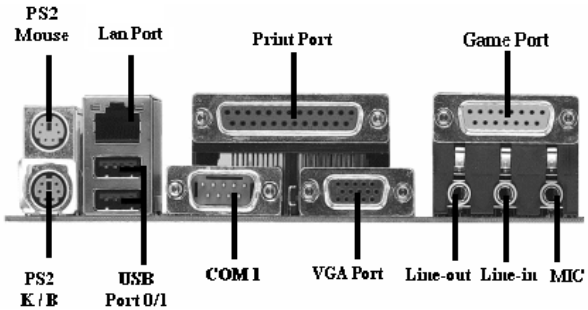
1-3 9LIF6 Motherboard Diagram





1-4 9LIF6 Motherboard Layout





Chapter 2 Hardware Setup

If your motherboard has already been installed in your computer you may still need to refer to this chapter if you plan to upgrade your system's hardware.

This motherboard is electrostatic sensitive. Do not touch without wearing proper safety gadget and make sure to disconnect the power cable from the power source before performing any work on your motherboard. Not doing so may result in electrical shock!

2-1 Installing a CPU Processor for Socket 478

The Intel® Socket 478, designed for the Pentium 4 processor, has been incorporated as a standard motherboard specification. To insert your CPU into Socket 478 please follow the steps bellow:

1. Locate the 478-pin CPU socket on the motherboard.
2. Unlock the socket by pressing the leaver sideways, and then open it up to a 90-degree angle.
3. Locate a Gold Mark on the top surface of the CPU, which is close to one of the CPU corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 on the CPU.
4. Gently insert the CPU with Gold Mark/Pin 1 at the same corner of Socket 478, which is located close to the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU.
5. When the CPU is correctly inserted, close the leaver with your finger on to of the CPU to make sure the CPU is properly embedded into the socket.
6. Insert an appropriate heat-sink and fan for proper Heat dispatch.

Installing a standard Intel® specified heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-2 Setting Your CPU's Performance:

This motherboard uses a new user-friendly technology that enables the user to setup a main board's CPU parameters through an easy to use BIOS setup procedure. It is no longer necessary to make many jumper settings as on conventional motherboard. After installing all your hardware into your PC system, you can manually configure your CPU clock ratio and CPU clock according to your processor's specifications. By turning on your system's power. Enable the CMOS Setup Utility by pressing the delete key when your BIOS identification screen appears, then go to the Frequency/ Voltage control option and select your CPU clock ration and CPU clock speed

(please refer to Chapter3 for more details).

You do not need to make voltage settings because this board will automatically set your CPU voltage.

2-3 Main Memory Configuration

The DDR DRAM memory system consists two banks and can support the memory size up to 1 GB per DIMM. If you only use one bank it does not matter which one you use and if you use two or more banks, it does not matter which bank you install first.

DRAM Specifications

DIMM type: 2.5V, unbuffered 184 pin 64/128/265/512-bit DDR DRAM.
Module size: Single/double-sided 64/128/256/512 Mbytes or 1GB.
Parity: Ether parity or non-parity.

The types of DDR Memory modules that are allowed for each DIMM are shown as followed:

Location	64 MB	128 MB	256 MB	512 MB	1.0 GB
DDR 1	X	X	X	X	X
DDR 2	X	X	X	X	X

2-4 Connector and Jumper Reference Chart

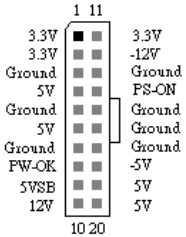
Jump Connector	Function	Page
PW 1/2	ATX Power Supply Connector	7
JP1	CMOS Clear Jumper	8
FAN 1/2	CPU/ System Cooling Fan Connector (12V)	8
CN1A	Front Panel (Power / Rest / SPK…etc.) Connector	8
CN2/2A(Optional)	CD-ROM Audio-in Connector	9
CN23/23A	USB Connector for USB 2/3, 4/5	9
CN24	Front Audio Connector	10

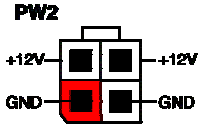
2-5 Connector and Jumper Settings

Connectors are used to link the system board with other parts of the system, including the power supply, the keyboard, and the various controllers on the front panel of the system case.

