TDRCA
User's Guide

RIOWORKS™
The Reliable Building Block

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Contents

Overview

Thank you for choosing the RIOWORKS™ TDRCA high performance motherboard. The TDRCA is a Dual Intel® Tualatin (FC-PGA 2) CPUs. Socket-370 motherboard based on the ATX form factor featuring the RCC Champion 2.0HE-SL Dual Processors for 133/100 Front Side Bus, and two-way interleaved PC133 Memory . In the memory support, TDRCA provides four DIMM sockets for and maximum of memory size can be up to 4GB with ECC support. The more advantage is TDRCA provides dual ultra160 SCSI channels to increase I/O transformation to maximum 640MB/sec. (100MB/sec per IDE channel)

Flexibility and expandability are always concerned by RIOWORKS™, TDRCA contains two 32bit/33Mhz PCI slots、two 3.3 v 64bit /66MHz PCI Slots and two 5v 64bit /66MHz PCI Slots for numerous add-on cards. Other features such as onboard 3COM 10/100 Mbps Ethernet LAN Card 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: If you discover damaged or missing items, please contact your retailer.

- ❒ One RIOWORKS TDRCA motherboard
- ❒ One 80-wire ATA-66 ribbon cable
- ❒ One 40-pin ATA-33 ribbon cable
- ❒ One floppy ribbon cable
- ❒ One bag of spare jumpers
- ❒ One TDRCA user's guide
- ❒ One CD containing drivers and utilities
- ❒ One Onboard SCSI user's guide
- ❒ Onboard SCSI driver disk(s)
- ❒ One 68-Pin SCSI Cable

Features Highlight

Processor	▪ Intel® Dual Tualatin FC-PGA2 CPUs ▪ Designed for Socket 370 technology.
Chipset	▪ Use the latest high performance ServerWorks Champion 2.0HE-SL and South Bridge CSB5 Dual Processors system. ▪ CIOB20 supports 64bit/66MHz PCI bus.
System BIOS	▪ AMI BIOS ▪ I2O support ▪ Legacy USB support ▪ MP 1.1 & 1.4 compliant ▪ SMBIOS 2.3 compliant ▪ DMI 2.0 compliant ▪ Advanced IDE、SCSI Hard Drive (supports bigger than 8GB HDD with S.M.A.R.T) features ▪ Soft Power-down ▪ Secure Boot ▪ Multiple boot support ▪ Y2K compliant / PC99 compliant
System/IO bus	▪ 133/100 Front Side Bus ▪ Two-way interleaved PC133 Memory
System Memory Support	▪ Four DIMM slots supports up to 4GB SDRAM memory capability ▪ Registered Memory Support Only.
Expansion Slots	▪ 6 PCI(4*64 bit/66 MHz, 2*32 bit/33 MHz) Slots system flexibility and expandability.
Onboard Dual LAN and video	▪ Dual 3COM 3C920 LAN controller onboard. ▪ ATI RageXL video controller with 4MB memory

Onboard Dual Channel SCSI

- Dual Adaptec 7899w ultra 160 SCSI channels for bandwidth up to 320MB/s.

Onboard Multi-I/O

- NS super I/O
- One (Plus one) serial ports with UART 16550
- One parallel port with ECP/EPP support
- Dual onboard USB connectors; Dual extendable USB connectors
- PS/2 mouse and keyboard connectors with Wake-up function

Ultra DMA mode 5/4 Bus Master IDE

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

Floppy Drive

- Supports 3.5” (1.44MB or 2.88MB) floppy drive
- Support Japanese standard “Floppy 3 mode” (3.5” disk drive: 1.44MB, 1.2MB, 720KB)
- Support 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 Microsoft Windows 2000/Windows XP compatibility, and 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 3com 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)	▪ Support DMI through BIOS, which allows hardware to communicate within a standard protocol creating a higher level of compatibility.
PC99 Compliant	▪ The TDRCA is fully compliant with the Microsoft PC99 specification at both the hardware and BIOS levels.
VRM Support	▪ Support VRM 8.5 specification.
Dimension	▪ SSI form factor with size : "12*13"
Onboard ZCR	▪ One Adaptec Zero Channel Raid Connector ready ▪ Support in PCI slot
Onboard BMC	▪ Base-Board Management Controller (Winbond 83910F) ▪ Hardware monitor of CPU Thermal Protection, CPU/System Fan monitor, Voltage Report, Chassis Intrusion ▪ ICMB Interface ready ▪ EMP Port ready ▪ Power on/off, Reset the remote system

