SDVIB
User's Guide

RIOWORKS™

The Reliable Building Block

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Overview

Thank you for choosing the RIOWORKS™ SDVIB high performance motherboard. The SDVIB is a Dual Socket-370 motherboard (M/B) based on the ATX form factor featuring the VIA® Apollo Pro 133A Chipsets. As the latest VIA chipset is built in the M/B, SDVIB fully supports Intel® 500MHz-1GMHz+ PIII/Coppermine FC-PGA processor at 100/133 MHz FSB (Front Side Bus) frequency or single 667~766MHz + Celeron FC-PGA CPU. In the memory support,SDVIB provides four memory sockets for the PC100/133 SDRAM and the total maximum memory size can be up to 2GB. The more advantage is SDVIB provides dual ATA-100 IDE RAID channel to increase I/O transformation to maximum 200MB/sec (100MB/sec per IDE channel)
Flexibility and expandability are always concerned by RIOWORKS™, SDVIB contains three 32bit/33MHz PCI slots for numerous add-on cards. Other features such as onboard dual 10/100 Mbps LAN port **(Optional)** will provide high system capabilities that meet a wide range of demanding Sever applications.

Unpacking

Remove all items from the box and make sure you have these following items:

- ❒ One RIOWORKS SDVIB motherboard

One ATA /66 IDE ribbon cable

- ❒ One Floppy ribbon cable
- ❒ One bag of spare jumpers
- ❒ One SDVIB User's Guide
- ❒ One CD containing drivers and utilities
- ❒ LAN User's Guide (**Optional)**

If you discover damaged or missing items, please contact your local retailer.

Features Highlight

CPU

- Support dual Intel® 500MHz~1GHz+ PIII/Coppermine FC-PGA CPUs at 100/133 MHz Front Side Bus (FSB) frequency
- Support single Intel® 667MHz~766MHz+ Celeron FC-PGA CPU at 66MHz Front Side Bus (FSB) frequency
- Designed for Socket-370 technology.

Chipset

- Use the latest high performance VIA® chipset in the SDVIB M/B. As known, the VIA® chipset architecture is consisted of two main components: The North Bridge (VT82C694X) and South Bridge (VT82686B). Because of the powerful chipset features, SDVIB supports 100/133 MHz FSB, PC100/133 DIMM and Ultra DMA 100/66/33 EIDE and so on.

System Memory Support

- Provides four 168-pin DIMM memory sockets
- PC133/100 compliant DIMM and VCM memory supported
- Supported total system memory size can be up to 2GB (1.5GB at 133MHz FSB).

Expansion Slots

- Contain three 32-bit PCI slots.

LAN Onboard (Optional)

- Use dual Intel® 82559 Fast Ethernet Multifunction controllers as onboard network interface controller. Intel® 82559 fast Ethernet Controller can provide IEEE 802.3/802.3u 10 Base-T and 100 Base-TX compatible network environment. A user can achieve advanced manageability of the Alert on LAN II Specification by using this Intel® 82559 chip.

Super Multi-I/O

- Provides two high-speed UART compatible serial ports and one parallel port with EPP and ECP capabilities. UART2 two high-speed UART compatible serial can also be directed from COM2 to the Infrared Module for wireless connections.

Ultra DMA 100/66/33 Bus Master IDE

- Onboard PCI Bus Master IDE controller provides two IDE connector. And each connector supports two IDE devices.
- Supports Ultra DMA mode 5 (ATA-100), Ultra DMA mode (ATA-66), Ultra DMA 33, PIO Mode 3 and 4
- Support Bus Master Enhanced IDE devices.

Intelligent Platform Manage Interface (IPMI)

- SDVIB provides one IPMI feature connector for the system management add-on card that is able to provide some system important information such as system inventory, hardware health monitoring, and so on in the in-band/out-of-band and cross–platform environment.

Floppy Drive

- Supports 3.5” (1.44MB or 2.88MB) floppy drive and Japanese standard “Floppy 3 mode” (3.5” disk drive: 1.44MB, 1.2MB, 720KB) and LS-120 floppy disk drives (3.5” disk drive: 120 MB).
- BIOS supports IDE CD-ROM boot-up.

Enhanced ACPI

- Fully implements the ACPI standard for Windows 98/NT5.0/2000 compatibility
- Supports soft off, Wake-On-Ring and Wake-On-LAN feature.

Wake-On-Modem	▪ Support Wake-On-Modem activity with external modem when enable function " Modem Ring Resume: in the Power Management of the BIOS Setup Utility.
Wake-On-LAN	▪ Support Wake-On-LAN activity with onboard NIC /internal network card that contain WOL connector when enable the function" Wake Up on LAN" in the power management of BIOS Setup Utility.
Desktop Management Interface (DMI)	▪ Supports DMI through BIOS, which allows hardware to communicate within a standard protocol creating a higher level of compatibility.
PC99 Compliant	▪ The SDVIB is fully compliant with the Microsoft PC99 specification at both the hardware and BIOS levels.
Hardware Monitoring	Support Fan/Temperature/Voltage Status Monitoring and Alarm through the onboard hardware monitor and RIOWORKS SmartWatch™ Software.
VRM Support	▪ Support VRM 8.4 specification.
Dimension	▪ Extended ATX form factor-305mmx244mm

About This User Guide

This manual explains how to build your system with SDVIB in detail. Please follow the procedures of this User's Guide carefully and pay special attention to these icons.

IMPORTANT

This icon informs you for particularly important details regarding the setup or maintenance of your system. While we point out the most vital paragraphs in a chapter, you should always read every word carefully. Failing to do so can cause exasperation.

WARNING

This icon alerted you for potential dangers during setting up your system with SDVIB. These warnings should not be regarded as the whole of your safety regimen. Never forget that computer are electronic devices and are capable of delivering a shock. Prevent damage to yourself and to your board: always ensure that your system is turned off and unplugged the power cords whenever you are working with it ,and that you are equipped

NOTE

This icon alerted you for notice during setting up your system. It provides you can useful alert during setting up a new system.

TIP

This icon will show you how to configure your system with SDVIB in an easy and simple ways. This icon always provides some useful description to help you configure your system.

Getting Help

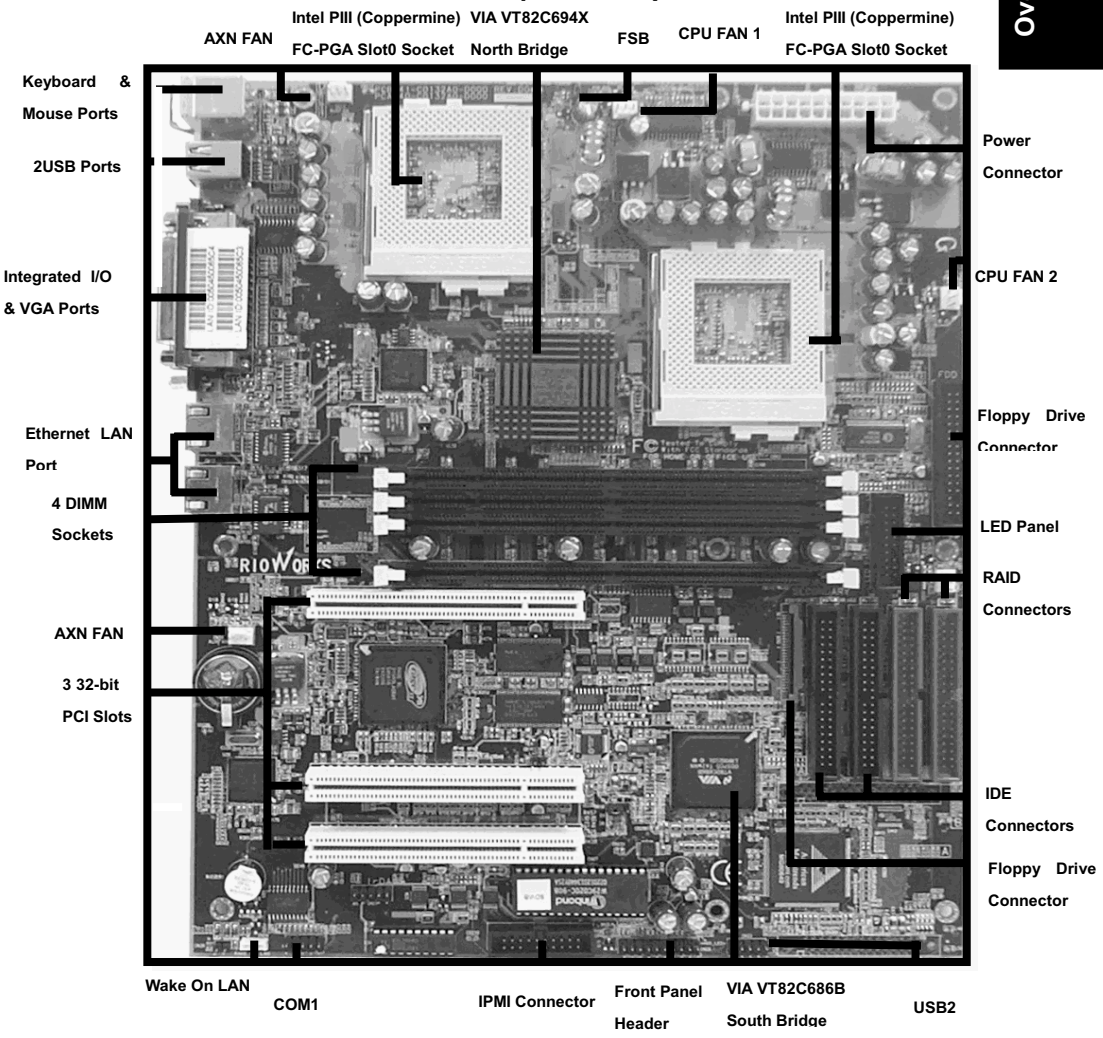
If a problem arises with yours system during installation or OS operating, you should ask your dealer for help first as your system has most likely be configured by them. They always have the best idea and quick response for your symptoms. If your dealer is near to your locations, you should bring your system to them to have it quickly serviced instead of attempting to solve the problem by yourself. Besides these, RIOWORKS also provides some helpful resources to help you.

1. Select RIOWORKS ™'s website at www.rioworks.com and navigate to this product page which contain links to product updates such as Jumper settings or BIOS updates.

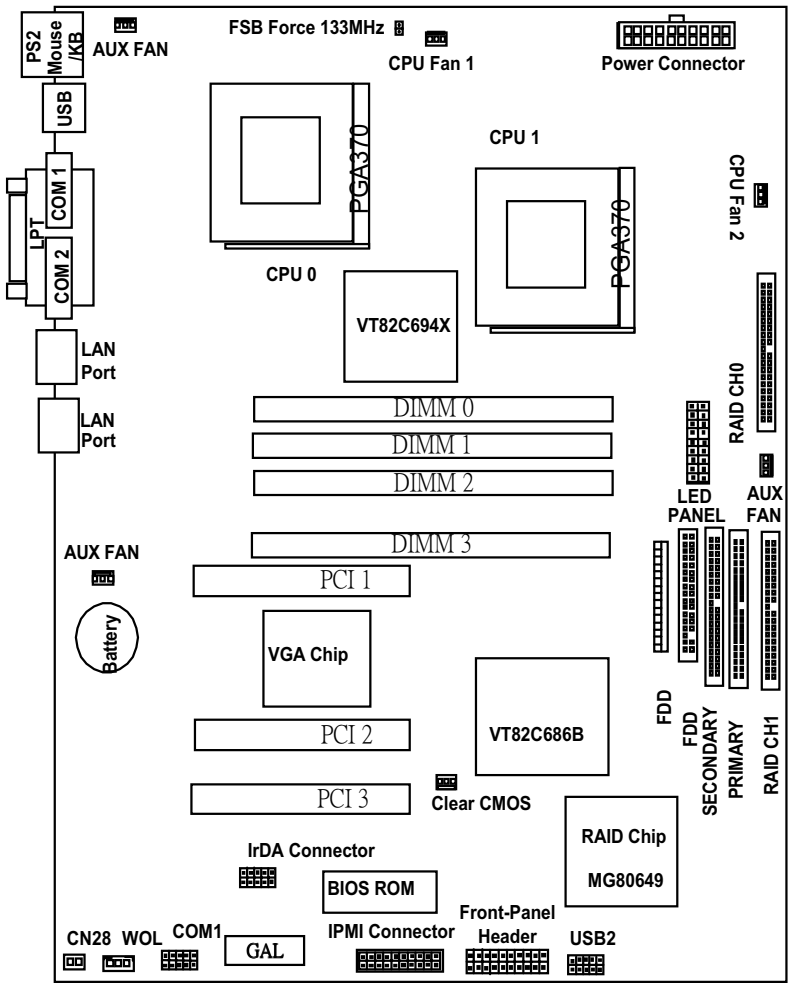
2. FAQ sections on RIOWORKS Website are often helpful since other user's questions are often your own.