The power supply connector is the last connection to be made while installing a motherboard. Before connecting the power supply, please make sure it is not connected to the power source.

PW 1 / 2 (ATX Power Supply Connector):





The power cord leading from the system's power supply to the external power source must be the very last part connected when assembling a system. The ATX power supply provides a single 20-pin connector interface, which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply maintains the system in its minimum power state. The ATX 12V power supply has a new +12V (4-pin) and +5V / 3.3V (6-pin) auxiliary power connector. To enable the delivery of more +12 VDC and + 5/ 3.3V VDC current to the motherboard.

Software Power-Off Control

This motherboard can be powered down using Windows® 9x Software Power-Off function. To power down your computer, click the START button on the Windows® 9x task bar. Select “Shut down the computer” and the system turns off. The message “It is now safe to turn off your computer” will not be shown when using this function.

Power-On By Modem:

While in Soft-Off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu. (See section **3**)

Blinking LED in Suspend Mode:

While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu. (See section **3**)

Poly-fuse Over Current Protection:

The poly-fuse protects the system from dangerous voltages that the system might be

exposed to via the keyboard or USB connector. In case of such exposure, the poly-fuse will immediately be disconnected from the circuit, just like a normal fuse. After being disconnected for a certain period of time, the poly-fuse will return to its normal state. Then the keyboard or USB connector can function properly again. Unlike conventional fuses, the poly-fuse does not have to be replaced, relieving the user wasted time and inconvenience.

JP1 (CMOS Clear Jumper):

There is a CMOS RAM on board that has a power supply from external battery to keep the data and system configuration. To clear the contents of the CMOS, please follow the steps below.

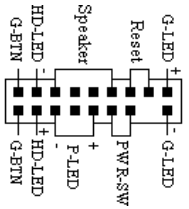
Pin	Definition
1-2	Normal (default)
2-3	Clear CMOS Data

1. Disconnect the system power supply from the power source.
2. Set the jumper cap at location [**2-3**] for <**5 seconds**>, and then set it back to the default position.
3. Connect the system's power and then start the system.
4. Enter BIOS's CMOS Setup Utility and choose Load Setup Defaults. Type [**Y**] and then press [**Enter**] to continue.
5. Set the system configuration in the Standard CMOS Setup menu.

FAN1/FAN2 (CPU/System Cooling Fan Connectors):

The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal. Connect the north bridge-cooling fan to FAN3. The wiring and plug may vary depending on the manufacturer. On standard fans, the red wire is positive (+**12V**) and the black wire is ground.

CN1A (Front Panel Connector):



1. **PWR-SW** (Over-ride Power Button Connector):
   The power button on the ATX chassis can be used as a normal power switch as well as a device to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Soft-OFF by PWR-BTTN function in BIOS's Power Management Setup menu must be set to [**Delay 4 Sec.**] to activate this function. When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurrence of external

activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than [**4 seconds**] will switch the system completely off. See Over-ride Power Button Operation diagram.

2. **P-LED** (Power LED Connector):
   The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)
3. **G-BTN/G-LED** (Green Button Switch/LED Connector):
   Some ATX cases provide a Green button switch, which is used to put the system in Suspend mode. In Suspend mode, the power supply to the system is reduced to a trickle, the CPU clock is stopped, and the CPU core is in its minimum power state. The system is woken up whenever the keyboard or mouse is touched. The system resumes in different ways as defined by Power Management Setup screen in BIOS.

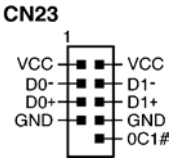
For Green LED connector please refer to Section 2.7 CBOX™ 2

4. **RESET** (System Reset Switch Connector):
   This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.
5. **SPEAKER** (Speaker Connector):
   This 4-pin connector connects to the case-mounted speaker.
6. **HD-LED** (IDE Activity LED Connector):
   The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

CN2/2A(Optional) (CD-ROM Audio-in Connector):

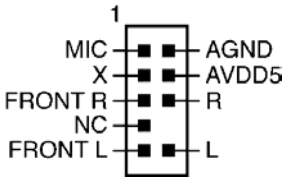
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your motherboard. This will enable your CD-ROM's audio function.