Onboard IPMI	▪ One IPMI connector ready
Performance PCI Bus	▪ Four 64 bit/66 MHZ PCI slots, and two 32 bit/33 MHz PCI slots are PCI 2.2 compliant ▪ 64 bit/66 MHz provides PCI bandwidth 533MB/s vs. 133MB/s (32 bit/33 MHz)
ATX Power Connector	▪ 3V, 5V, 5V standby and 12V 24-pin

About This User Guide

This manual explains how to build your system with TDRCA in detail. Please follow the procedures of this User Manual 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 TDRCA. 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 TDRCA in an easy and simple ways. This icon always provides some useful description to help you configure your system.

Getting Help

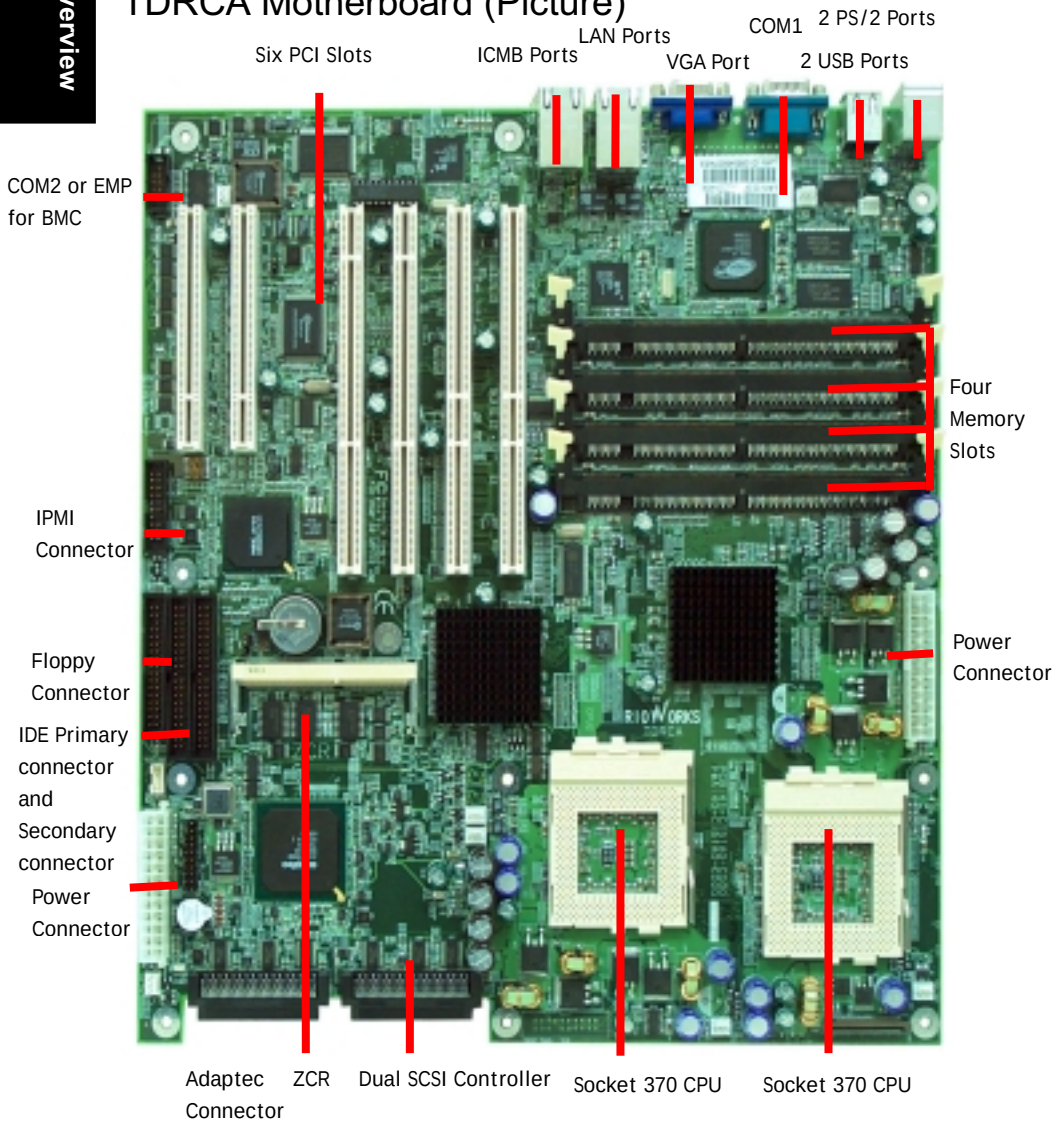
If a problem arises with your system during installation or OS operating, you should ask your dealer for help first as your system has most likely be configured by them. They always have the best idea and quick response for your symptoms. If your dealer is near to your locations, you should bring your 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.