3. Email us at: sales@rioworks.com and we will try to answer your questions within 24 hours. Before you email your symptom to sales@rioworks.com, please fill in the symptom report form (page A-5) in order to let our engineers solve your problem quickly.

SDVIB Motherboard (Picture)



SDVIB Motherboard (Layout)



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Chapter 1

Hardware Installation

In this chapter, the installation of the SDVIB with the processor and other hardware connected to your system will be explained in detail.

Installation Procedures

Installation procedures will be broken up into six major parts.

Step 1:Jumper setting
Step 2: Install memory (SDRAM memory modules)
Step 3: Install CPU
Step 4: Attach cables to connectors
Step 5: Install expansion cards
Step 6: Power connection

Warning

This motherboard contains sensitive electronic components that can be easily damaged by static electricity. Follow the instructions carefully to ensure correct installation and to avoid static damage.

Step 1.

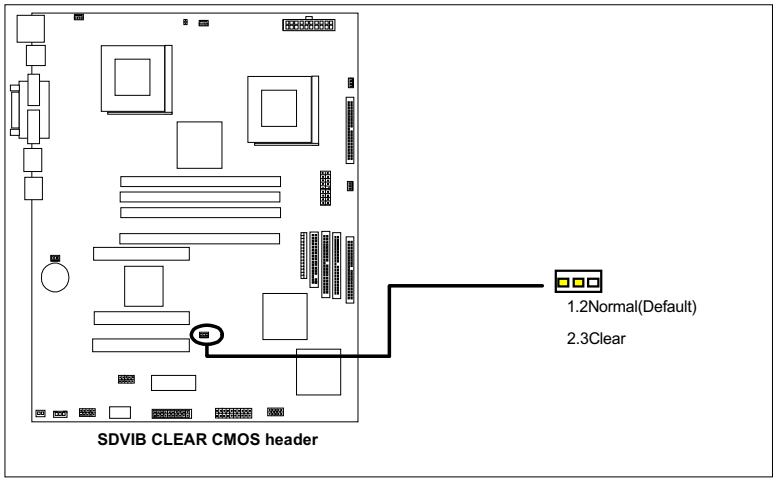
Jumper Setting

There are two jumpers you can use to change the setting on the motherboard.

Item	Connectors	Page
1	Clear Real Time Clock (RTC) RAM	1-2
2	FSB Force 133Mhz	1-3

1. Clear Real Time Clock (RTC) RAM

The onboard button cell battery powers the CMOS RAM. It contains all the BIOS setup information. Normally, it is necessary to keep the jumper connected to pin1 and pin2 (Default) to retain the RTC data as shown below.



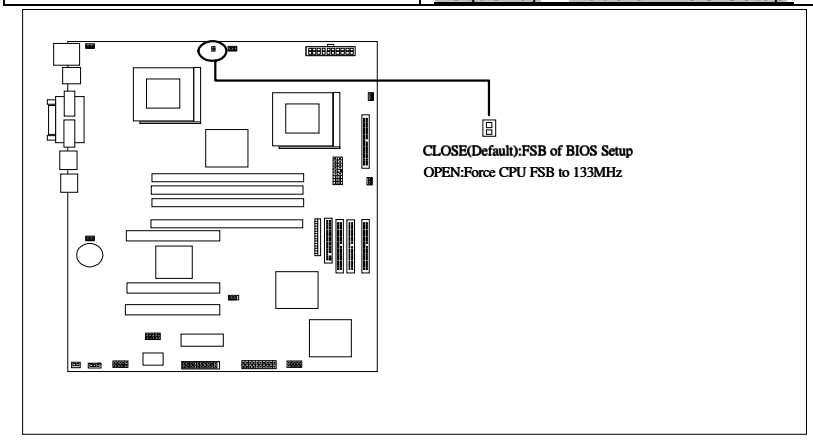
Note

Should you want to clear the RTC data:
(1) Soft off your computer
(2) Short pin2 and pin3 with jumper for few seconds
(3) Connect pin1 and pin2 with jumper again.
(4) Turn on your computer by pressing the power-on button from front-panel.
(5) Hold down <Delete> during bootup and select <Load Optimal Defaults> or <Load Failsafe Defaults> option in the selection <Exit>. Then re-enter BIOS setup to re-enter user preferences.

2. Force FSB 133 MHz (3-pin jumper)

This jumper allows a user to force the CPU Front Side Bus Frequency to 133MHz. This jumper is only for Overclocking purpose. Intel® and RIOWORKS do not recommend a user to do CPU Overclocking as it may damage your peripherals.

CN6	Description
Close ***(Default)***	The internal CPU speed =CPU FSB frequency of BIOS Setup * Ratio of BIOS Setup
Close	The internal CPU speed =**133**MHz FSB frequency * Ratio of BIOS Setup.



Step 2

Install Memory

SDVIB uses Dual Inline Memory Modules (DIMM). Four DIMM sockets are available for 3.3Volts (power level), PC100/PC133, Unbuffered/Registered Synchronous Dynamic Random Access Memory (SDRAM) with 32MB, 64MB,128MB, 256MB, 512MB and 1GB combinations. And the total memory size is between 32MB and 2GB at 100Mz memory bus speed.

IMPORTANT

- **Use only Intel® PC133/PC100-compliant Unbuffered/Registered ECC/Non-ECC DIMM and VCM and this motherboard operates at 133/100MHz FSB. If non-compliant modules are used, the system will not be able to boot up because of the strict timing issues involved under this speed**
- **To utilize the chipset's Error Checking and Correction (ECC) features, you have to choose the DIMM module with 9 chips (devices) per side (standard 8 chips (devices)/side plus 1 ECC chip) and check if the setting is proper in the selection "<Memory Parity/ECC Check" in the selection "Advanced Chipset Setup" in the BIOS Utility.**
- **Unbuffered DIMM and VCM DIMM should not be mixed and use together.**
- **Memory installation in following combination as follows:**

When memory bus = 100FSB

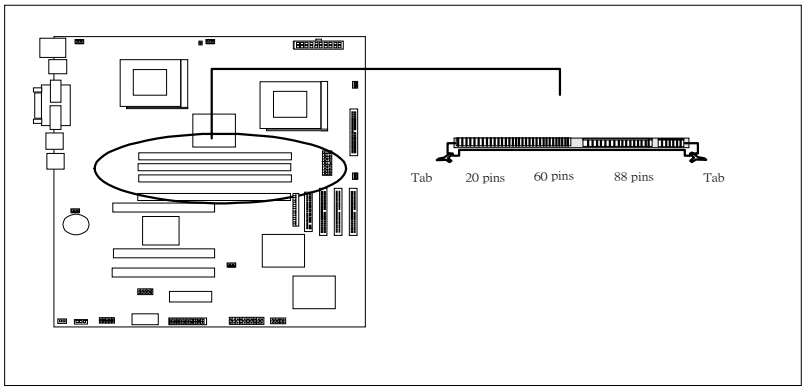
DIMM #	Available DIMM size
DIMM 0	32,64,128,256,512,1GB
DIMM 1	32,64,128,256,512,1GB
DIMM 2	32,64,128,256,512,1GB
DIMM 3	32,64,128,256,512,1GB
Total available memory size	32MB (one 32MB of the four DIMM sockets) to **2GB** (4 x 512MB in four DIMM sockets or 2x 1GB in the two of the four sockets)

When memory bus = 133FSB

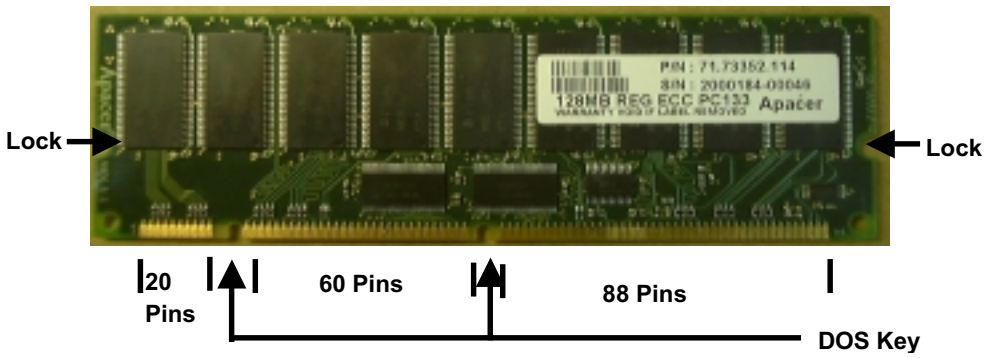
DIMM #	Available DIMM size
DIMM 0	32,64,128,256,512,1GB
DIMM 1	32,64,128,256,512,1GB
DIMM 2	32,64,128,256,512,1GB
DIMM 3	32,64,128,256,512,1GB
Total available memory size	32MB (one 32MB of the four DIMM sockets) to **1.5GB** (3 x 512MB in three DIMM sockets or 1GB and 512MB in the two of the four sockets)

Memory Installation Procedures

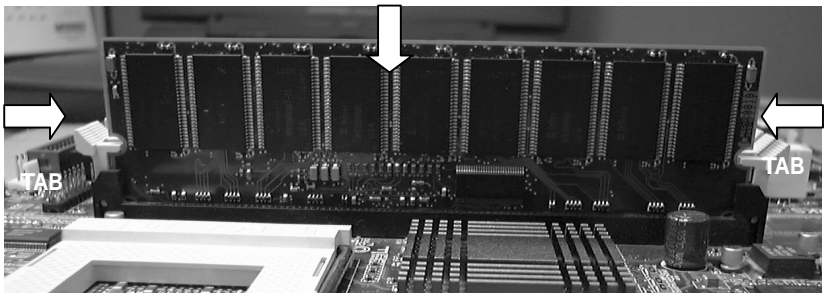
1. Locate the DIMM modules on the SDVIB.



2. Make sure the DIMM module's pins face down and match the socket's size as depicted below.



3. Insert the module down to the DIMM socket in with both hands and press down firmly until the DIMM module is securely in place. (The tabs of the socket will close-up to hold the DIMM in place when the DIMM touches the socket's bottom.)



4.Repeat step1 to step 3 to add additional DIMM modules.

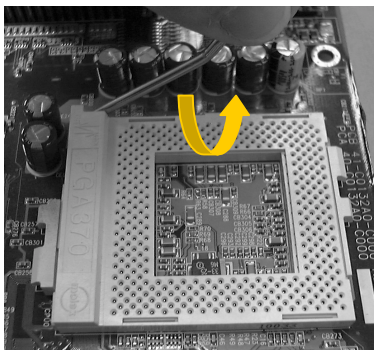
Step 3

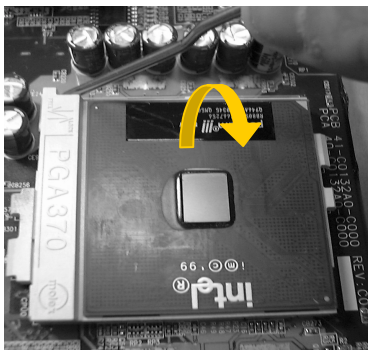
Install CPU

SDVIB provides two CPU sockets for dual Intel® 500~1GHz+ PIII(Coppermine) FC-PGA processors at 100/133MHz FSB or single Intel® 667~766MHz+ Celeron FC-PGA processors at 66MHz FSB

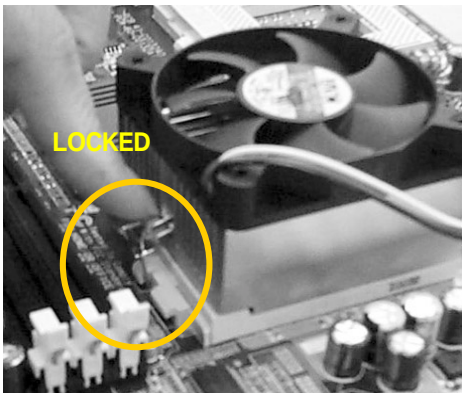
CPU Installation Procedures

1. Lift up the socket lever and carefully place the FC-PGA CPU with the correct orientation as the figures are shown below