CN23/23A (USB Connector for USB 2/3, 4/5)



If you want to use a USB Keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3). This board contains a USB Host controller and includes a root hub connector for optional USB Adaptor (USB 2/3; 4/5).

CN24 (Front Audio Connector):



This connector give you the option of a front panel audio jack cable ext. to be plug into a special custom designed system case. Simply remove the two jumper caps at pin [**5-6**] and [**9-10**] then plug it into the (optional) cable ext. connector. Pin [**5-6**] and [**9-10**] are shorted (default) to enable the back panel audio function.

Chapter 3 BIOS Setup Program

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

To enter the **Phoenix-Award BIOS** setup program press the [**Delete key**] when you **Power on** or **reboot** the computer system. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item by your arrow keys and press enter to make the changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the right side of the screen.

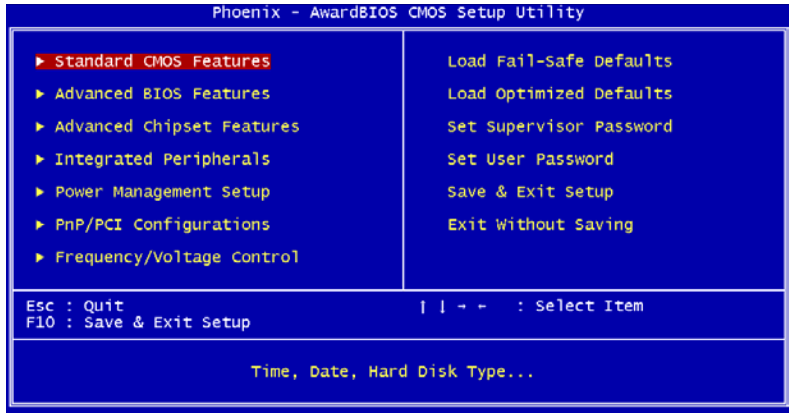


Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Setup

The Standard CMOS Setup allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot-up error signaling. This configuration menu should be changed when installing a motherboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure 3-1) to display the following screen.

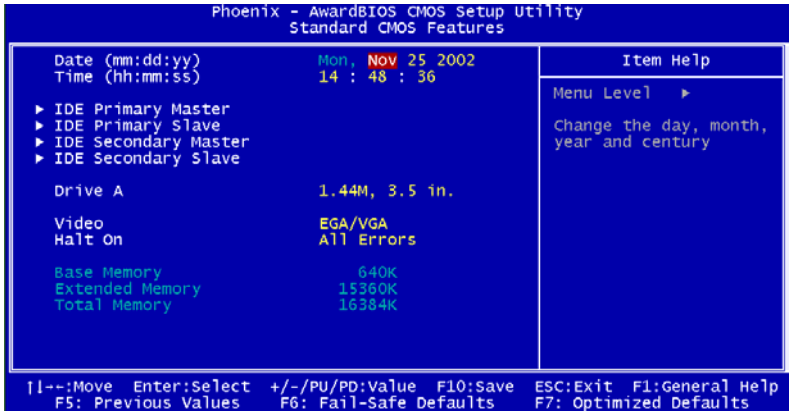


Figure 3-2 Standard CMOS Feature Screen

Date/Time:

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

IDE (Primary/Secondary; Master/Slave):

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

Drive A:

Select different Floppy device Model. Available options are [None], [360K, 5-1/4 in], [1.2M, 5-1/4 in], [720k, 3-1/2 in], [1.44M, 3-1/2 in], and [2.88M, 3-1/2 in].

Video:

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

Halt On:

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

specific errors.

