FCC

Declaration of Conformity

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

The following designated product:

EQUIPMENT: MAINBOARD
MODEL NO.: 7SIA

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 U.S., INC.
4427 Enterprise ST. Fremont, CA 94538, U.S.A.

hattp://www.chaintech-excel.com

Chaintech President: Simon Ho

Signature:

Federal Communications Commission Statement

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

- w This device may not cause harmful interference
- w 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:

- w Reorient or relocate the receiving antenna.
- w Increase the separation between the equipment and receiver.
- w Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- w 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

July 2001

Printed in Taiwan

100% POST-CONSUMER RECYCLED PAPER

Table of Contents

Chapter 1

Introduction

1-1 Product Specifications

❒ **Processor**
- Supports AMD Socket A Duron/Athlon processors
- Supports 200MHz (266MHz Internal System Bus)

❒ **Chipset**
- SIS 733 AGP chip

❒ **DRAM Memory**
- Two168-pin DIMM sockets support up to 1GB
- Supports PC-100/PC133 SDRAM Modules

❒ **Expansion Slots**
- One Universal-AGP slot for both 2X/4XAGP (v2.0 compliant)
- Three 32-bit PCI slots (Rev 2.2 compliant)
- One P-CNR slot support modem and audio riser only

❒ **Boot-Block Flash ROM**
- Award System BIOS, supports PnP, APM, DMI,ACPI & Multi-device booting features i.e. floppy, LS120, CD-ROM, HDD(IDE, SCSI), ZIP-ATAPI etc.
- BIOS Wonder technology including ChipAway Virus, Flash BIOS Write Protect, Embedded Flash Utility.

❒ **Embedded Ultra DMA-100 PCI IDE controller**
- Supports two IDE ports up to 4 ATAPI devices
- Supports up to PIO Mode 4 up to 16.6MBps, Multi-Word Mode 4 up to 66MBps and Multi Word Mode 5 up to 100MBps with bus mastering
- Bus Master software drivers for all common multi-task operating systems

❒ **Embedded Super I/O Functions**
- Three UARTs support two serial ports and IR function for HPSIR and ASKIR
- One parallel supports SPP/ECP/EPP
- One floppy disk drive connector supports up to 2.88MB

❒ **Double Stack Back-Panel I/O Connectors** **with PC99 Colored Codes**
  - PS/2 Mini-DIN keyboard and mouse ports
  - Two Channel USB ports
  - Two D-SUB 9-pin male serial port
  - One D-Sub 15-pin female VGA port
  - One D-SUB 25-pin female Printer port
  - One D-SUB 15-pin female Game/MIDI port
  - Audio Line-out, Line-in, Mic-in jacks

❒ **Embedded Audio Subsystem AC-link**
  - Full-duplex operation for simultaneous recording and plackback
  - Built-in FM-emulation music synthesizer
  - External high quality AC' 97 CODEC provides 90dB+SNR CD quality audio

❒ **Embedded USB Controller**
  - USB host controller (UHCI v1.0 compliant) with Root Hub
  - Support up to five USB ports
  - Optional USB riser with 2 additional USB ports

❒ **Embedded System Monitoring Hardware Subsystem**
  - 8 external voltage inputs for CPU Vcore, 2.5v, +12v, +5v and 3.3v (internal detecting) ,5v-stby,3.3v-stby,-12v
  - 1 temperature sensor with thermistor for CPU and System
  - 2 Fan speed (CPU and System) monitoring

❒ **Board Dimensions**
  - Micro ATX form factor, 244mm x 220mm, 4 Layers

1-2 Product Feature

  - Poly-fuse over-current protection with error warning for keyboard circuitry
  - Complete Data Security:
    * **Flash BIOS write protection** against unauthorized access
    * **Trend ChipAway Virus** for a 100% virus free system boot-up
    * **Embbeded Flash Utility** ease the upgrade way and solve the incompatibility between flash type and flash utility
  - Advanced Management Features**:**
    * Power-on events:
      WOL(Wake-on-LAN) network card, Modem ring, RTC Alarm
    * Software power-off control for Win9x
    * Over-ride power button
    * Three states advanced Power-failure recovery: Always On, Always Off, Last state
    * Blinking Power-LED in suspend

1-3 Package Contents

This product comes with the following components:

❒ One mainboard

❒ One 40-pin(80-wire) UDMA-100 IDE connector ribbon cable (Figure 1-1)
   * Color coded connection for UDMA-100 cable
      Blue to mainboard, Gray to Master and Black to slave

❒ One 34-pin floppy disk drive ribbon cable (Figure 1-2)

❒ One (optional) USB port with ribbon cable and bracket (Figure 1-3)

❒ One User's Manual

❒ One CD-ROM that includes

   - Acrobat Reader
   - Award Flash EPROM Utility
   - Award DMI Utility for DOS
   - SiS Bus Master IDE drivers for Win9X, WinNT4.0
   - SiS AGP VXD Driver
   - SiS USB Supplement
   - Audio Driver for DOS/Win95/98/ME/00/NT
   - Audio Utility for Win95/98/ME/00/NT
   - Optional Value Pack 2001 software group including Norton AntiVirus, AutoSave, ADOBE ActiveShare, Acrobat Reader, Imagemore, X-stop, Appio and Ewalla.