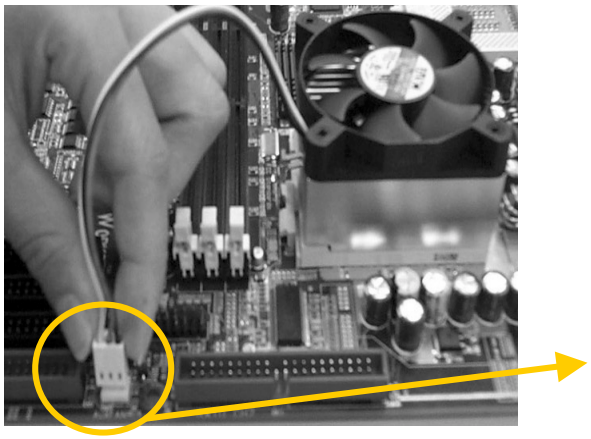




2. Mount the CPU heatsink with proper exproxy and secure it with the lock as the figures are shown below.



3. Plug the 3-wire fan power core into the connector named CPI1 FAN



4. Repeat to install the other CPU

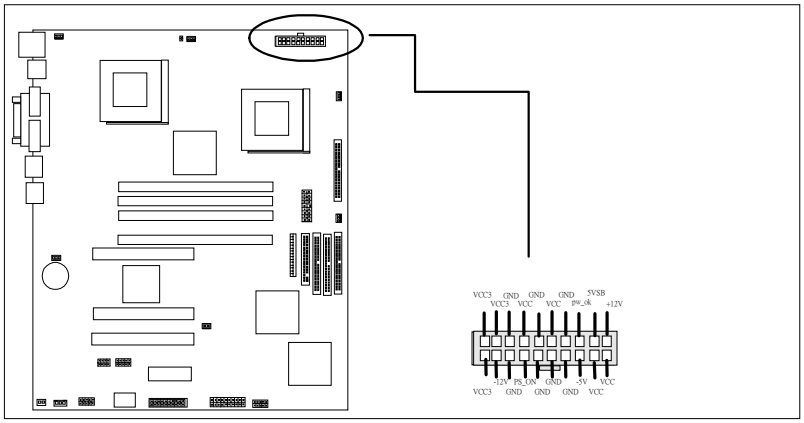
Step 4

Attach Cable to Connectors

This step explains where each connector is inserted on the SDVIB. There will be an SDVIB layout picture following each explanation indicating where the connector is inserted. The motherboard connectors are:

Item	Connectors	Page
1	ATX Power Supply	1-11
2	Floppy Disk Drive	1-11
3	Primary IDE	1-12
4	Reset Switch	1-13
5	SCSI Hard Disk Card Activity LED	1-13
6	Hard Disk Activity LED	1-14
7	Suspend Power Activity LED	1-14
8	Speaker	1-14
9	ATX power switch/Soft Power Switch	1-14
10	System Power LED	1-14
11	CPU, and Aux Fan connectors	1-14
12	IrDA Compliant infrared module	1-15
13	Wake-On-LAN header	1-16
14	LAN LED	1-17
15	PS/2 Mouse	1-18
16	PS/2 Keyboard	1-18
17	USB (Universal Serial Bus)	1-18
18	Parallel Printer)	1-18
19	Onboard LAN Connector	1-19
20	Serial Port COM1 and COM2	1-19
21	SMBus Connectors	1-19
22	IPMI Connectors	1-20
23	Onboard SCSI	1-21

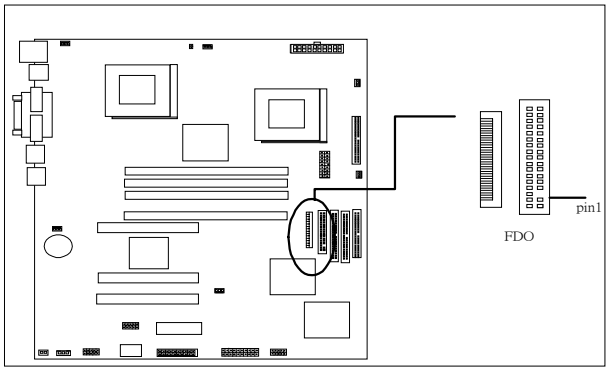
1. **ATX Power Supply (20-pin ATX power connectors)**
   The connector connectss to ATX power supply. Find the proper orientation and push down firmly to make sure that the pins are aligned. For Wake on LAN support, 5-volt Stand-by lead (+5VSB) from ATX power supply must supply at least 720mA.



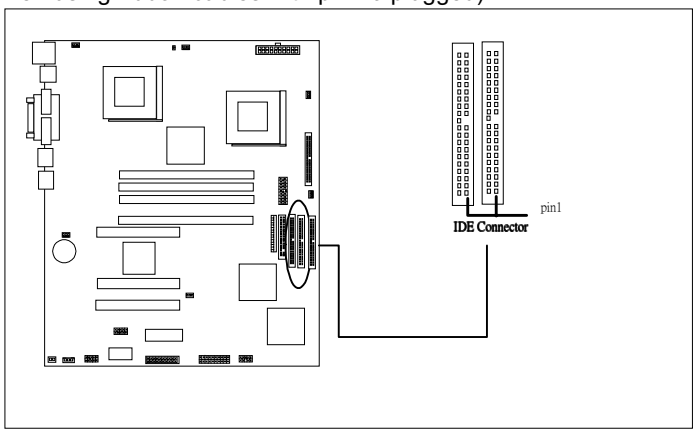
IMPORTANT

- **RIOWORKS always recommands our customers to use ATX Power that has more than 300W power capacity and is capatible with Intel ATX 2.03 specification.**

2. **Floppy Disk Drive Connector (34-pin FLOPPY cable)**
   This connector supports the provided floppy disk drive ribbon cable. After connecting the single end to the board, connect the plug on the other end to the floppy drive.



3. **Primary/Secondary Ultra DMA 100 IDE connectors (Two 40-pin IDE)**
   The connectors support the provided 80-wire 40-pin IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk(s). If you install two hard disks in the same cable, you must configure the second drive to Slave mode by setting its jumper accordingly. Please refer to the documentation of your hard disk for the jumper settings. BIOS now supports IDE HDD or IDE CD-ROM bootup (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).



IMPORTANT

- **Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. IDE ribbon cable must be less than 46cm (18inches), with the second drive connector no more than 15cm (6 inches) from the first connector.**
- **If you want to have ATA100/66 IDE performance, proper ATA100/66 is needed as 80-wire ATA100/66 cable is different from 40-wire ATA33 cable**

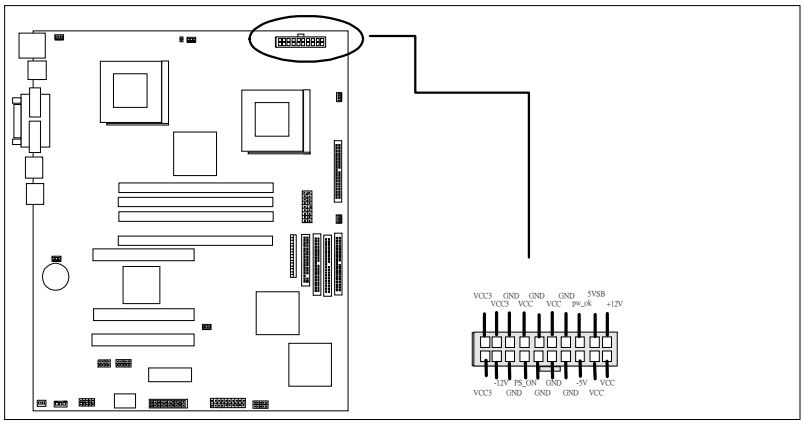


Figure 4-1

Item 4 through 10 are depicted in Figure 4-1 as above.

4. Reset Switch (2-pin RST)

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without turning off and on your power switch. This is a preferred method of rebooting to prolong the life of the system's power supply.

5. SCSI Hard disk Card Activity LED (4-pin SCSI_HD)

The 4-pin connector can be connected to the 4-pin activity LED connector of SCSI card, Read and Write activities by devices connected to the SCSI card will cause the front panel LED to light up.

6. **Hard Disk Activity LED (2-pin HDD_LED)**
   This connector supplies power to the cabinet's hard disk or IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

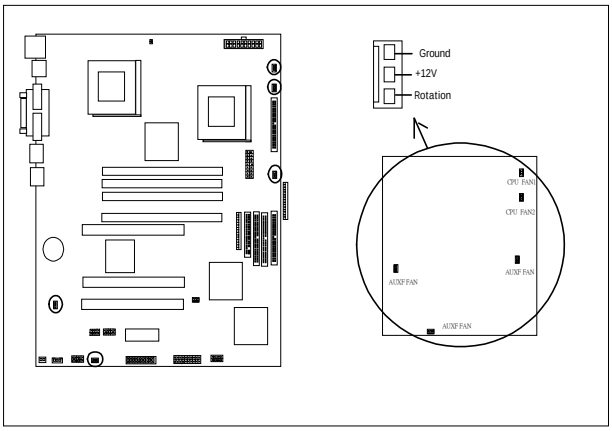
7. **Suspend Power Activity LED (2-pin SUS_LED)**
   This connector supplies 5V suspend power to a LED for monitoring the status of the suspend power when a system is soft-off.

8. **Speaker Connector (4-pin SPEAKER)**
   There is one jumper cap over pin1 and pin2 (default setting) for internal buzzer. If you want to use external case-mounted speaker instead of internal buzzer, remove jumper cap and connect speaker wire to the 4-pin connector.

9. **ATX Power Switch / Soft Power Switch (2-pin PWR_SW)**
   A momentary switch connected to these connector controls the system power. Pressing the button once will switch the system between *ON* and *SLEEP.* The system power LED shows the status of the system's power.

10. **System Power LED (3-pin PWR_LED)**
    This 3-pin connector connects the system power LED, which lights up when the system is powered on and blinks when it is in sleep mode.

11. **,CPU and Aux Fan Connectors (4 3-pin FAN connectors):**
    There are five 3-pin fan connectors in the SDVIB M/B. Two fans are used for CPU1 and CPU2 and three are for auxiliary power. These connectors support cooling fans of 500mA (6W) or less. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of this connector.



WARNING

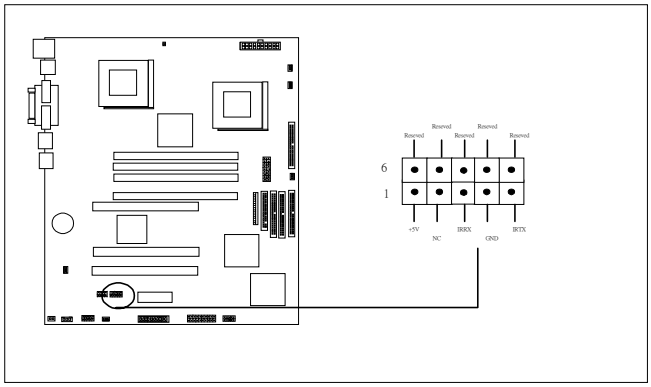
- **The CPU and/or motherboard will overheat if there is not enough airflow across the CPU and onboard heatsink. Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.**

NOTE

- The “Rotation” signal has to be used with fan specially designed with rotation signal.
- Only the fan marked CPU fan1, CPU2 fan2 can be monitored by BIOS.

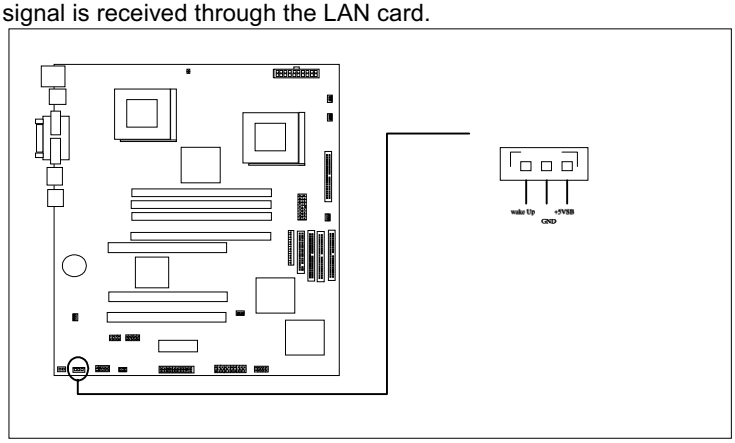
12. IrDA-Compliant infrared module connector (10-pin IR connector)

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. Use the five pins as shown and connect a ribbon cable from the module to the motherboard according to the pin definitions. For SIR device, connect 5 pin cable to the left side of connector (pin1~pin5).



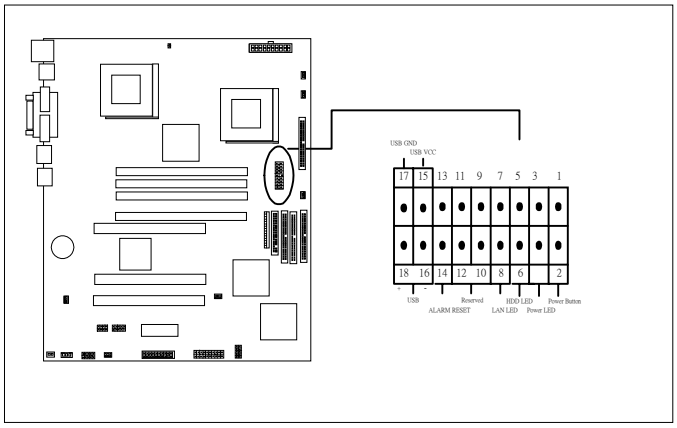
13. Wake-On-LAN (3-pin WOL)

This connector connects to internal LAN cards with a Wake-On-LAN output. The connector powers up the system when a wakeup packet or signal is received through the LAN card.