3-2 Advanced BIOS Features

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

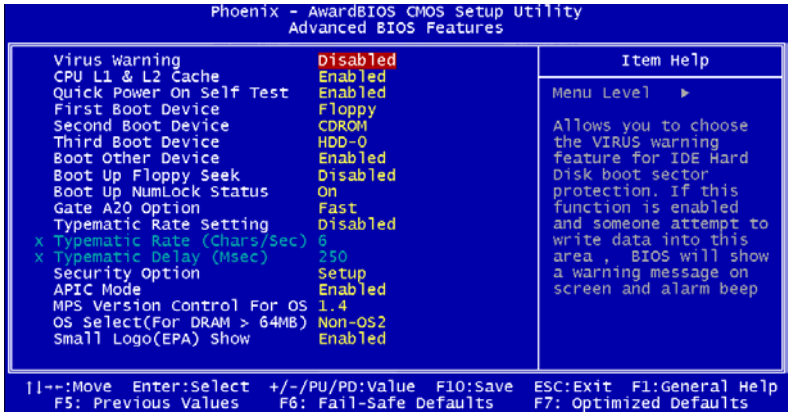


Figure 3-3 Advanced BIOS Feature Screen

Virus Warning:

When you set as enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive.

Many disk diagnostic programs that access the boot sector table can trigger the virus-warning message. If you plan to run such a program, we recommend that you first disable the virus warning.

CPU L1 & L2 Cache:

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level 2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

Quick Power On Self Test (POST):

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS will save time by skipping some items during POST. It is recommended that you disable this setting. Discovering a problem during boot up is better than loosing data during your work.

First/Second/Third/Boot Other Device:

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

Boot up Floppy Seek:

This is a set up check for floppy power-on after starting the computer system.

Boot Up NumLock Status:

This function defines the keyboard's number pad as number keys or arrow keys. If it is set at [**on**] the number keys will be activated, if it is set at [**off**] the arrow keys will be activated.

Gate A20 Option:

This allows you to set the Gate A20 status. When set to [**Fast**], Gate A20 is cont rolled by chipset. When set to [**Normal**], Gate A20 is cont rolled by a specific pin from the keyboard controller. Available options are [**Fast**] and [**Normal**].

Keyboard Interface：

1. Typematic Rate Setting
   When enabled, you can set the following two-typematic control items. When disabled, the keyboard controller determines keystrokes arbitrarily in your system.
2. Typematic Rate (Chars/Sec)
   The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.
3. Typematic Delay (Msec)
   The typematic delay sets how long after you press a key that a character begins repeating.

Security Option:

The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3.11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

APIC Mode

This item can enable or disable the APIC (**Advanced Programmable Interrupt Controller**). Due to compliance to PC2001 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQs resources for the system. Available options are [**Enabled**] and [**Disabled**].

MPS Version Control OS:

This item allows you to select which MPS (**Multi-Processor Specification**) version to be used for the operating system. You need to select the MPS version which is supported by your operating system. To find out which version to use, consult the vendor of your operating system. Available options are [**1.4**] and [**1.1**].

OS Select (For DRAM >64MB):

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

Small Logo(EPA) Slow:

This setup allows photo that is EPA. Logo.

3-3 Advanced Chipset Features

By choosing the [**Advanced Chipset Features**] option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the motherboard.

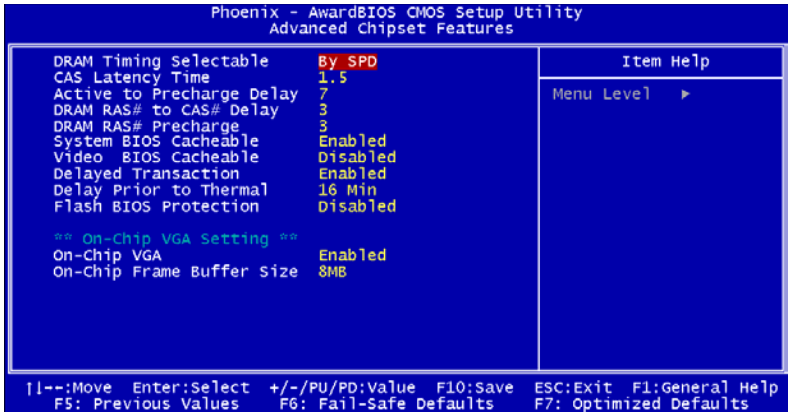


Figure 3-4 Advance Chipset Features Screen

All of the above settings have been determined by the motherboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are some abbreviated descriptions of the functions in this setup menu.

Flash BIOS Protection:

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

On-Chip VGA

This motherboard provides an onboard VGA function you can [**Disable**] or [**Enable**] this function.