 @ See the Readme.txt file in the CD-ROM's root directory for installation instructions of all driver and software utilities.
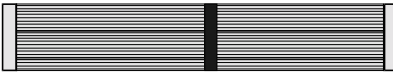
Figure 1-1   UDMA-100 IDE cable
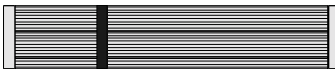
Figure 1-2   Standard Floppy cable
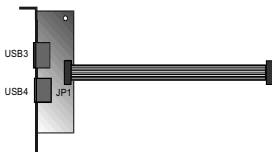
Figure 1-3   Optional USB Port cable adapter

1-4 Mainboard Layout

CN2,CN3,CN4,CN4A   CN6   JP6,JP5,FAN1

CN5,
IR2

CN1,CN7,CN17
JP1,JP2A,JP2B,FAN2

PS/2 Mouse   Printer Port   Game Port

PS/2 Keyboard   USB 0/1   **COM1**   **COM2**   Line-out   Line-in   MIC
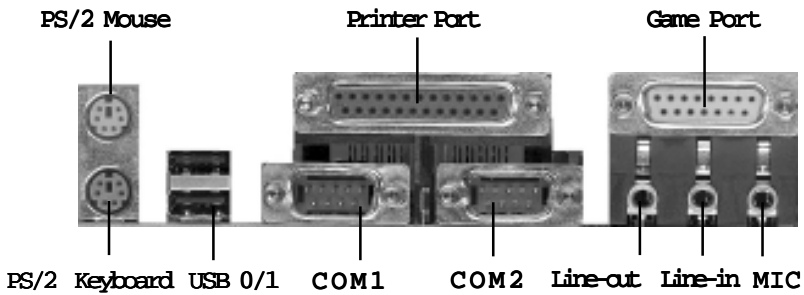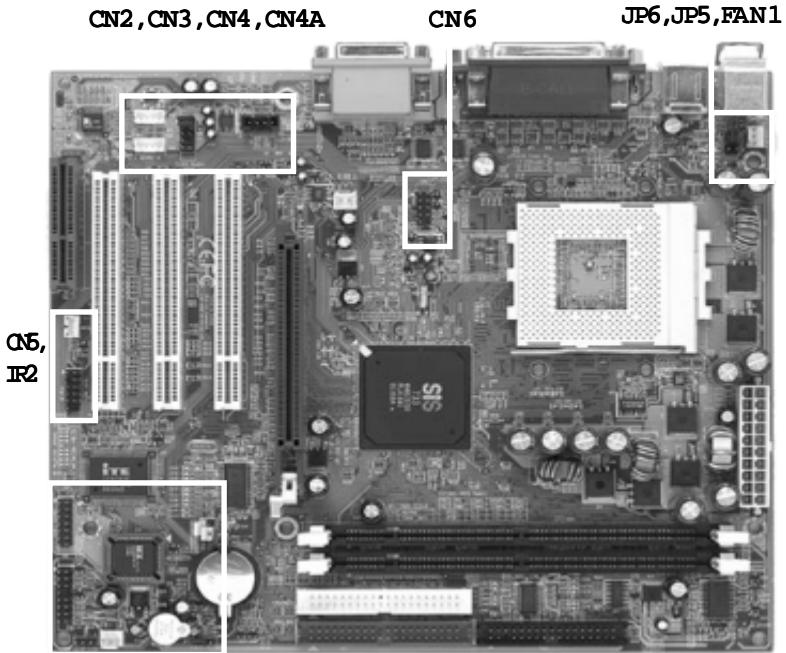
1-5 Connector and Jumper Reference Chart

Jumper & Connector No.	Function	Page
JP1	Clear CMOS Data Jumper	9
JP2A/JP2B	External Clock Frequency	9
JP5	Power-on Keyboard	9
JP6	Power On By USB	9
CN1	Over-ride power button Connector	8
	Power indicator LED Connector	8
	System reset switch Connector	8
	Speaker Connector	8
	Green switch Connector	8
	IDE activity LED Connector	8
CN2	CD-ROM Audio in Connector	9
CN3	Auxiliary Audio-in Connector	10
CN4	Audio Mono -in/out Connector	10
CN4A	Front Panel Audio Connector	10
CN5	WOL (Wake-on-LAN) Connector	10
USB1/CN6	USB 0/1 Ports and USB 2/3 Connector	10
CN7	Smart Card Reader Connector	10
CN17	Blue LED Connector	11
IR2	IR/CIR Connector	11
FAN1/FAN2	CPU/System Cooling Fan Connectors	11
PT1	PS/2 Mouse and Keyboard Ports	11
PW1	ATX Power Supply Connector	7

Chapter 2

Hardware Setup

If your mainboard 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.