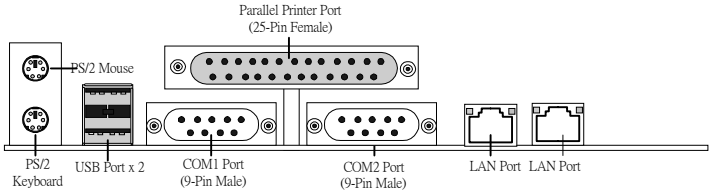
14. LAN LED (4-pin header)

This connector connects to external LED for LED status monitoring. A user can connect the LED of the front panel to this header.



IMPORTANT

- **This feature requires that your system has an ATX power supply with at least 720mA +5VSB standby power.**



SDVIB I/O Connectors

Figure 4-2

Item 15 through 20 are depicted in Figure 4-2 as above.

15. PS/2 Mouse Connector (6-pin Female)

The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12.

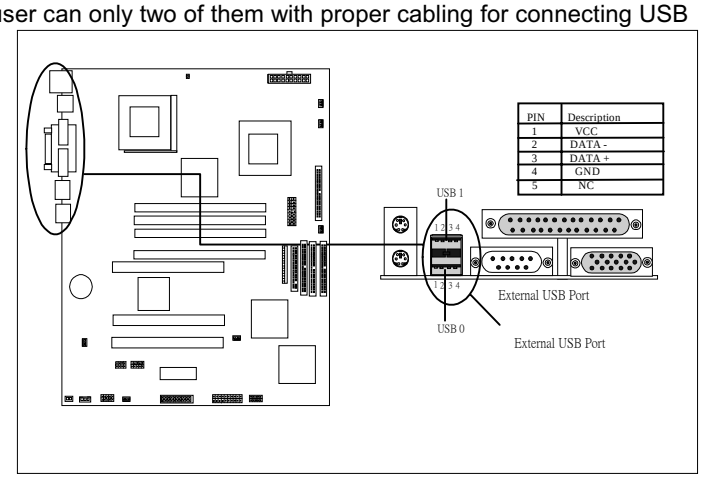
16. PS/2 Keyboard Connector (6-pin Female)

This connection is for a standard keyboard using a PS/2 plug (mini DIN). This connector will not allow standard AT size (large DIN) keyboard plugs.

You may use a DIN to mini DIN adapter on standard AT keyboards.

17. Universal Serial BUS Ports I & 2 (4-pin Female)

Two external USB ports are available for connecting USB devices. But a user can only two of them with proper cabling for connecting USB



18. Parallel Printer Connector (25-pin Female)

You can enable the parallel port and choose the IRQ through the BIOS Setup.

19. Onboard LAN Connector (Optional)

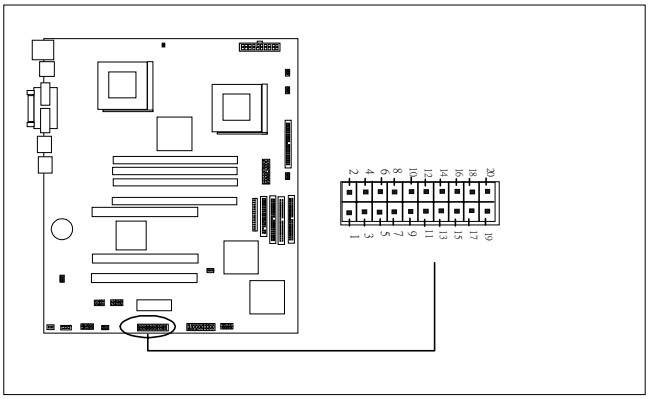
SDVIB uses dual Intel® 82559 Ethernet controllers. It consists of both the Media Access controller and 10/100 Mbps Physical Layer (PHY) interface. The RJ45 connector provides both 10Base-T and 100Base-TX connectivity. Please refer to the "Onboard SCSI/LAN User Guide" for further information.

20. Serial Port COM1/2 Connectors (9-pin Male)

The serial port COM1 and COM2 can be used for pointing devices or other serial devices. See the BIOS Setup.

21. IPMI Connector (20-pin connector)

This 20-pin connector is for a server management add-on card featuring with IPMI function.



Pin	Signal	Description
1	SMI_L	System Management Interrupt; not supported on SMM
2	IPMB_SCL	IPMB Clock line
3	CONP_L	Connector Present-tied to ground on baseboard
4	Key	No connect on baseboard
5	PWR_CNTL_L	Power supply on/off control-allows SMM to control system power
6	IPMB_SDA	IPMB serial data line
7	5VSTNDBY	+5V standby-monitored by SMM to determine if AC power applied
8	Reserved	No connect on baseboard
9	NMI	Non-maskable interrupt: not supported on SMM
10	HOST_AUX	Baseboard voltage monitored by SMM card-connected to 3.3V
11	RESET_L	Baseboard reset signal from server monitor mouse
12	GND	Ground
13	GND	Ground
14	Key	No connect on baseboard

15	SECURE_MODE	Secure mode indication: Not supported on SMM
16	GND	Ground
17	CHASSIS_INTRUSION	Chassis intrusion indication: Not supported on SMM
18	Reserved	Reserved pin –NC on baseboard
19	Reserved	Reserved pin –NC on baseboard
20	GND	Ground

Step 5.

Install Expansion Cards

WARNING

- **Power off your power supply completely when adding removing any expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards**.

1. Expansion Card Installation Procedure

1.1 Read the documentation for your expansion card and make any necessary hardware or software setting changes, such as jumpers.

1.2 Remove the bracket plate on the slot you intend to use. Keep the bracket for possible future use.

1.3 Carefully align the card's connectors and press firmly.

1.4 Secure the card on the slot with the screw you removed above.

1.5 Jump to step 6 to finish installation, then set the IRQ and DMA as follows.

2. Assigning IRQs for PCI Expansion Cards

An IRQ number is automatically assigned to PCI expansion cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that contains a card requiring an IRQ. To install a PCI card, you need to set the INT (interrupt) assignment. Since all the PCI slots on this motherboard use an INTA #, set the jumpers on your PCI cards to INTA.

Step 6.

Powering on Your Computer

1. Be sure that all switches are off (in some systems, marked with “O”).

2. After finishing all jumper settings and connections, close the system case cover.

3. Connect the power supply cord into the power supply located on the back of your system case.

4. Connect the power cord into a power outlet that is equipped with a surge protector.

5. You may then turn on your devices in the following order:
   - Your monitor
   - External SCSI devices (starting with the last device on the chain)
   - Your system power.

   For ATX power supplies, you need to switch on the power supply as well as press the ATX power switch on the front of the case.

6. The power LED on the front panel of the system case will light up. For ATX power supplies, the system LED will light up when the ATX power switch is pressed. The monitor LED may light up after the system’s LED if it complies with “green” standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. **If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test.** Recheck your jumper settings and connections or call your retailer for assistance.

7. During power-on, hold down <Delete> to enter BIOS setup. Follow the instructions in the next chapter, **BIOS Setup**.

Note

- **Powering Off your computer**

  You have to first exit or shut down your operating system before switching off the power switch. For ATX power supplies, you can press the ATX power switch after exiting or shutting down your operating system.

Chapter 2

BIOS Setup

This chapter discusses the Award™ BIOS Setup program built into the ROM BIOS. The Setup program allows users modifying the basic system configurations according to their requirements. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award™ BIOS installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

The Award™ BIOS has been customized by adding important, but non-standard, features such as password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.
The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

Starting BIOS Setup

The Award™ BIOS is immediately activated when you power on the computer every time. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. After finishing configuring the whole system, then BIOS will continue to seek an operating system on one of the disks, launch then turn control over to the operating system.
While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

   Press DEL to enter SETUP.

2. By pressing <Del>immediately after switching the system on.

If the message disappears before you respond and you still wish to enter Setup Program, restart the system from state “On” to state “Off” by pressing the "RESET" button on the system case. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot as well, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow(↑) Key	Move to the previous item
Down Arrow(↓) Key	Move to the next item
Left Arrow(←) Key	Move to the previous item
Right Arrow(→) Key	Move to the next item
Esc key	In the Sub-menu: Exit the sub-menu. In the BIOS main category: Quit Without saving changes.

Key	Function
Enter Key	Select the item. A pop-up selection will display on the screen and allows to set the item value.
PgUp Key	Increase the numeric value or make change
PgDn Key	Decrease the numeric value or make change
+ Key	Increase the numeric value or make change
- Key	Decrease the numeric value or make change
F1 Key	General Help on Setup navigation keys. Press <F1> key to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <ESC> key or <F1> key again.
F5 Key	Load Previous value for this page
F6 Key	Load Failsafe Defaults for this page
F7 Key	Load Optimal Defaults this page
F10 key	Save configuration and exit the BIOS Setup Utility

Table 1 Legend Keys

Navigating through the menu bar
Use the left and right arrow keys to navigate the menu you want to be in.

To display a sub menu
Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

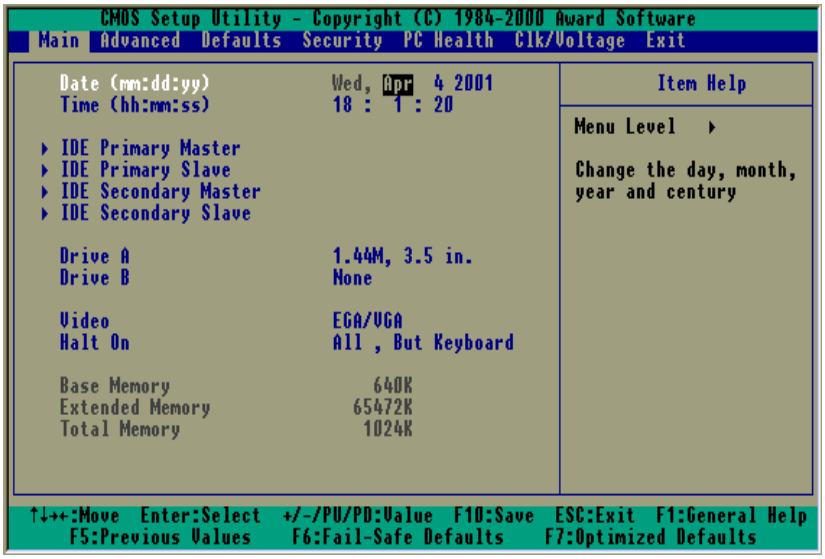
In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award™ BIOS supports an override to the CMOS setting, which resets your system to its defaults. The other way is clear the present CMOS information.(Refer to the jumper setting on the page1-2)

The best advice is to only alter settings, which you thoroughly understand. In the end , we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Awad™ BIOS and RIOWORKS™ to provide the maximum performance and reliability of the system. Even a slight change to the chipset setup may also cause potential and unpredictable failure to the system.

Setup Categories

Once you enter the Award™ BIOS CMOS Setup Utility, several setup categories will appear on top of the screen. Each setup category may contain several setup sub-categories or setup items . Use the arrow keys to select a category and press <Enter> key to accept and enter the sub-menu.



Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories.

Main

Use this menu for basic system configurations, such as system clock settings, hard disk, video card and error handling. See Section 2 for details.

Advanced

Use this menu to enable and make changes to the advanced features. This menu provides five options as shown below.

Advanced BIOS Features	This option allows a user to configure system's boot-up sequence, keyboard operation, shadowing and security and son on. See Section 3 for details.
Advanced Chipset Features	This option allows a user to configure your system based on some specific features of built-in chipset. See Section 3 for details.
Integrated Peripherals	This option allows a user configuring onboard I/O device. See Section 3 for details
Power Management Setup	This option allows a user setting the power saving mode of the peripherals. See Section 3 for details
PnP/PCI Configurations	This option allows a user configuring PCI/ Plug and Play PCI devices. See Section 3 for details

Defaults

Use this option to load BIOS default values that are factory settings for optimal performance or minimal/stable performance system operations. See Section 4 for details

Security

Use this option to set the system security by using passwords. See Section 5 for details

PC Health

This option allows a user monitoring his CPU, system temperature, fan speed and the voltage of other components. See Section 6 for details.

CLK/Voltage

This option allows a user setting the front Side Bus frequency and ratio of CPU. See Section 7 for details.