On-Chip Frame Buffer Size

The On-Chip VGA will share the buffer of your total system memory you may adjust the size of the shared buffer size. Available options are [**8MB**], [**1MB**].

3-4 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the motherboard.

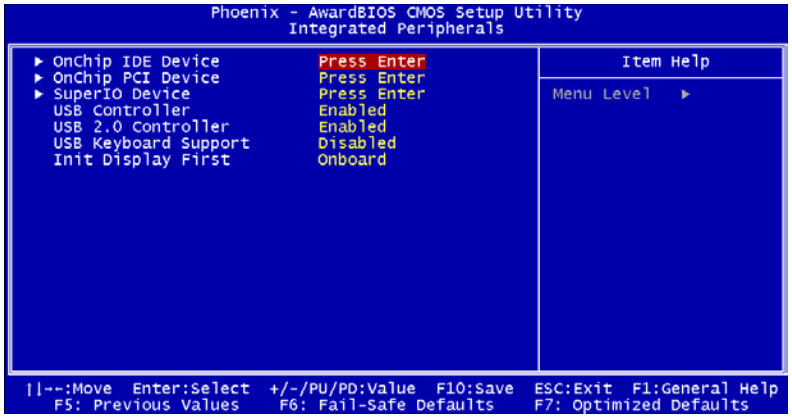
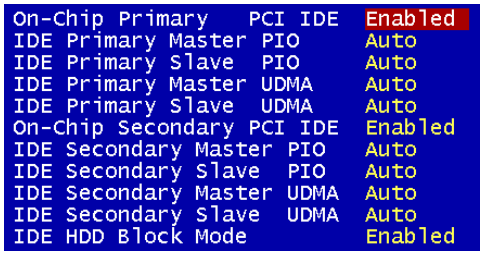


Figure 3-5 Integrated Peripherals Screen

OnChip IDE Device:

Press [**Enter**] to enter the sub-menu, which contains the following items for advanced control:



1. **On-Chip Primary PCI IDE:**
   You can set this to disable the On Chip IDE controller if you are going to add an extra higher performance IDE board.
2. **IDE Primary/Secondary Master/Slave PIO:**
   The four IDE PIO (programmed Input/Output) fields let you set a PIO mode (0-4) for each IDE device that the internal PCI IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

3. **IDE Primary/Secondary Master/Slave UDMA:**
   Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA, select [**Auto**] to enable BIOS support.
4. **IDE HDD Block Mode:**
   Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode, select Enabled to auto-detect the optimal number of block read/writes per sector the drive can support.

OnChip PCI Device:

This section provides information for setting onboard device. By choosing the Integrated Peripherals option from the CMOS Setup Utility menu (Figure 3-5), the screen below is displayed. This sample screen contains the manufacturer's default values for the motherboard

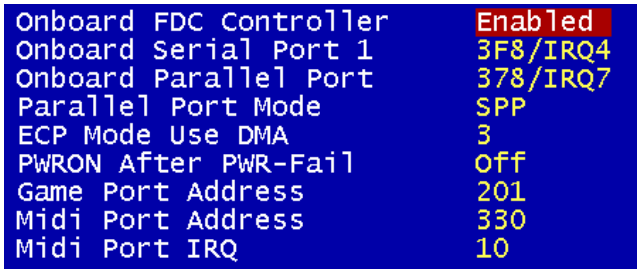
Press [**Enter**] to enter the sub-menu, which contains the following items for advanced control:

1. **AC97 Audio:**
   This feature allows you to disable the on-board AC97 audio function.
2. **AC97 Modem:**
   This item allows you to disable the chipset's feature to support AC97 Modem.

Super IO Device:

This section provides information on setting Super I/O device. By choosing the Integrated Peripherals option from the CMOS Setup Utility menu (Figure 3-5), the screen below is displayed. This sample screen contains the manufacturer's default values for the motherboard.