⚠️ **Be sure to disconnect the power cable from the power source before performing any work on your mainboard, i. e. installing a CPU, memory module, changing a jumper setting, etc. Not doing so may result in electrical shock!**

2-1 Installing an AMD Processor in Socket A

1. The Socket 462, designed for AMD processors, has been incorporated as a standard mainboard specification.To insert your CPU into Socket A please do the following:
2. Locate a small dot marked on the top surface of the CPU close to one if it's corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 of the CPU.

3. Pull up the lever of Socket 462 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 462 that contains 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. Snap the lever back into place.

⚠️ **Installing a 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 Parameter

Frequency Configuration
If you install a CPU on this mainboard, you must set **JP2A/JP2B** for **CPU Bus Frequency.**

* CPU Speed = Frequency ratio x System Frequency

⚠️ **You do not need to make voltage settings because SeePU automatically sets your CPU voltage.**

2-3 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 mainboard. Before connecting the power supply, please make sure it is not connected to the power source.**

ATX Power Supply Connector (PW1)

12V	⑩	⑳	5V
5VSB	⑨	⑲	5V
PW-OK	⑧	⑱	-5V
Ground	⑦	⑰	Ground
5V	⑥	⑯	Ground
Ground	⑤	⑮	Ground
5V	④	⑭	PS-ON
Ground	③	⑬	Ground
3.3V	②	⑫	-12V
3.3V	①	⑪	3.3V
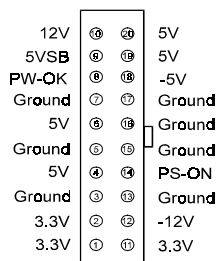
The ATX power supply provides a single 20-pin connector interface which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft-power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply maintains the system in it's minimum power state.

Software Power-Off Control

This mainboard can be powered down using theWindows 95 Software Power-Off function. To power down your computer, click the START button on the Windows 95 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.

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.

Poly-fuse Over Current Protection

The poly-fuse protects the system from dangerous voltages the system might be exposed to via the keyboard or USB connectors. 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, after which the keyboard or USB can function properly again. Unlike conventional fuses, the poly-fuse does not have to be replaced, relieving the user wasted time and inconvenience.

Front Panel Connector Set (CN1) A through F

A. Over-ride Power Button Connector
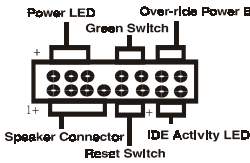
The power button on the ATX chassis can be used as a normal power switch as well as a device to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Soft-OFF by PWR-BTTN function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.

Over-ride Power Button
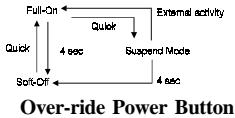
When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurence of external activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than 4 seconds will switch the system completely off. See Over-ride Power Button Operation diagram.

B. Power Indicator 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.)

C. Green Switch Connector

Some ATX cases provide a Green 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 it's 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.

D. 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.

E. Speaker Connector

This 4-pin connector connects to the case-mounted speaker

F. IDE Activity LED Connector

The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

Clear CMOS Data (JP1)

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

To clear the contents of the CMOS, please follow the steps below.

1. Disconnect the system power supply from the power source.

2. Set the jumper cap at location 2~3 for 5 seconds, 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 press enter.

5. Set the system configuration in the Standard CMOS Setup menu.

External Clock Frequency (JP2A/JP2B)

CPU	DIMM	JP2A	JP2B
100	100	2~3	2~3
100	133	1~2	1~2
133	133	2~3	1~2

This jumper allows user to configure the system bus frequency and system memory speed. The default setting is

Power On By Keyboard (JP5)

Pin	Definition
1~2	Disable (default)
2~3	Enable

This board is able to be turned on by the PS/2 keyboard (hot key). To use this function, select a hot key of your choice at the PS2KB Wakeup option under Wake Up Events in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

Power On By USB (JP6)

Pin	Definition
1~2	Disable (default)
2~3	Enable

This board is able to be turned on by a USB keyboard hot key or a USB mouse click. To use this function, select a hot key of your choice at the USB Resume From S3/S4/S5 option under Wake Up Events in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

CD-ROM Audio-in (CN2)
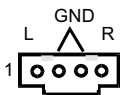
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.

Auxiliary Audio-in (CN3)

GND
L R
1

This connector is for use with a secondary CD-ROM, DVD-ROM or CDR/CDRW disk drive.