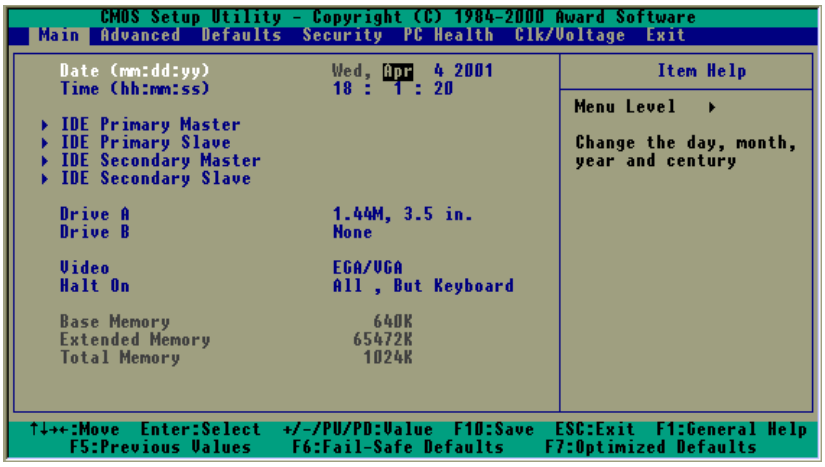
Exit

This option allows a user set if the CMOS data is replaced by new setup value. See Section 8 for details.

Save & Exit Setup	Stores the all present setting values a user made in this time into CMOS.
Exit Without Saving	Continue to use previous CMOS setup values without making any change and exit setup.

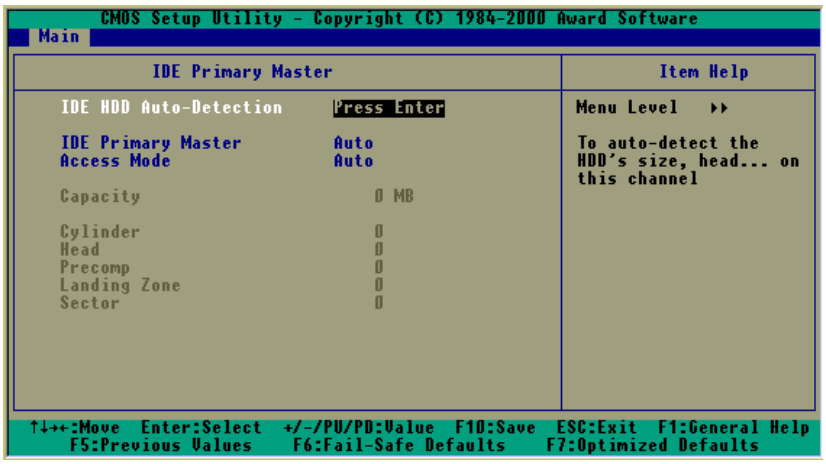
Main Menu

The <Main> menu will allow a user configuring some basic system hardware, system clock, video type and error handling. Each sub-category may include more than one setup items. Use the arrow keys to highlight the item and then use the <Enter> keys to select the value you want in each item.



Item	›ptions	Descr ›tion
Date	MM:DD:YY	Set the system date. Note that the “Day” automatically update after you set this value.
Time	HH:MM:SS	Set the system time. Note that the “Time” automatically update after you set this

IDE Primary/Secondary Master/Slave	Auto Manual None	value. Press <PgUp> or <PgDn> key to select. Press <Enter> to enter sub-menu
Drive A/B	None 360K,5.25 in 720K,3.5 in 1.2M,3.5 in 1.44M,3.5 in 2.88, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA ***(Default)*** CGA 40 CGA 80 Mono	Select the type of Video device installed in your system.
Halt On	All Errors No Errors All, But Keyboard All, But diskette All, But Disk/Key	This option allows a user to set if enable the control of system stops in case of the Power-On Self Test (POST) Error
Base Memory/ Extended Memory/ Total Memory	Display information only	



tem	election	Descri tions
IDE HDD Auto-Detection		Press the <Enter> key to let BIOS auto-detect the type and capacity of the hard disk in this channel.
IDE Primary/Secondary Master/Slave	Auto ***(Default)*** Manual None	If select "Manual", system will fill in all remaining fields such as type, cylinder, Precomp, head, landing zone.. If the item "Auto" is set, only the access mode can be set manually and other will remain "0". "None" means no any ATAPI and IDE hard disk device is in the channel.
Access Mode	CHS LBA Large Auto (***Default)***	Mode "**CHS**" if for IDE hard disk is smaller than 528MB; Mode "**LBA**" is for IDE hard disk over 528MB that

		supports the function of Logical Block Addressing (LBA); Mode "**Large**" is for IDE hard disk over 528MB that does not support LBA and uncommon. It can be only used with MS-DOS. If operating system is SCO UNIX, the mode need to set to "Normal".
Capacity		The capacity of hard disk in this channel. Please refer to the document of the hard disk in this channel.
Cylinder	Min=0 Max=65535	Set the number of cylinders for the hard disk. Please refer to the document of the hard disk in this channel.
Head	Min=0 Max=255	Set the number of read/write heads. Please refer to the document of the hard disk in this channel.
Precomp	Min=0 Max=65535	Please refer to the document of the hard disk in this channel.
Landing Zone	Min=0 Max=65535	Set the number of landing zone. Please refer to the document of the hard disk in this channel.
Sector	Min=0 Max=255	Number of sectors per track. Please refer to the document of the hard disk in this channel.

Note

- This option may only need to re-setup when installing a new hardware in your computer or losing the system configurations of CMOS because of unpredictable events. If the motherboard is installed in the working system, a user will not need to configure data in this option again.

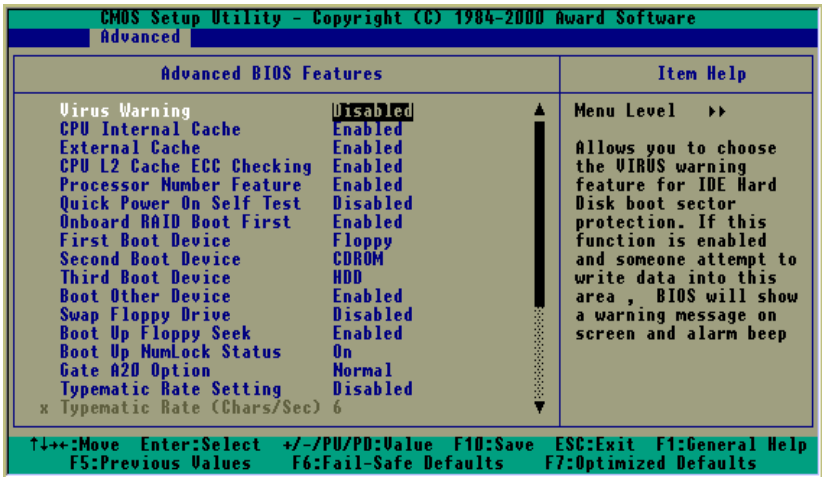
Advanced Menu

This section " Advanced: will be divided by five sub-menus.

- ***Advanced BIOS Features***
- ***Advanced Chipset Features***
- ***Integrated Peripherals***
- ***Power Management Setup***
- ***PnP/ PCI Configurations***

3-1:Advancd BIOS Features

With this section, allows a user to configure your system for basic operation. A user can change the system's default boot-up sequence, keyboard operation, shadowing and security, and so on.



Virus Warning

This option allows a user to choose the Virus Warning feature for IDE hard disk boot sector protection. If this function is enabled and someone/program attends to write data into this area, BIOS will show a warning message on the screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk or hard disk partition table.
Disabled ***(Default)***	No Warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache

This option sets the type of caching algorithm used by the L1 internal cache memory.
The choices: Enabled***(Default)*** , Disabled

External Cache

This option allows a user enabling the secondary cache. Disabling this option will slows down the system speed. Therefore, RIOWORKS recommend that you leave it enabled unless you are troubleshooting a problem.
The choices: Enabled***(Default)*** , Disabled

CPU L2 Cache ECC Checking

This option allows you to enable/Disable CPU L2 Cache ECC Checking.
The choices: Enabled***(Default)*** , Disabled

Processor Number Feature

This option allows a user to set whether enable the display of processor number if using PIII CPU
The choices: Enabled, Disabled***(Default)***

Quick Power On Self Test

Set this option to “Enabled” to instruct BIOS to boot quickly when the computer is powered on

	The choices: Enabled***(Default)***, Disabled
First/Second/ Third Boot Device	This field determines which device the system looks first/second/third during booting system up. If the first device is not a bootable device, system will seek for next one. **The choices for 1st Boot device:** Floppy***(Default)*** , LS120, HDD, SCSI, CDROM, ZIP100, LAN, Disabled. **The choices for 2nd Boot device**: Floppy , LS120, HDD, SCSI, CDROM***(Default)***, ZIP100, LAN, Disabled **The choices for 3rd Boot device**: Floppy , LS120, HDD ***(Default)***, SCSI, CDROM, ZIP100, LAN, Disabled
Boot Other Device	Set this option to "Yes" to instruct BIOS to attempt to boot from any other drive in the system if it cannot find a boot drive among the **1st Boot Device, 2nd Boot Device,** and **3rd Boot Device** options. The choices: Enabled***(Default)*** , Disabled
Swap Floppy Drive	Set this option "Enabled" to permit drives A: and B: to be swapped. The choices: *Enabled*, *Disabled* ***(Default)***
Boot Up Floppy Seek	Set this option "Enabled" to specify that floppy drive A: will perform a Seek operation at system boot. The choices: *Disabled* , *Enabled* ***(Default)***
Boot Up NumLock Status	Set this option "On" to turn the Num Lock key On at system boot. The choices: *On* ***(Default***),*Off*.
Gate A20 Option	Select if the chipset or keyboard controller should control Gate A20

Normal **(*Default)***	A pin in the keyboard controller controls Gate A20
Fast	Let Chipset control Gate A20.

Typematic Rating Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.
The choice: Enabled, Disabled ***(Default).***

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down.
The choice: 6***(Default***), 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.
The choice : 250***(Default)***, 500, 750, 1000.

Security Option

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

System	The system will not boot and access to Setup will be denied if the correct password (Supervisor password) is not entered at the prompt.
Setup ***(Default)***	The system will boot, but access to Setup will be denied if the correct password(supervisor or user password) is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup

freely

MP Version Control For OS

This option allows a user choosing the MP version.
The choices: *Version1.1* ***(Default***), *Version 1.4.*

OS Select For DRAM >64MB

This option allows a user to select the operating system (OS/2) that is running with greater than 64MB of RAM on the system.
The choices: Non-OS2 ***(Default***) ,OS2

Video Shadow

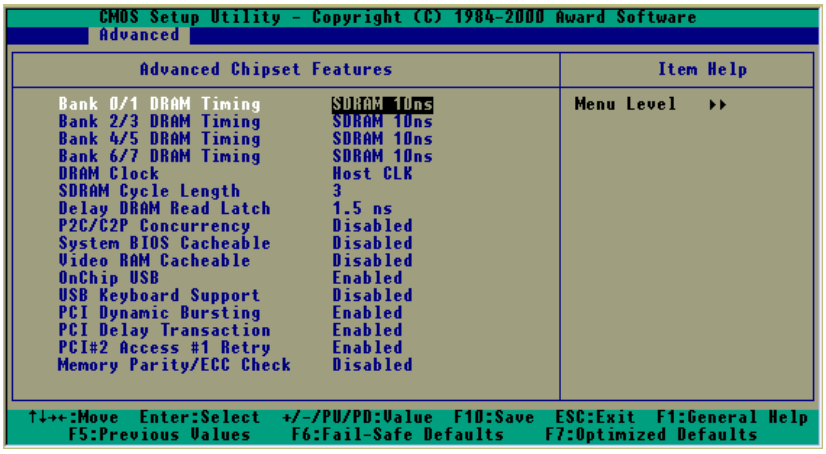
This allows you to change the video BIOS location from ROM to RAM. Relocate it to RAM enhance system performance as have more fast data access than ROM.
The choices: Enabled***(Default),*** Disabled

C800-CBFFF/ CC00-CFFFF/ D000-D3FFF/ D400-D7FFF/ D800-DBFFF/ DC00-DFFFF Shadow

This field is for shadowing other expansion cards with ROMs. Before installing other cards with ROMs, it is necessary to know which address the ROM use to shad them.
The choice: Enabled, Disabled ***(Default)***

3-2: Advanced Chipset Features

This section allows you to configure the system based on the specific features of the built-in chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It must be stated that these items should never need to be altered. The default settings have been chosen carefully for your system in order to provide the optimal system performance. You might only need to set up these values again by loading optimal defaults or fail-safe defaults if you discovered the data stored in the CMOS was being lost or not correct and syste is not longer to boot again or wrong operations



Bank 0/1;2/3;4/5 6/7 DRAM Timing

This field controls timing point for latching SDRAM data. Leave on the default value.
The choice: SDRAM 10ns***(Default),***SDRAM 8ns, Normal

DRAM Clock

This item allows you selecting DRAM clock to fixed Host clock-33MHz or Host bus clock.