Press [**Enter**] to enter the sub-menu, which contains the following items for advanced control:



1. **Onboard FDC Controller:**
   Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.
2. **Onboard Serial Port 1:**
   Select an address and corresponding interrupt for the first and second serial ports. Available options are [**3F8/IRQ4**], [**2E8/IRQ3**], [**3E8/IRQ4**], [**2F8/IRQ3**], [**Disabled**], and [**Auto**].
3. **Onboard Parallel Port:**
   Select a logical LPT port address and corresponding interrupt for the physical parallel port.
4. **Parallel Port Mode:**
   Select an operating mode for the onboard parallel (printer) port. Select SPP unless you are certain your hardware and software support one of the other available modes.
5. **ECP Mode Use DMA:**
   This item automatically specifies a DMA channel **1** or **3** for the parallel port when it is set to [**EPP**] or [**ECP+EPP**] mode.
6. **Power After PWR-Fail**
   This item is to set up your power supply mode after a power failure. Available options are [**On**], [**Off**] and [**Former-Sts**].
7. **Game Port Address:**
   This item disables or assigns the address of the Game port. Available options are [**201**] and [**209**].
8. **Mini Port Address:**
   This item disables or assigns the address of the Midi port. Available options are [**300**] and [**330**].
9. **Mini Port IRQ:**
   This item specifies an IRQ for the Midi port.

USB Controller:

Enable the on-board Universal Serial Bus (USB V1.1 or V2.0) controller if you want to connect a USB device to your system. Note that if this setting is disabled, you can still temporarily use a USB keyboard during boot up so that you can enter BIOS and enable this setting. If you pass the boot up stage without enabling this function, your PS/2 keyboard will no longer work.

USB Keyboard Support:

Select Enabled if your system has a USB keyboard installed on the system board. If

your system has no USB keyboard, select Disabled in this field.

Init Display First:

This function allows users to choose between AGP or PCI slot to initialize display.

3-5 Power Management Setup

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

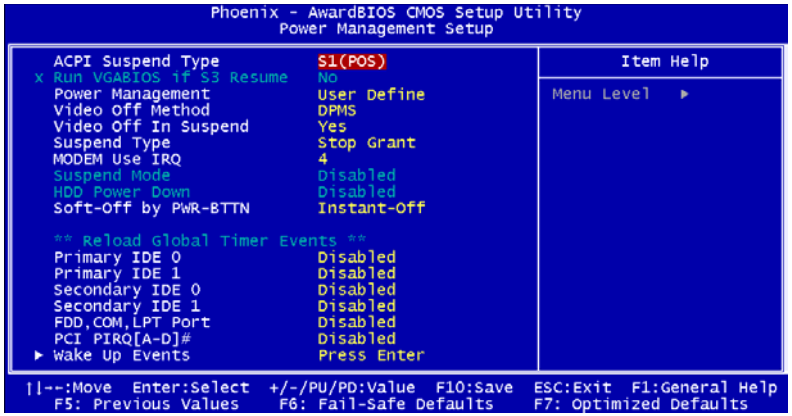


Figure 3-6 Power Management Setup

ACPI Suspend Type:

This feature allows user to select a suspend type for the operating system to turn off peripherals devices, such as CD-ROM players, when they are not in use.

Power Management:

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

Video Off Method:

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

1. **Blank Screen** - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.
2. **V/H SYNC+Blank** - The system turns off the vertical and horizontal

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

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

Video off in Suspend:

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

Modem Use IRQ:

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

Suspend Mode:

The Power Management finction must not be set to disabled to enable this function. If the system runs in Standby mode and the Suspend timer expires, all devices regulated by power management will shut off and the CPU speed will be 0 MHz.

HDD Power Down:

Shuts down any IDE hard disk drives in the system after a period of inactivity as set in this user configurable field. This feature does not affect SCSI hard drives.

Soft-Off by PBWR-BTTN:

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. When set to Instant-Off the Soft-Off by PWR-BTN function is disabled and the computer turns completely off when the power button is pressed.

Wake up Events

1. **Power On by PCI Card:**
   When enabled, a PCI interface that receives a signal will wake up the system from soft off and green mode.

2. **Power On by Modem:**
   When enabled, a Modem will be able to receive a signal and wake up the system from soft off and green mode. You should connect the modem to the COM port and call your PC to power on.
3. **Wake up on LAN:**
   When enabled, a LAN that receives a signal will wake up the system from soft off and green mode.
4. **Power On by Alarm:**
   When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day.
   This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer.
5. **POWER ON FUNCTION:**
   This control show the PS/2 mouse or keyboard can power on the system. Available settings are [**Password**], [**Hot KEY**], [**Mouse Move**], [**Mouse Click**], [**Any KEY**], [**BUTTON ONLY**] and [**Keyboard 98**].
6. **KB Power ON Password**
   This will allow you to set the password when you wake up the system.
7. **HOT Key Power ON**
   This controls the hot key that you use to wake up the system.