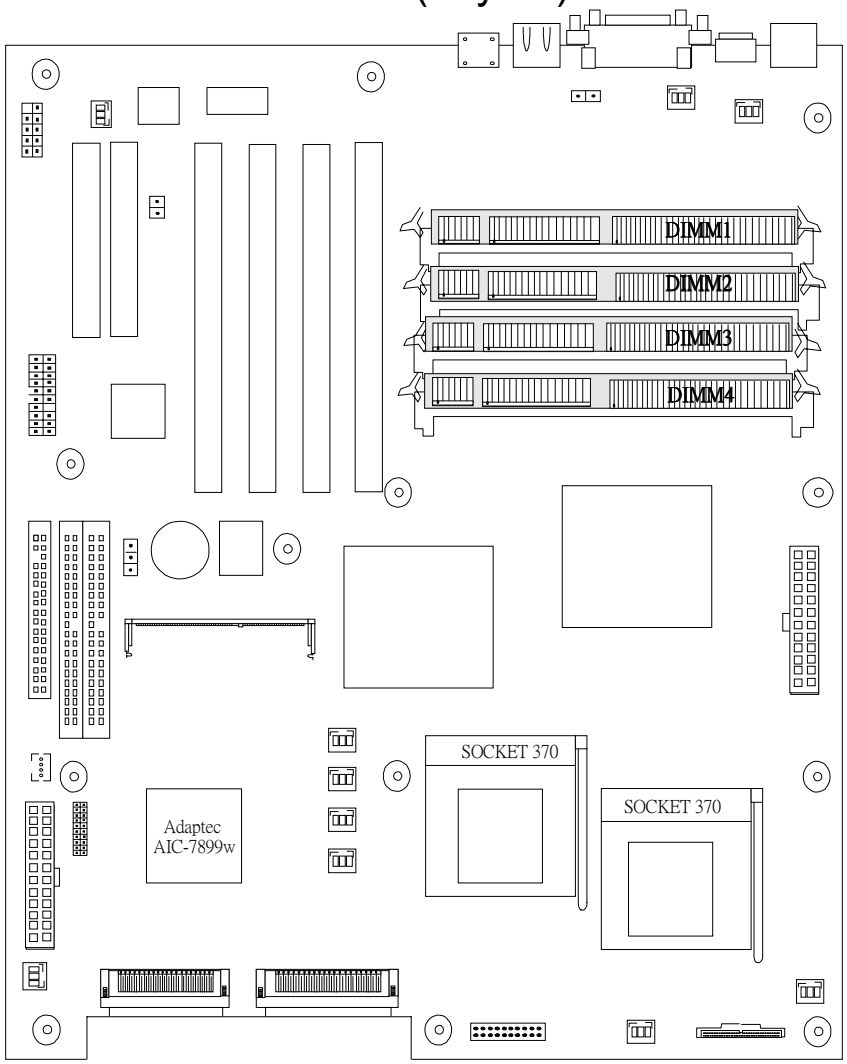
2. FAQ sections on RIOWORKS Website are often helpful since other user's questions are often your own.