	The choice:HCLK-33M,Host CLK***(Default),*** HCLK-33M
SDRAM Cycle Length	This field controls SDRAM CAS latency clock cycles. Leave on default value. The choice:3(***Default),***2
Delay DRAM Read Latch	Allow selecting the delay time of DRAM read latch. Choice: 1.0ns, 1.5ns***(Default***), No Delay, 0.5ns
P2C/C2P Concurrency	Enable the PCI to CPU / CPU to PCI concurrency. The choices: Enable, Disabled***(Default)***
System BIOS Cacheable	When set to *Enabled,* the contents of the F0000h system memory segment can be read from or written to cache memory. The contents of this memory segment are always copied from the BIOS ROM to system RAM for faster execution. The choice: Enabled, Disabled***(Default)***.
Video RAM Cacheable	Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The choice: Enabled, Disabled***(Default).***
AGP Aperture Size	This option specifies the amount of system memory that can be used by the Accelerated Graphics Port (AGP). The choice: 4 MB, 8 MB, 16 MB, 32 MB, 64 MB***(Default).***, 128 MB.
AGP –4X Mode	This field allows a user to enable the 4X mode function for AGP card. If disable this function, AGP will run in the 2X/1X mode and reduce the AGP

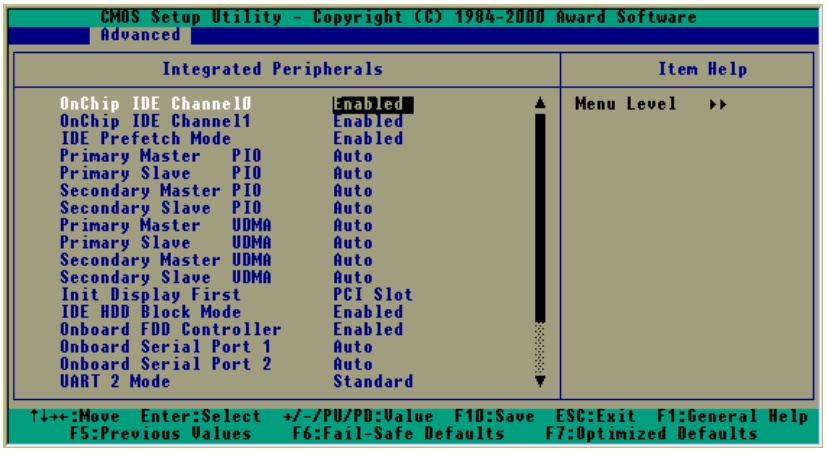
	performance. The choice: Enabled ***(Default).*** , Disabled.
AGP Fast Write	It option allows a user enabling the fast write function when using AGP 4X card. The choices: Disabled***(Default)*** , Enabled
OnChip USB	This field allows a user to enable OnChip USB function to support USB devices. The choice: Enabled***(Default)*** , Disabled
USB Keyboard Support	"Enable" allows a user to connect USB keyboard with M/B. If this field is set "Disabled", USB will not work even a USB keyboard connected. The choice: Enabled, Disabled***(Default)***
PCI Dynamic Bursting	Enable the PCI dynamic bursting to increase data transferring performance. The choices: Enabled ***(Default)***, Disabled
PCI Delay Transaction	This option can latches the ISA signal to increase the PCI to ISA data transferring performance. The choices: Enabled ***(Default)***, Disabled
PCI #2 Access #1 Retry	Enable the PCI#2 sending a retry signal to request PCI#1 stopping the data transferring. The choices: Enabled ***(Default)***, Disabled
AGP Master 1 WS Write	This option allows the AGP write the texture data to the main memory directly . The choice: Enabled, Disabled***(Default)***
AGP Master 1 WS Read	This option allows the AGP read the texture data from the main memory directly .

The choice: Enabled, Disabled***(Default)***

Memory Parity/ECC Check

Enable adds a parity check to boot-up memory test. Select the option" Enabled" only when the system memory module contains parity function.
The choice: Enabled, Disabled***(Default)***

3-3: Integrated Peripherals



Onchip IDE Channel 0/1

The integrated peripheral controller contain an IDE interface that is able to support two UDMA 100 IDE channels. Select the option" Enabled" to activate each channel separately.
The choice: Enabled***(Default)***, Disabled

IDE Prefetch Mode

This option allows a user to set if system prefetch the next data when present data is used. If this option is enabled, it will .make the system more stable.
The choice: Enabled***(Default)***, Disabled

Primary Master/Slave PIO; Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/ Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each

	device. The choice: Auto ***(Default)***, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4
Primary Master/Slave UDMA; Secondary Master/slave UDMA	Ultra DMA 33/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2, Windows 98 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA 33/66, select Auto to enable BIOS support. The Choice: Auto ***(Default***), Disabled.
Init Display First	This item allows you to decide to active whether PCI Slot or AGP first The choice: PCI Slot ***(Default***), AGP.
IDE HDD Block Mode	If your IDE Hard Disk support block mode, please set this item “Enabled” for automatic detection of the optimal read/write block number. The choice: Enabled ***(Default***) , Disabled.
Onboard FDD Controller	Select Enabled if your system has a floppy disk controller (FDD) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field. The choice: Enabled ***(Default***) , Disabled.
Onboard Serial Port 1/Port 2	Select an address and corresponding interrupt for the first and second serial ports. The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto***(Default)*** .

UART2 Mode

If enabled this item, the onboard infrared will be activated and set the second serial UART to support the infrared module connector on the motherboard. Therefore, if a device use COM2 at the same time, this device will not work.
The choice: Standard***(Default)***, HPSIR, SKIR

IR Function Duplex

This field allows the user to set the transmission method

Full	Data is transmitted in two directions at once. Any data you send will not appear on your screen until it has been received by the other device and sent back to you. Full duplex is the faster of the two modes
Half	Data is transmitted in only one direction at a time. Any data you send will be instantly displayed on your screen. Half duplex mode is easier for the devices to execute. Not all IR-capable devices can handle full duplex mode.

TX,RX Inverting enable

Leave on default for compatibility.
The choice: No,Yes***(Default)***; Yes,No; No,No ; Yes, Yes

Parallel Port

The field allows the user to set the address of parallel port on the motherboard. If a user want to install a device with parallel port, need to make sure there is no conflict in the address assignments.
The choice: 3BC/IRQ7, 378/IRQ7 ***(Default)***, 278/IRQ5, Disabled.

Onboard Parallel Mode

Select the operating mode for parallel port. “Normal” allows normal operating speed but only in the one direction; “EPP” operates at medium speed in the bi-directional parallel port operation; ”ECP” can operates at the maximum data transfer rate in the bi-direction mode; ECP+EPP allows normal operating rate in the two-way mode.
The choice: NORMAL***(Default)*** ,ECP, ECP+EPP, EPP

ECP Mode Use DMA

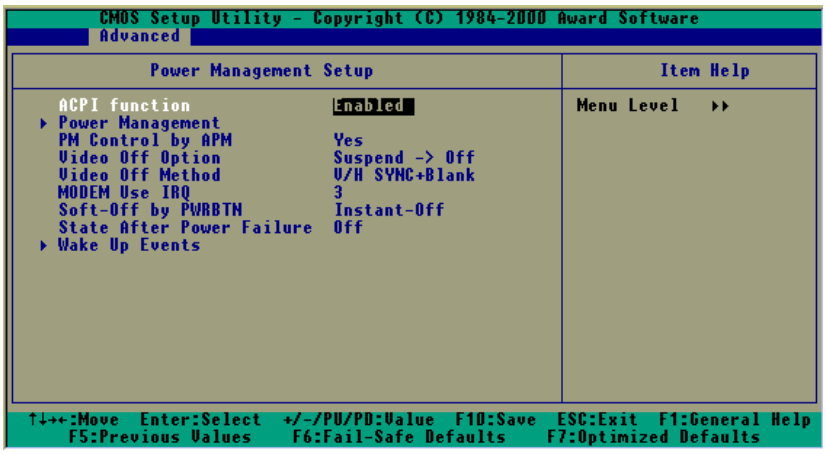
This selection is only available if ECP or ECP+EPP is selected in the “Parallel Port Mode” item
The Choice: 3 ***(Default)*** ,1

Parallel Port EPP Type

This option specifies the Enhanced Parallel Port specification version number that is used in the system. This option only appears if the Parallel Port Mode option is set to *EPP.*
The Choice: EPP1.7,EPP1.9 ***(Default***)

3.4: Power Management Setup

The Power Management Setup allows you to reduce system power consumption through different saving power method for various devices



ACPI Function

This field allows you to set if permit the operating system that has built-in the Advanced Configuration and Power Management (ACPI) feature to detect the ACPI function in the system.
The choice: Enabled***(Default)***, *Disabled*

>Power Management

This field allows you to select the type (or degree) of power saving and is directly related to the following modes:

- Doze Mode
- Suspend Mode

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

User Define **(Default)**	Allows you to set each mode individually. When not disabled , each of the ranges are from 1Min sec. to 1 Hour.
HDD Power Down	Allows a user to set HDD Power Down time which ranges from 1 min. to 15 min. and disable
Min. Saving	Minimum power management. Doze Mode = 1 Hour, Suspend Mode = 1 Hour.
Max. Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU'S**. Doze Mode = 1 Min, Suspend Mode =1 Min

PM Control by APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes***(Default)*** gives better power savings.
If the Max. Saving is not enabled, this will be preset to *No*.

Video Off Option

When enabled, this feature allows the VGA adapter to operate in a power saving mode

Doze -> Off	Monitor will remain on during power saving modes
Suspend -> Off ***(Default)***	Monitor blanked when the systems enters the Suspend mode.
Always ON	Monitor always ON when the system enters either Suspend or Standby modes.

Video Off Method

This determines the manner in which the monitor is blanked

V/H SYNC+Blank ***(Default)***	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer
Blank Screen	This option only writes blanks to the video buffer.
DPMS Support	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.
The choices: 3***(Default)***, 4, 5, 7, 9, 10, 11

Soft-Off by PWRBTN

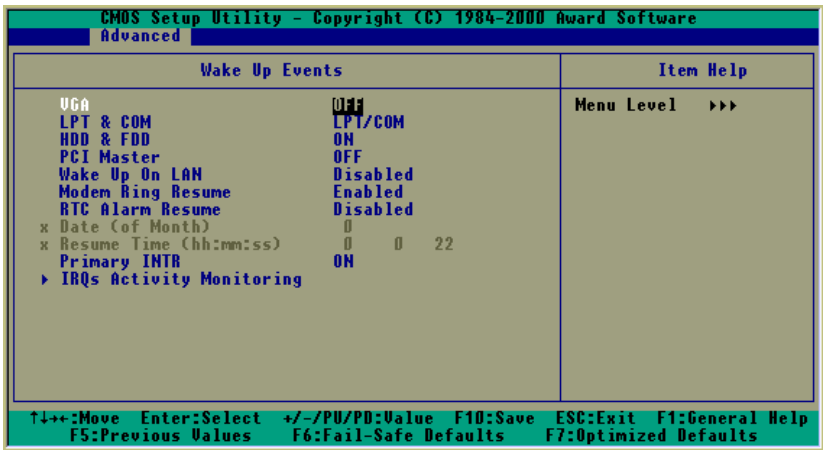
Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".
The choices: Delay 4 Sec, Instant-Off ***(Default).***

State After Power Failure

This field allows a user to set power status if power is on after power fail.
The choice: On***(Default),*** ,Off

Wake Up Events

Wake Up events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *On*, even when the system is in a power down mode



VGA

When Enabled, your can set the LAN awakens the system.
The choice: ON, OFF ***(Default).***

LPT&COM

When *On of* LPT & COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.
The choice: LPT/COM***(Default)***, NONE,LPT,COM

HDD&FDD

When *On of* HDD & FDD, any activity from one of the listed system peripheral devices wakes up the system.
The choice: ON ***(Default)*** , OFF

PCI Master

When you *are On of DMA / ISA Master,* any activity from one of the list system peripheral devices wakes up the system.
The choice: OFF, ON***(Default)***

Wake Up On LAN

An input signal on the LAN wakens the system from a soft off state.
The choice: Disabled***(Default)***, Enabled

Modem Ring Resume

An input signal on the external modem wakens the system from a soft off state.
The choice: Disabled***(Default)***, Enabled

RTC Alarm Resume

When *Enabled,* your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode. Default is Disabled
The choice: Disabled***(Default)***, Enabled

Primary INTR

When set to On ***(Default)***, any event occurring at IRQ will awaken a system which has been powered down.
The choice: ON, OFF ***(Default).***