3-6 PNP/PCI Configurations

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

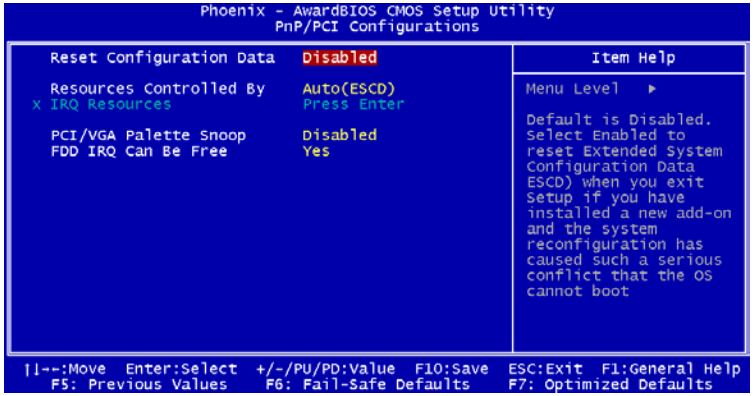


Figure 3-7 PNP/PCI Configurations

Reset Configuration Data:

If you want to reset CMOS IRQ divide hardware device, please selected to [**Enabled**].

Resources Controlled By:

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information. ESCD (**Extended System Configuration Data**) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

PCI/VGA Palette Snoop:

When set to [Enabled], multiple VGA devices operating on different buses can handle data from the CPU on each set of palette registers on every video device. Bit 5 of the command register in the PCI device configuration space is the VGA Palette Snoop bit (0 is disabled). Available options are [**Enabled**] and [**Disabled**].

FDD IRQ Can Be Free:

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

3-7 Frequency/Voltage Control

By choosing the Frequency/Voltage Control option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the motherboard.

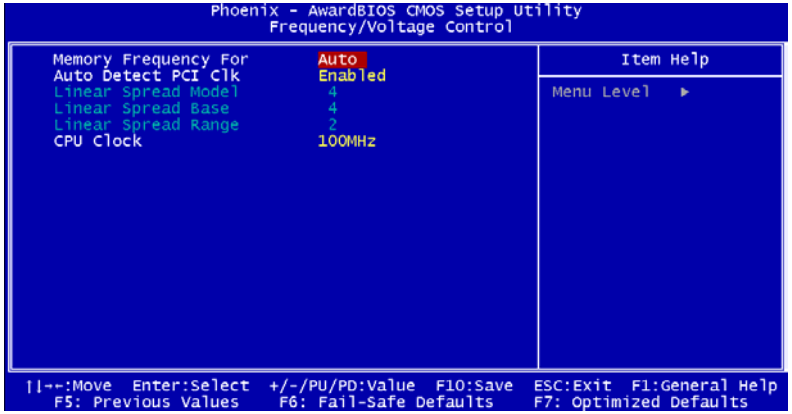


Figure 3-8 Frequency/Voltage Control

CPU Clock:

This feature allows the system memory to run at CPU clock speed. The default setting is at 100Mhz.

Note: This motherboard can support memory overclocking up to 353 MHz, provided that, the CPU clock must be set to run at 133Mhz FSB.

3-8 Load Fail-Safe Defaults

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

3-9 Load Optimized Defaults

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

```
Load Optimized Defaults (Y/N)? N
```

3-10 Supervisor Password & User Password Setting

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-1). When the Security Option function is set to **Setup**, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to **System**, a password is required to enter both BIOS and the computer's operating system (for example Windows® 98) found on the boot drive.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS.

When there is no supervisor password set, the user password controls access to all BIOS settings.

```
Enter Password:
```

3-11 Save and Exit Setup

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

```
SAVE to CMOS and EXIT (Y/N)? Y
```

3-12 Exit Without Saving

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

```
Quit Without Saving (Y/N)? N
```


Chapter 4 How to update your BIOS?