Audio Mono-in/out (CN4)

MONO IN   MONO OUT
GND
1
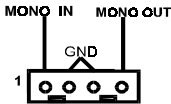
This connector is used for Add on Card e.g. modem with Mono In/Out connector

Front Panel Audio Connector (CN4A)
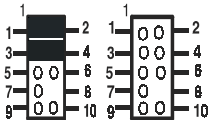
Rear Panel   **Front Panel**

This connector give you the option to choose between standard audio jack(rear panel) or use a an optional front panel audio jack cable ext. to be plug into a special custom designed system case. To use the standard audio jack short jumper caps to pin1-2 and pin 3-4 (Default). To use the front panel audio jack cable ext., simply removed both jumper caps and plug into the audio jack cable.

WOL (Wake-on-LAN) Connector (CN5)

1
5VSB
GND
Wakeup
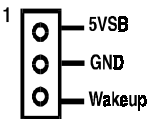
Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL capability to the LAN controller. This header is used to connect an add-in NIC (Network Interface Card) which gives WOL capability to the mainboard.

USB 0/1 Ports and USB 2/3 Connector (USB1/CN6)

VCC   VCC
USBDT2-   USBDT3-
USBDT2+   USBDT3+
GND   GND
X   X
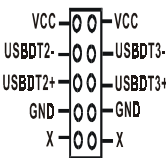
If you want to use a USB keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). This board contains a USB Host controller and includes a root hub with two USB ports (meets USB Rev 1.0 spec.) and a connector for optional USB Adaptor (USB2/3). Four USB peripherals or hub devices are able to be connected.

Smart Card Reader Connector (CN7)

1
VCC5   X
X   X
SCRPRES#   SCRRST
SCRCLK   X
X   SCRIO
GND   SCRPRES#
X   X
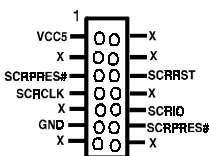
This connector must be connected to a Smart card reader .

Smart Card Reader (Optional)

Blue LED Connector(CN17)

1

```
o — VCC
o — GND
o — GND
```
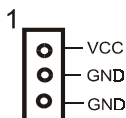
This feature work entirely the same as the power indicator LED, both shows the system's power status. The only difference is that this one is blue while the other is red LED.

IR/CIR Connector (IR2)

Left: belongs to IR   Right: belongs to CIR

```
VCC5 — o o — VCC5 Stand By
 Key — o o — X
Ir-RX — o o — CIR-RX
 GND — o o — GND
 IRTX — o o — CIR-TX
 VCC — o — X
```
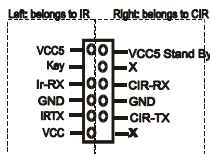
Select a UART Mode in BIOS's Integrated Peripherals menu the UART port to support IR/CIR functions. (See section 3-4)

CPU/System Cooling Fan Connectors (FAN1/FAN2)

```
o — GND
o — +12V
o — Rotation
```
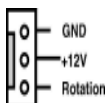
The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). These connectors supports 3-pin cooling fans with minimum of 4500 RPM. The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal.

PS/2 Mouse and Keyboard Ports (PT1)

Pin	Definition
1	Data
2	No Connection
3	Ground
4	+ 5V (fused)
5	Clock
6	No Connection

If a PS/2 mouse is used, BIOS will automatically detect and assign IRQ12 to the PS/2 mouse.

2-4 Main Memory Configuration

The DRAM memory system consists of two banks and the memory size ranges from **32MBytes~1GBytes**. It does not matter which bank you want to install first.

DRAM Specifications

DIMM type: 3.3V, unbuffered, registered, 64/72-bit SDRAM with SPD*

Module size: Single/double-sided 32/64/128/256/512MBytes/1GBytes

Parity: Either parity or non-parity

⚠ This mainboard supports 3.3v, unbuffered, 4-clock, SDRAM DIMM only. Buffered, 5V, or 2-clock SDRAM DIMMs should not be used.

⚠ Due to loading anomalies, using DIMM with an 'n x 4' DRAM base on this mainboard is not recommended. For example, a DIMM that uses sixteen 16Mb x 4 devices should not be used.

Chapter 3

Award BIOS Setup Program

Award's 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.

When you turn on or restart the system, press the Delete key to enter the Award BIOS setup program. 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 and press enter to make 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.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software	
► Standard CMOS Features	► Frequency/Voltage Control
► 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
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type...	

Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Features

The Standard CMOS Features 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 mainboard 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.   When a field is highlighted, on-line help information is displayed on the left bottom edge of the screen.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software Standard CMOS Features		
Date (mm : dd : yy)	Tue, Jun 12 2001	Item Help
Time (hh : mm : ss)	17 : 14 : 44	
		Menu Level ▶
▶ IDE Primary Master	None	
▶ IDE Primary Slave	None	
▶ IDE Secondary Master	None	
▶ IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in.	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	

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

Figure 3-2 Standard CMOS Features Screen

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

Hard Disk Setup (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 types such as SCSI drives.

Floppy Disk Drives
Choose the memory capacity and disk size that corresponds with that of your floppy
disk drive(s).