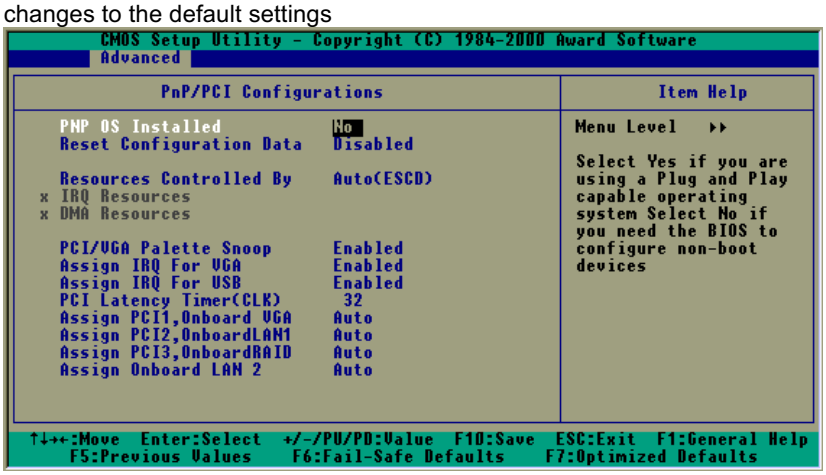
>IRQ Activity Monitoring

The following is a list of IRQ's, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.
When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ3 (COM 2):Enabled ***(Default)***
IRQ4 (COM 1): Enabled ***(Default)***
IRQ5 (LPT 2) : Enabled ***(Default)***
IRQ6 (Floppy Disk) : Enabled ***(Default)***
IRQ7 (LPT 1) : Enabled ***(Default)***
IRQ8 (RTC Alarm) :Disabled ***(Default))***
IRQ9 (IRQ2 Redir) : Disabled ***(Default***)
IRQ10 (Reserved)):Disabled ***(Default)***
IRQ11 (Reserved) : Disabled ***(Default)***
IRQ12 (PS / 2 Mouse) : Enabled ***(Default)***
IRQ13 (Coprocessor) : Enabled ***(Default)***
IRQ14 (Hard Disk) : Enabled ***(Default)***
IRQ15 (Reserved) :Disabled ***(Default***

3.5 PnP/ PCI Configurations

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings



PNP OS Installed

This field allows you to determine install PnP OS or not.
The choice: Yes, No ***(Default)***

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.
The choice: Enabled, Disabled ***(Default)*** .

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98.
The choice: Auto (ESCD) ***(Default)*** , Manual.

>IRQ Resources
IRQ 3/4/9/10/11/12/13/15

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:
Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices
The choice: Legacy ISA, PCI/ISA PnP***(Default)***

>DMA Resources
DMA0/1/3/5/6/7 assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:
Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.
The choice: Legacy ISA, PCI/ISA PnP***(Default)***.

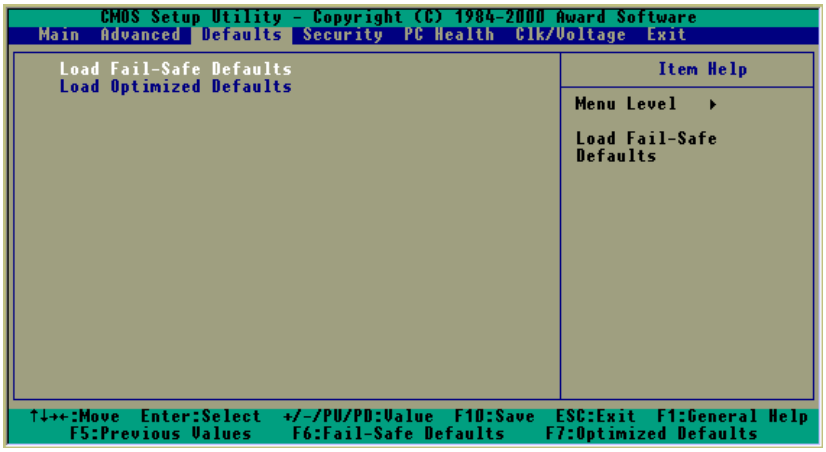
PCI/VGA Palette Snoop

When this item is 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.

	The choice: Enabled ***(Default).,*** Disabled
Assign IRQ For USB	Enable/Disable to assign IRQ for USB. The choice: Enabled ***(Default)***, Disabled
Assign IRQ For VGA	Enable/Disable to assign IRQ for VGA. The choice: Enabled***(Default),*** Disabled

Defaults Menu

Selecting “Defaults” from the main menu shows you two options, which are described below



Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N)? N

Pressing ‘Y’ loads the BIOS default values for the most
stable, minimal-performance system operations

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

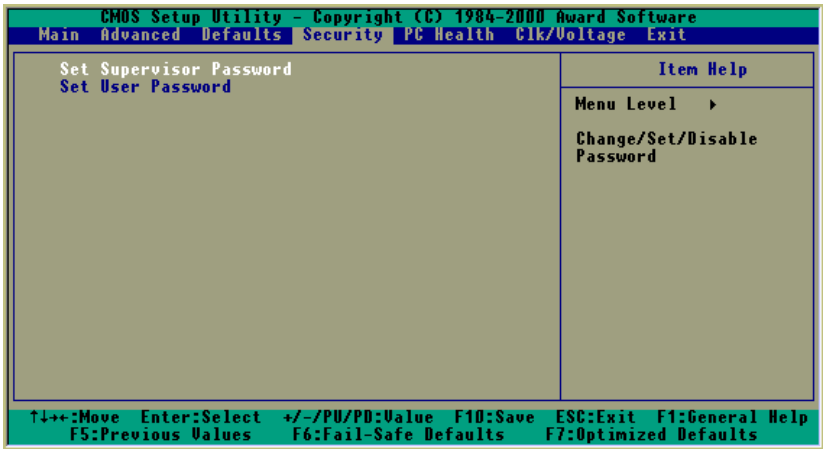
Pressing ‘Y’ loads the default values that are factory settings for optimal performance system operations.

Note

For fast setting up a new system at the first time, we strongly recommend to load system optimal defaults first.

Security Menu

In this Section, a user can set either supervisor or user password, or both for different level of password securities. In this section, a user also can set the virus protection for boot sector.



SET SUPERVISSOR PASSWORD

You can enter and change the options of the setup menus. (Also refer “Security Option” In the BIOS Features Setup)

SET USER PASSWORD

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password. (Also refer “Security Option” In the BIOS Features Setup)

ENTER PASSWORD

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password

PASSWORD DISABLED

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

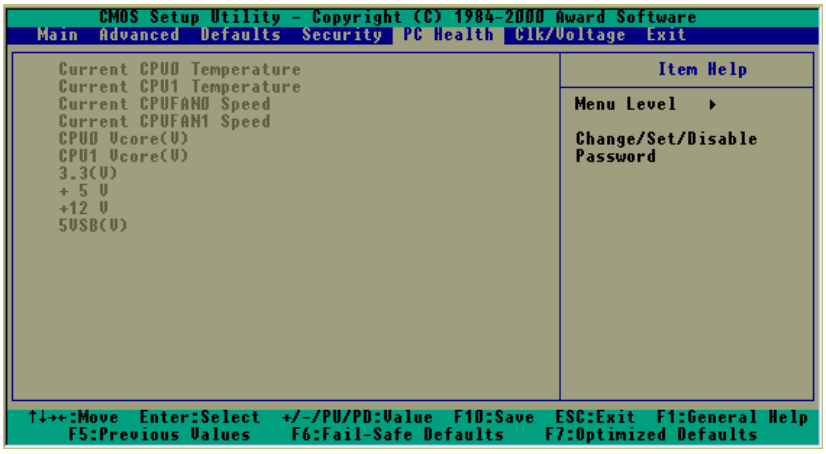
When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 2). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

PC Health Menu

As a hardware monitor function is built in the motherboard. BIOS will automatically detect system health parameters such as CPU temperature, CPU fan speed, CPU voltage, and voltages on the motherboard. Hence, from these data, the healthy status of system will be showed. In this section, Only the item “Chassis Intrusion Message” can be set, Others is for monitoring purposes.



Current CPU0/CPU1 Temp	This field only displays the current CPU 0/ CPU1 operating temperature.
Current CPUFAN0/ CPUFAN1 Speed	This field only displays the current CPU 0/ CPU1 operating speed.
CPU 0 /CPU1	This field only displays the current CPU 0/ CPU1

Vcore

core voltage.

3.3V/ 1.5V/12V

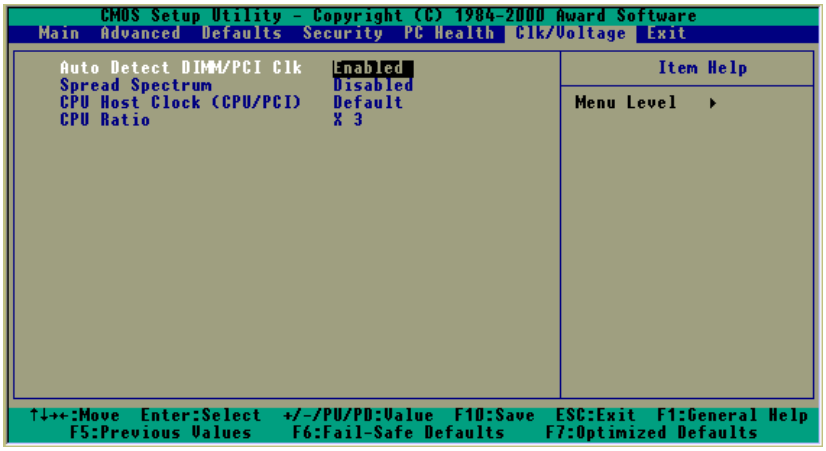
This field only displays the voltage of component.

Chassis Intrusion Message

RIOWORKS M/B provides the chassis intrusion status monitoring function. Set this option to "**Reset**" when the system needs to provide this function and the system need to boot two times from power-on. After the above action, the system will have warning message on monitor during POST if the chassis had been open.
The choices: Enable, Disable ***(Default***), Reset

CLK/Voltage Menu

In this section, a user can set the operating frequency of the CPU and if let BIOS auto detect the DIMM/PCI Clk.



Auto Detect DIMM/PCI Clk

This option allows a user enabling/disabling the auto-detection function of DIMM/PCI clock.
The choices: Enabled ***(Default),*** Disabled

Spread Spectrum

This item allows a user to set if enable/disable the spread spectrum module.
The choices: Enabled**,** Disabled***(Default)***
Note: this item is only for EMI test purpose

CPU Host Clock (CPU/PCI)

This field allows you to select various front side bus frequency (FSB) of CPU for over-clocking

purpose if "CPU Speed" selection is set "Manual".
Note:This maximum setting value will depends on the CPU type and M/B.

The choices for 66Mhz FSB Celeron: Default, 66/33Mhz, 75/37Mhz, 83/41Mhz, 95/31Mhz, 100/33Mhz,
The choices for 100Mhz FSB PIII FC-PGA CPU: Default, 100/33Mhz,103/34Mhz, 112/37Mhz, 124/31Mhz, 129/32Mhz, 133/33Mhz,
The choices for 100Mhz FSB PIII FC-PGA CPU: Default, 133/33Mhz, 138/34Mhz, 140/35Mhz, 150/37Mhz
,

CPU Ratio

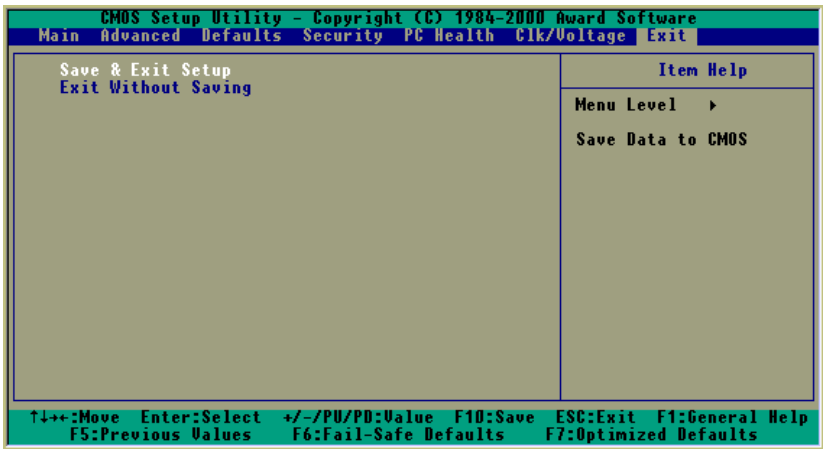
This item allows you to select the CPU ratio if "CPU Speed" selection is set "Manual".
This maximum setting value depends on the maximum CPU operating frequency.
The choice: X 3***(Default)***, X 3.5, X 4 ,
X 4.5, X 5, X 5.5, X 6, X 6.5,X 7,X 7.5,X 8

Note

- Because the CPU operating frequency has to be is equal to frequency (Front side Bus) multiply ratio, the user needs to specify the proper setting in order to have correct CPU operating frequency.
- For those CPU which ratio is fixed on the specific value, it will be useless to adjust the CPU ration in the BIOS setup.