Updating BIOS may result an unstable system. All the data of the old BIOS will be replaced by the new BIOS. Should anything go wrong during the updating process, your system would end up crashed. Please refer to your supplier or manufacture for more support. PLEASE DO NOT UPDATE YOUR BIOS UNTIL YOU HAVE CAREFULLY READ THE FOLLOWING INSTRUCTIONS.

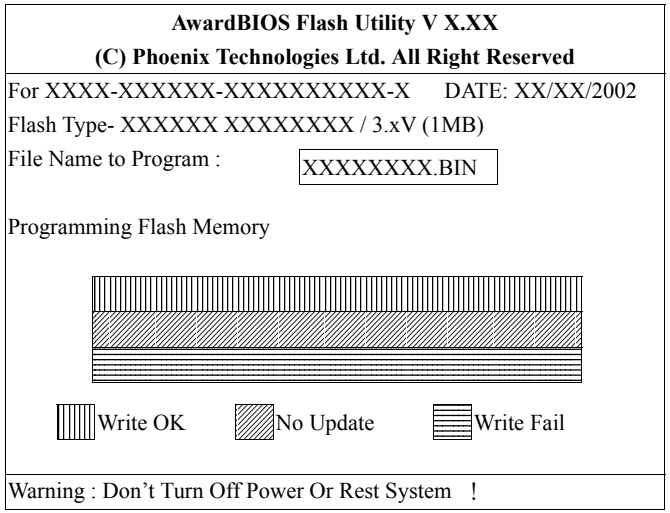
Update Your System BIOS

1. **Find out the exact model name of your motherboard**
   There are different updates for different versions of your motherboard. For example, the 9LIF0 uses different BIOS than the 9LIF1. You will need to know whether your motherboard is a `0` or `1` version (or higher). You can find the model name on the motherboard, which is written between or around one of the PCI slots.
2. **Obtain the latest BIOS update.**
   Obtain the latest BIOS update from supplier or form the manufacture. You can refer to there website for the latest version of BIOS.
3. **Use the correct FLASH utility**
   The FLASH utility has many versions. It is recommended to use the version that came with your motherboard. Only when you experience problems updating the BIOS or if you do not have the FLASH utility, then you can download one of the versions available on the internet.
4. **Disable the FLASH BIOS Protection in the BIOS**
   Some motherboards have [Flash BIOS Protection] option in the BIOS [CHIPSET SETUP]. Please [**Disable**] the option before attempting to update the BIOS.
5. **Unpack the BIOS Update file**
   The file you downloaded in step 2. is most likely to be an executable file. (*.EXE) You can only update your BIOS using a binary file (*.BIN). Unpack the file by clicking its name. The file should automatically unpack into the binary file.
6. **Startup your system under DOS without any TSR`s installed**
   The FLASH utility can only work well when there are no memory drivers or other TSR`s installed. It is recommended to start up your system from a floppy disk, (run FORMAT A: /S under DOS to create a start up disk which only has the system COMMAND.COM); or press F8 to bypass the AUTOEXEC.BAT and CONFIG.SYS startup files.
7. **Run the FLASH utility**
   Make sure the BIOS update binary file is in the same directory as the FLASH utility. Remember the exact name of the BIOS update file. (Please pay attention to `0`(zero) and o (letter `O`)). Then run the flash utility.

On the screen the program will ask for the [File Name to Program]. Type in the exact name of the BIOS update binary file, including the *.BIN, and press [**ENTER**]. The program will now ask you if you want to save your current BIOS version. Choose [**ENTER**] and type a filename for your current BIOS version, for example OLDBIOS.BIN.

Press [**ENTER**] and the program will save the current BIOS data to your current path. Now the program will ask you to confirm your wish to update the BIOS using the file you mentioned earlier. Press [**Y**] to confirm.

The updating process will now start. Screens bellow will appear which indicates the progress of the updating process.



8. **Wait until the system finishes the updating process and the message: [*Please Power Off Or Reset System!*] appears.**

Now you can power off your system. Wait for a few seconds and turn on your system again. You should now be able to see the new BIOS date code appearing in the left upper corner of the screen.

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