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

Halt
When the system is powered on, BIOS performs a series of diagnosis 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 mainboard**.**

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software Advanced BIOS Features		
		Item Help
Anti-Virus Protection	Disabled	
CPU Internal Cache	Enabled	Menu Level ▶
External Cache	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Boot Other Device	Enabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
X Typematic Rate (Chars/Sec)	6	
X Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Enabled	
MPS Version Control For OS	1.1	
OS Select (For DRAM > 64MB)	Non-OS2	

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

Figure 3-3 Advanced BIOS Features Screen

A. Anti-Virus Protection

Trend *ChipAway* Virus

Trend ChipAway Virus is a code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. ChipAway Virus loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. ChipAway Virus employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

B. Cache Control

CPU Internal Cache/External 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.

C. Boot Up Features

After turning on the system, BIOS will perform a series of device initialization and diagnostic tests discussed below.

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 saves 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

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

Boot Up NumLock Status

This function defines the keyboard's number pad as number keys or arrow keys.

D. Keyboard Interface

Typematic Rate Setting

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

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.

Typematic Delay (Msec)

The typematic delay sets how long after you press a key that a character begins repeating.

E. 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.

F. 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.

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

If your Hard Drive support the S.M.A.R.T. technology (Self Monitoring Analysis Reporting Technology) feature, you may enable this item to monitor and report your Hard Drive health status. Check with your Hard Drive Vendor for further information about SMART feature.

Note! Using this feature may decrease system performance.

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 mainboard**.**

```
┌─────────────────────────────────────────────────────────────────────────┐
│          CMOS Setup Utility- Copyright (C) 1984-2001 Award Software        │
│                        Advanced Chipset Features                          │
├──────────────────────────────────────────────────┬──────────────────────┤
│ ► Advanced DRAM Control 1      Press Enter         │      Item Help        │
│ ► Advanced DRAM Control 2      Press Enter         ├──────────────────────┤
│   System BIOS Cacheable        Enabled             │  Menu Level    ►      │
│   Video RAM Cacheable          Enabled             │                      │
│   Memory Hole at 15M-16M       Disabled            │                      │
│   AGP Fast Write Control       Enabled             │                      │
│   AGP Data Transfer Rates      Support 4X          │                      │
│   AGP Aperture Size            64MB                │                      │
│   Flash BIOS Protection        Disabled            │                      │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
│                                                    │                      │
└──────────────────────────────────────────────────┴──────────────────────┘
```

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

Figure 3-4 Chipset Features Setup Screen

All of the above settings have been determined by the mainboard 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 abbreviated descriptions of the functions in this setup menu. You can look on the world wide web for helpful chipset and RAM configuration information including AWARD's web site at http://www.award.com.

A. System BIOS Cacheable

Enabling this function allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Caching the system BIOS results in better performance than shadowing the system BIOS.

B. Video RAM Cacheable

Enabling this function will allows caching of the video RAM, resulting in better system performance. However, if any programs write to this memory area, a system error may occur.

C. Memory Hole at 15M-16M

Enabling this function will reserve the memory address space between 15MB and 16MB for ISA expansion cards. However, enabling this function will result in not allowing the system to have access to memory above 16MB. Please note that some expansion cards require this setting to be enabled. The default setting is Disabled. If Auto Configuration is enabled, you must set the DRAM timing function to 60ns or 70ns, depending on the type of DRAM you install.

D. AGP Data Transfer Rate

Enable this setting to utilize the 4X rate (twice as fast as2X) offered by advanced AGP cards. Your VGA card must support 4X rate in order to take advantage of the faster speed.

E. AGP Aperture Size

This function determines the amount of system memory that is given to the AGP card. Options range from 4MB to 128MB. This is a dynamic memory allotment in that the AGP card will only use the amount of memory that it needs. The remaining memory not in use will be available for the system to use. For example, if 16MB is alloted to the AGP card and the card only needs 8MB, the remaining 8MB will be available for system use.

F. Flash BIOS Protection

The mainboard 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.

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 mainboard.

```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                     Integrated Peripherals

►  SIS OnChip IDE Device       Press Enter    ▲         Item Help
►  SIS OnChip PCI Device       Press Enter
►  Omboard Super IO Device     Press Enter         Menu Level    ►
   USB Controller              Enabled
   USB Keyboard Support        Disabled
   IDE HDD Block Mode          Enabled
   Init Display First          PCI Slot
   AGP Auto Calibration        Enabled




                                              ▼
```

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

Figure 3-5 Integrated Peripherals Screen

A. *SIS OnChip IDE Device*

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.

B. *SIS OnChip PCI Device*

The mainboard supports SIS-7012/7018 AC'97 CODEC and SIS-7013 S/W Modem device features. Select Enabled to use these functions, select Disabled to terminate these functions.

C. Super IO Device

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.