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 ease fill in the symptom report form (page A-5) in order to let our engineers solve your problem quickly.

TDRCA Motherboard (Picture)



TDRCA Motherboard (Layout)



Chapter 1
Hardware Installation

In this chapter, the installation of the TDRCA 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.

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.

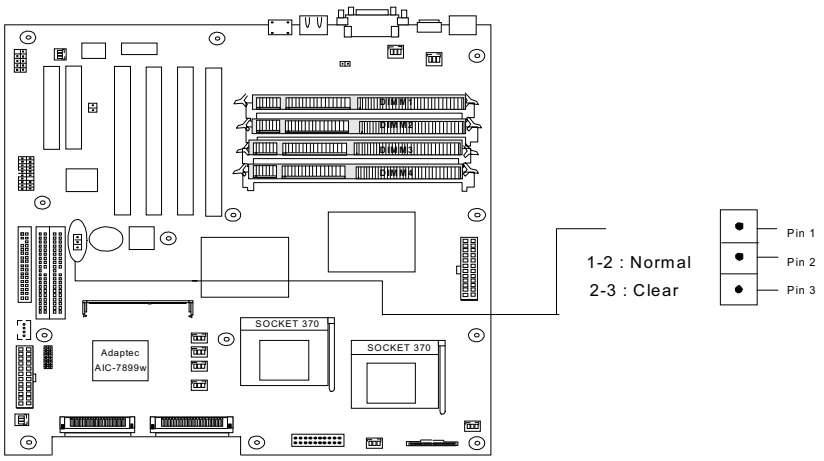
Jumper Setting

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.



TDVIA Clear CMOS Header

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 boot-up and select <Load Optimal Defaults> or <Load Failsafe Defaults> option in the selection <Exit>. Then re-enter BIOS setup to re-enter user preferences.

Step 2

Install Memory

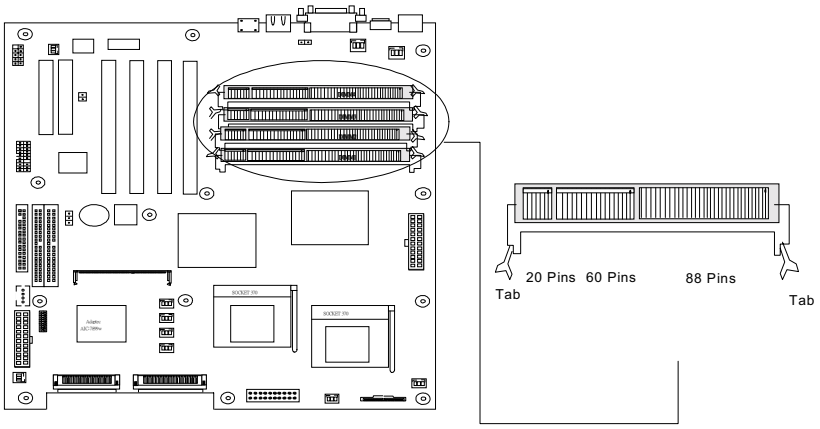
TDRCA uses dual 168-pin Registered SDRAM Four DIMM sockets are available for 2.5Volts (power level), PC100/PC133, buffered/Registered SDRAM with 32MB, 64MB,128MB, 256MB, 512MB and 1GB combinations. And the total memory size is between 32MB and 4GB.