Exit Menu

Once you have changed all of set values in the BIOS setup, you should save your changes and exit BIOS Setup program. Select “Exit” from the menu bar to display the following sub-menu



Save & Exit Setup

Pressing <Enter> on this item asks for confirmation

Save to CMOS and EXIT (Y/N)? Y

Pressing “Y” to stores the all present setting values a user made in this time into CMOS. Therefore next time you boot your computer up, the BIOS will re-configure your system according data in CMOS.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you exiting Setup without changing previous setting values in CMOS. The previous selections remain in effect. This will exit the Setup utility and restarts your computer when click this selection.

Chapter 3

BIOS Flash Upgrade Utility

This chapter briefly discusses the Award BIOS Flash Upgrade utility, with instructions to guide you through updating an Award BIOS. In the examples given here, we use the file name *newbios.bin* to represent the new BIOS and the file name *oldbios.bin* to represent the old BIOS. Note that these file names are only examples to help you understand the updating process.
Awdflash.exe commands are not case-sensitive. Upper- or lowercasing of command letters in this manual is for clarity only.

Preparation

The upgrade process requires two files from Award:

- The new BIOS file *(*e.g., *newbios.bin)*
- The upgrade utility (awdflash.exe).

Although you may conceivably use a different media for the files, this manual assumes that you are using a floppy disk.

- Create a bootable floppy disk.
- Transfer the two Award files listed above onto the diskette.

Now you are ready to start the upgrade process

WARNING

Do not interrupt the upgrade program while it runs! Interrupting the program leaves the system without a BIOS and unusable. If by some unlikely chance the power goes off during the few seconds the program requires to run, the

system is left without a working BIOS and needs a correctly programmed flash EPROM installed.

Running the Program

1. Boot the system from the bootable floppy diskette you created. Booting from the diskette bypasses loading drivers from the CONFIG.SYS and AUTOEXEC.BAT files on the hard drive, eliminating the possibility of loading a program (e.g., a memory manager) that conflicts with the Award flash utility.

The Award flash utility cannot run when EMM386 or QEMM are loaded. If you try, an error message appears.

2. At the DOS command line, type ***awdflash*** and press A screen similar to this appears:

FLASH MEMORY WRITER v7.08 **(C) Award Software 1999 All Rights Reserved**
For I430HX-2A59F000 DATE: 05/18/99 **Flash Type -** **File Name to Program:**
Error Message:

3.

No	Yes
If you **DO NOT** wish to update the BIOS, type **n**.	If you **DO** wish to update the BIOS, type **y**.

The program exits to the command line. Skip the following steps in this section and go directly to the next section.	When the updating is finished, the following message appears: **Programming Flash Memory - 7FFFF OK** Restart your system. Your BIOS should be successfully updated.

Command Line Parameters

You can run the BIOS flash update utility at the DOS command line. This section describes the command line parameters and switches, with examples of their usage

NOTE

This document describes parameters implemented in Award flash update utility version 7.08. For a full list of parameters in the version you are running, type awdflash /? and press <ENTER> key.

```
        Awdflash 7.08  (C)Award Software 1999 All Rights Reserved
Usage:  AWDFLASH [FileName1] [FileName2] [/<SW>[/<SW>…]]
   FileName1 :  New BIOS Name For Flash Programming
   FileName2 :  BIOS File For Backing-up the Original BIOS
   <Switches>
    ? :  Show the Messages
  py :  Program Flash Memory                  pn: No Flash Programming
  sy :  Backup Original BIOS To Disk File     sn: No Original BIOS Backup
  sb :  Skip BootBlock programming            sd: Save DMI data to file
  cp :  Clear PnP(ESCD) Data After
```

Programming
cd : Clear DMI Data After Programming
cc : Clear CMOS Data After Programming
R : RESET System After Programming
Tiny : Occupy lesser memory
E : Return to DOS When Programming is done
F : Use Flash Routines in Original BIOS For Flash Programming
LD : Destroy CMOS Checksum And No System Halt For First Reboot After Programming

Example: AWDFLASH 2a59i000.bin /py/sn/cd/cp

Save/Update

/P Program (update) BIOS; switch **y** or **n**.
/S Save old BIOS; switch **y** or **n**.

Example 1
To program a new BIOS and save the old BIOS, enter the following at the command line:
awdflash *newbios.bin* /Py *oldbios.bin* /Sy
The program saves the old BIOS to the file as named and updates it with the new BIOS.

Example 2
To program a new BIOS without saving the old BIOS, enter the following at the command line:
awdflash *newbios.bin* /Sn
After executing this command, the program prompts you:
Are you sure to program (y/n)
Type **y** in response.

Example 3

To save the old BIOS to a file without updating it, enter the following at the command line:
awdflash /Pn *oldbios.bin*

After executing this command, the program prompts you:
Do You Want to Save BIOS (Y/N)
Type **Y** in response.

Clear Data

The Award flash utility version 7.08 and above has three additional command line parameters:
/CC Clear CMOS.
/CP Clear PnP data (ESCD)
/CD Clear DMI data

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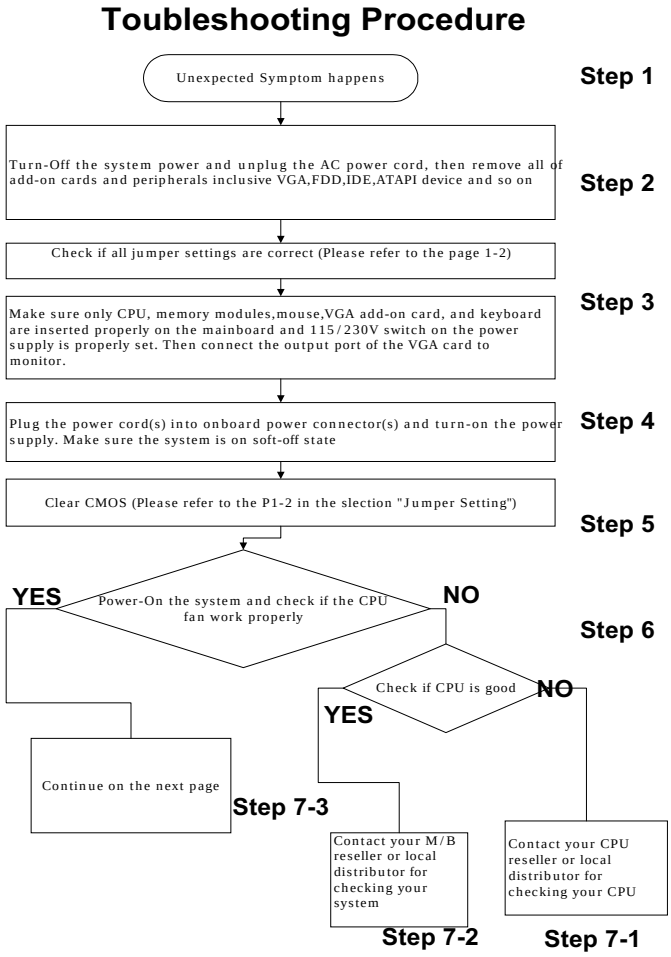
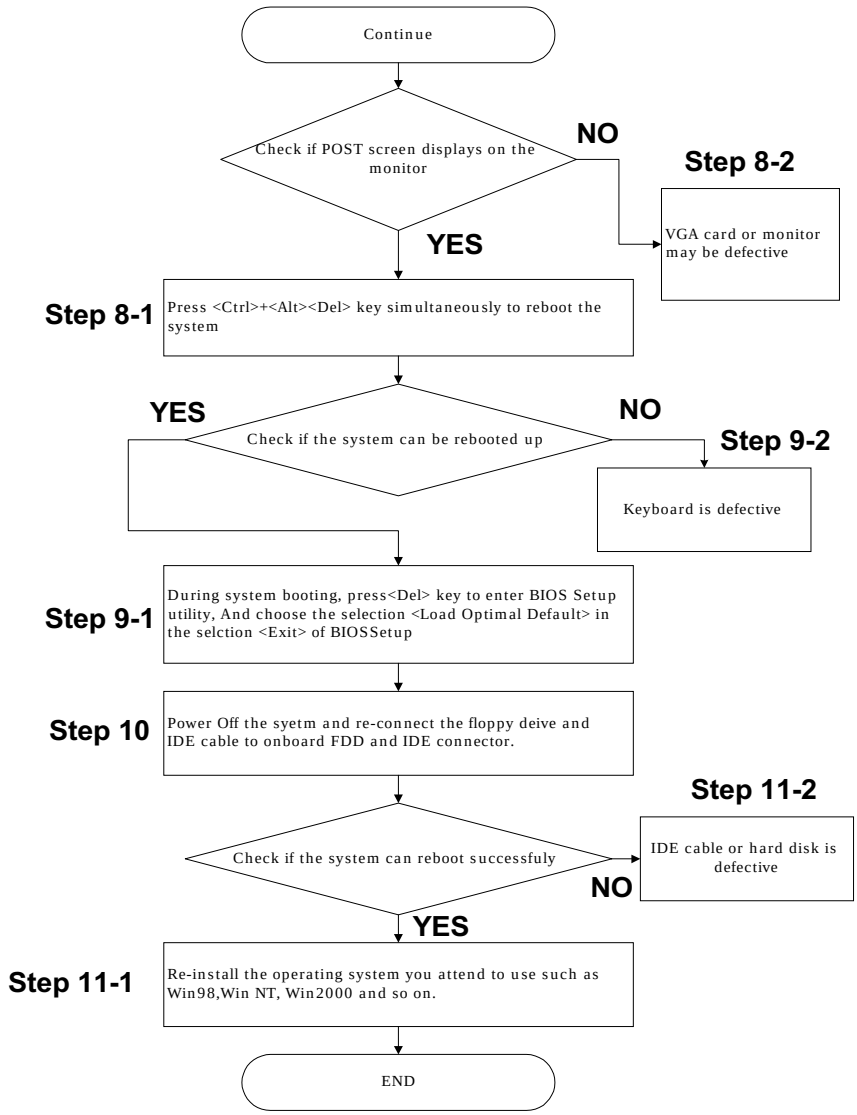
Appendix A

Troubleshooting

The following is a checking procedure for common problem encountered during system assembly.




Continue
Check if POST screen displays on the monitor
NO
Step 8-2
VGA card or monitor may be defective
YES
Step 8-1
Press <Ctrl>+<Alt><Del> key simultaneously to reboot the system
YES
Check if the system can be rebooted up
NO
Step 9-2
Keyboard is defective
Step 9-1
During system booting, press<Del> key to enter BIOS Setup utility, And choose the selection <Load Optimal Default> in the selction <Exit> of BIOSSetup
Step 10
Power Off the syetm and re-connect the floppy deive and IDE cable to onboard FDD and IDE connector.
Step 11-2
Check if the system can reboot successfuly
IDE cable or hard disk is defective
NO
YES
Step 11-1
Re-install the operating system you attend to use such as Win98,Win NT, Win2000 and so on.
END

WARNING

Before you insert any add-on card or hardware component in the SDVIB, always disconnect the power cord first.

2.Symptom checking List

Sy nptom	Check point
No Power (FAN is not rotating)	1. Make sure no short circuit exist between the motherboard and chassis 2. Check if all jumpers are set to the default position. 3. Check if the 115V/230V switch on the power supply is properly set. 4. Check the CPU is inserted properly into CPU socket. 5. Check the power cord of the CPU fan is plugged into the correct position. 6. Turn the power switch on and off to test the system 7. Check the power of the battery on the M/B. In general, the battery voltage is around 3VDC.
Can power on the system (FAN is rotating), but no screen display.	1. Remove all the add-on card exclusive CPU, and VGA add-on card, memory modules. 2. Check if all jumpers are set to the default position. 3. Clear CMOS by using CLRTC jumper. Please refer to the page 1-2 in this manual. 4. Check if the connection is connected properly between onboard VGA port and monitor. 5. Use speaker to determine the symptom.

Memory Error	1. Check if the memory DIMM module is inserted into DIMM socket properly. 2. Check if different speed memory modules are mixed and used in the SDVIB. Verify the BIOS setup is configuration for the fastest speed of RAM used. RIOWORKS recommend always use the same speed RAM in the system. 3. Make sure your memory module(s) is compliant with PC100 or PC133 Spec.

Appendix B

Symptom Report Form

M/B			**Serial Number**			**BIOS version**			
CPU 1									
CPU 2									
DIMM 0									
	Size	MB	Brand		Component Model				
DIMM 1									
	Size	MB	Brand		Component Model				
DIMM 2									
	Size	MB	Brand		Component Model				
DIMM 3									
	Size	MB	Brand		Component Model				
FDD									
PCI-1									
PCI-2									
PCI-3									
PCI 4									
PCI 5									
PCI 6									
Onboard IDE 0	Master								
	Slave								

Onboard SCSI CH 0				
Onboard SCSI CH 1				
Power Supply		Watt	Model Number	
Other Devices				
Operating system				
Symptom Description:				
Name:				
Contact email address:				