Com 2 Mode
This function allows you to select an operating mode for the second serial port. (**Standard** RS-232C serial port/**HPSIR** 1.0 specification/**ASKIR** 0.57-MB/sec infrared port)

Onboard Parallel Port
Select a logical LPT port address and corresponding interrupt for the physical parallel port.

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.

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

E. 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.

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

G. Init Display First
This function allows user to choose between AGP slot or VGA slot to initialize Display first .

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 mainboard
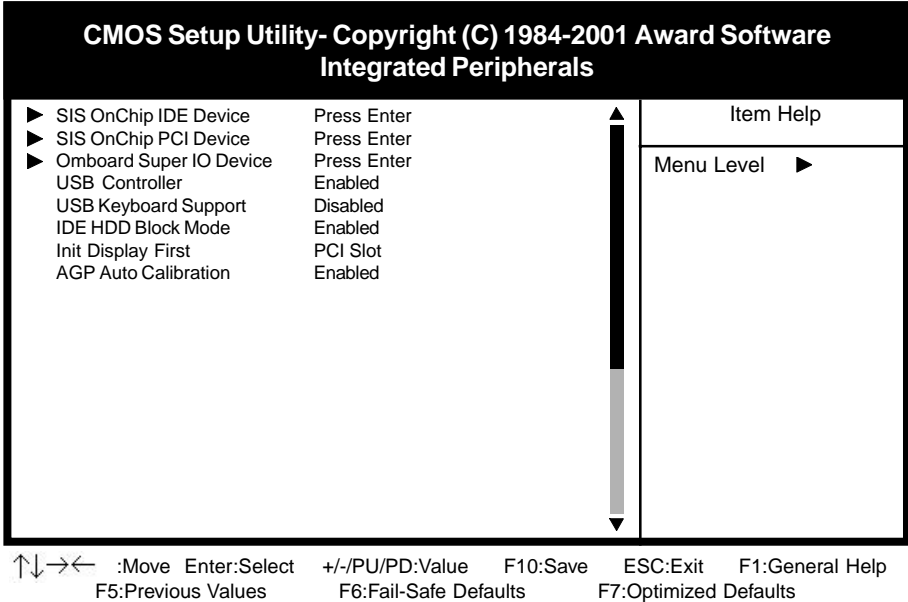
```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                    Power Management Setup
                                                      Item Help
    ACPI  function          Enabled
     ACPI Suspend Type      S1(POS)                Menu Level    ▶
     Video Off Option       Susp,Stby -> Off
     Video Off Method       DPMS  Supported
     MODEM Use IRQ          3
     HDD Off After          Disabled
     Power Button Override  Instant  Off
  ▶ Wake Up Events          Press  Enter
```

↑↓→← :Move Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
      F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults
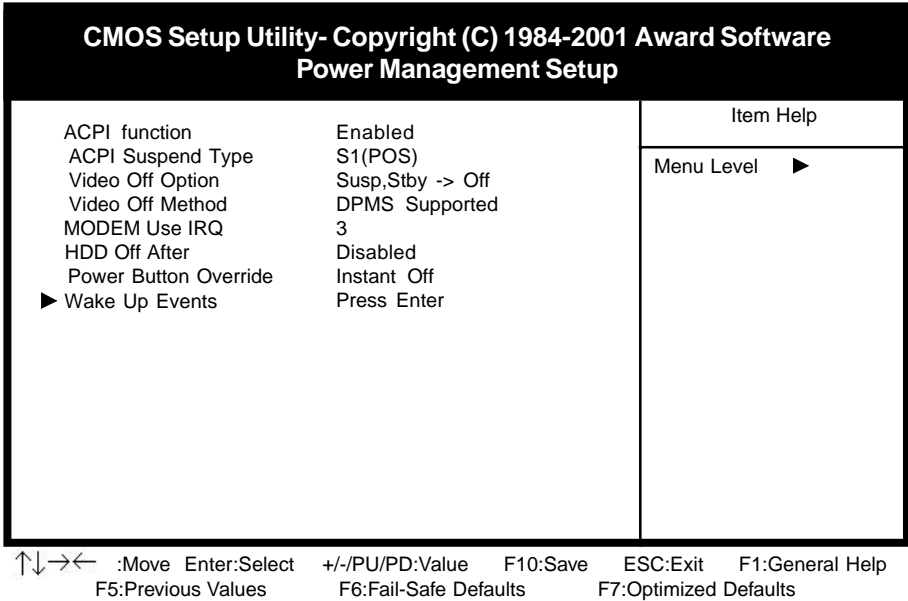
Figure 3-6 Power Management Setup Screen

A. Advanced Configuration Power Interface (ACPI)

ACPI management enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripherals devices, such as CD-ROM players, when they are not in use.

B. Video Off Option

This setting allow you to selects the power-saving modes during which the monitor goes blank:

C. 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.

Blank - 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.

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 an electricity saver.

DPMS Supported - 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.

D. 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 compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

E. HDD Off After

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

F. Power Button Override

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-4 for operation instructions of the override power button operation which puts the system in Suspend mode. When set to Instant-Off the Soft-Off by PWR-BTTN function is disabled and the computer turns completely off when the power button is pressed.

G. Wake Up Events

IRQ 8 Break Suspend

You can Enable or Disable monitoring of IRQ8 (the Real Time Clock) to awaken or not awaken the system from Suspend mode.

Power On By Modem

When enabled, a modem that receives a signal will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

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.

USB Port Wake Up Control

When enabled, all USB devices will resume event from suspend mode.

Power On Keyboard

When enabled, the system is able to be turned on by a PS2 keyboard hot key.

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. See the Software Power-Off feature in Section 2-3 of this manual for instructions.

3-6 PNP/PCI Configuration

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 sample screen contains the manufacturer's default values for the mainboard.

```
╔══════════════════════════════════════════════════════════════════════╗
║     CMOS Setup Utility- Copyright (C) 1984-2001 Award Software        ║
║                      PnP/PCI Configurations                           ║
╠════════════════════════════════════════════════╦═════════════════════╣
║   Reset Configuration Data    Disabled         ║      Item Help       ║
║                                                ║                      ║
║   Resources Controlled By     Auto(ESCD)       ║  Menu Level    ►     ║
║ X IRQ Resources               Press Enter      ║                      ║
║                                                ║                      ║
║    PCI/VGA Palette Snoop       Disabled        ║                      ║
║   Assign IRQ For VGA           Enabled         ║                      ║
║   Slot  1 Use IRQ No.          Auto            ║                      ║
║   Slot  2 Use IRQ No.          Auto            ║                      ║
║   Slot  3 Use IRQ No.          Auto            ║                      ║
║   FDD IRQ Can Be Free          Yes             ║                      ║
║                                                ║                      ║
╚════════════════════════════════════════════════╩═════════════════════╝
↑↓→←  :Move  Enter:Select    +/-/PU/PD:Value    F10:Save    ESC:Exit    F1:General Help
        F5:Previous Values        F6:Fail-Safe Defaults    F7:Optimized Defaults
```

Figure 3-7 PnP/PCI Configurations Screen

A. 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.

B. FDD IRQ Can Be Free

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

3-7 PC Health Status

By choosing the PC Health Status option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This field shows you the current system temperature/external voltages input and the current CPU FAN and System FAN operating speed.

```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                        PC Health Status

 Shutdown Temperature        Disabled          Item Help
 CPU VCore                   1.75V
 +2.5V                       2.48V          Menu Level    ▶
 +3.3V                       3.32V
 +5.0V                       5.05V
 +12 V                       12.16V
 3VSB                        3.32V
 -12V                        (-)12.36V
 5VSB                        5.02V
 Voltage Battery             3.32V
 System Temperature          28 ℃
 CPU Temperature             39 ℃
 CPU Fan  Speed              4800 RPM
 System Fan  Speed           4800 RPM
```

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

Figure 3-8 PC Health Status Screen

3-8 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 mainboard**.**

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

                                               Item Help
 Auto Detect Dimm/PCI Clk        Enabled
                                            Menu Level    ▶
```

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

Figure 3-9 Frequency/Voltage Control Screen

A. Auto Detect DIMM/PCI Clk

When Enabled this function will automatically detect your DIMM/PCI clock speed.

3-9 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.
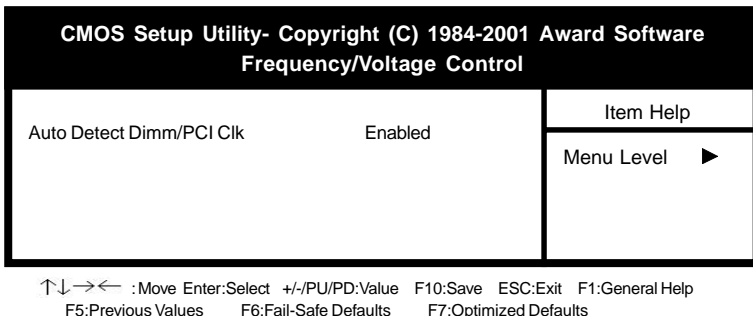
```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software

  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control
  ▶ 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 Configur                               Setup
                      Load Fail-Safe Defaults (Y/N) ? N
  ▶ PC Health Status                               Saving

  Esc    : Quit
  F10  : Save & Exit Setup       ↑↓→←        : Select Item
                  Load Fail-Safe Defaults
```

Figure 3-10 Load Fail-Safe Defaults Screen

3-10 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.
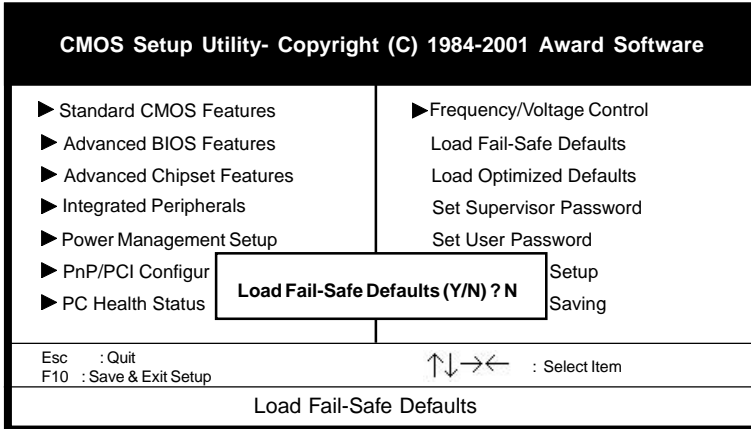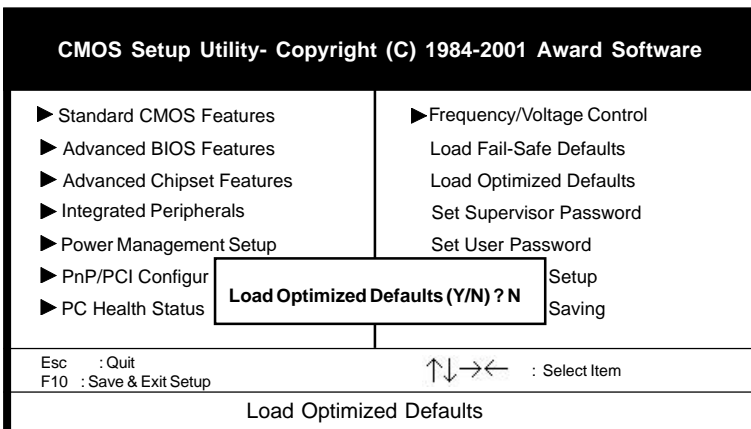
```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software

  ▶ Standard CMOS Features          ▶ Frequency/Voltage Control
  ▶ 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 Configur                               Setup
                     Load Optimized Defaults (Y/N) ? N
  ▶ PC Health Status                               Saving

  Esc    : Quit
  F10  : Save & Exit Setup       ↑↓→←        : Select Item
                  Load Optimized Defaults
```

Figure 3-11 Load Optimized Defaults Screen

3-11 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. Note that when there is no supervisor password set, the user password controls access to all BIOS settings.

3-12 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.
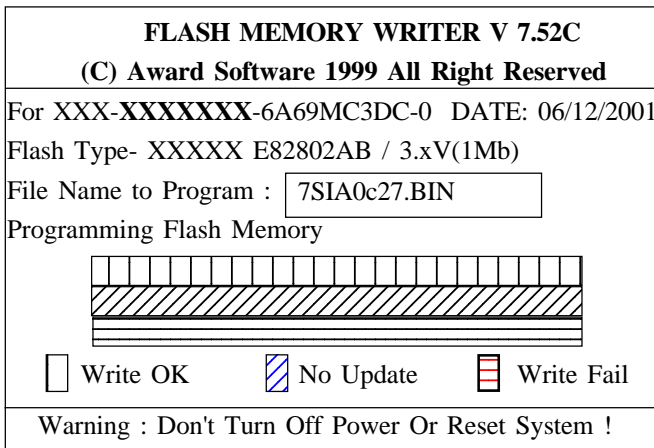
3-13 Exit Without Saving

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.

Embedded Flash Utility

This mainboard is equipped with an Erasable Flash ROM and an Embedded Flash Utility which allows the user to update the BIOS to a newer version. Embedded Flash Utility eases BIOS upgrade and eliminate the compatibility issue between different Flash ROM type and version of Flash utility.

Update Your System BIOS

1. Start computer, upon post, press ALT+F2 Keys to enter AWDFLASH setup.

2. Insert the floppy disk with the latest BIOS file into the floppy drive A(or B)

   and then press Enter to start programming.

FLASH MEMORY WRITER V 7.52C
(C) Award Software 1999 All Right Reserved

For XXX-**XXXXXXX**-6A69MC3DC-0 DATE: 06/12/2001

Flash Type- XXXXX E82802AB / 3.xV(1Mb)

File Name to Program : 7SIA0c27.BIN

Programming Flash Memory

☐ Write OK   ▨ No Update   ▤ Write Fail

Warning : Don't Turn Off Power Or Reset System !

Sample of Programing Flash Memory Screen

3. When finished, the system will automatically Restart.

Note:

@ Flash BIOS Protection must be set to Disabled in the Advance Chipset Feature from the CMOS Setup Utility menu. See Chapter 3.

@ Don't turn off or restart your system during programming process.

@ Make sure that your floppy diskette have only one BIN file to aviod confussion.

Memo