IMPORTANT

- **Use only PC100/PC133 registered SDRAM. 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 odd 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 and registered SDRAM should not be mixed and use together.**
- **Memory support: Mixed 1M/ 2M/ 4M/ 8M/ 16M x N Registered SDRAMs.**
- **Supports 8 banks up to 4GB Regiestered SDRAMs modules.**

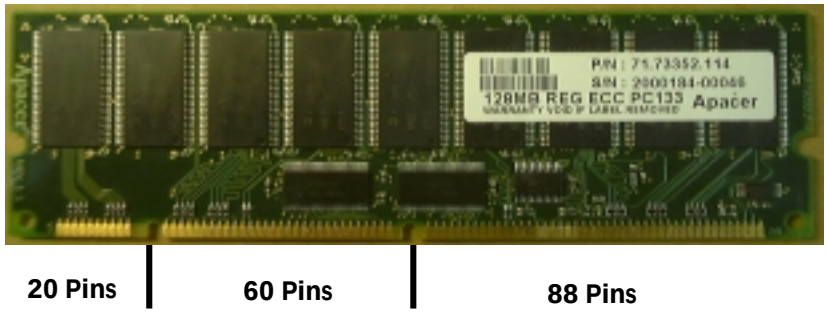
Memory Installation Procedures

1. Locate the DIMM modules on the TDRCA.

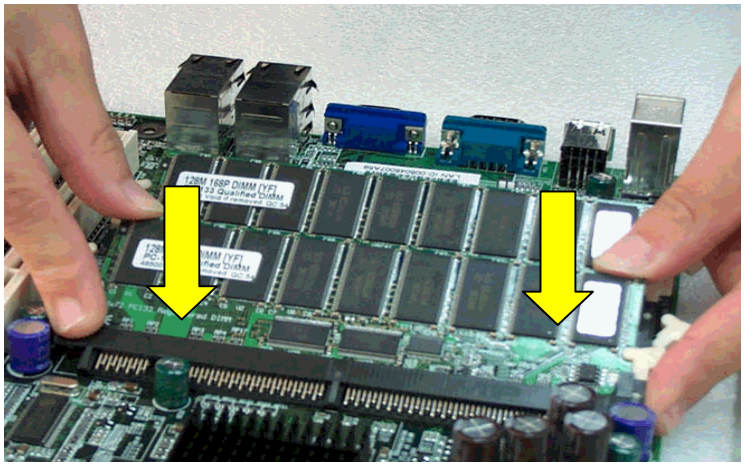


TDRCA Install Memory

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.

IMPORTANT

You have to insert two memory DIMMs in #1 and #3 or #2 and #4 DIMMs sockets (slots or connectors) while you install the system at the first time that you want to use it ; such as the system will be able to boot up, otherwise, it can not work yet.

Step 3

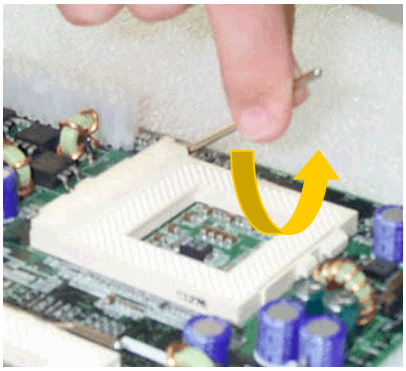
Install CPU

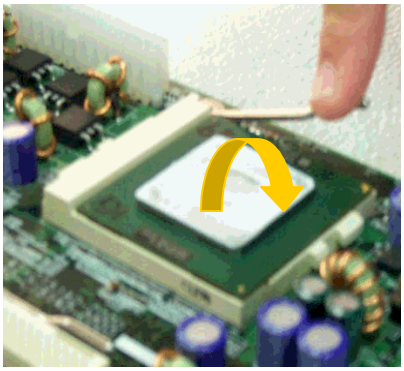
TDRCA provides two CPU sockets for dual Intel® 533~1GHz+ PIII FC-PGA processors at 100/133MHz FSB or Intel® Tualatin FC-PGA2 processors CPU.

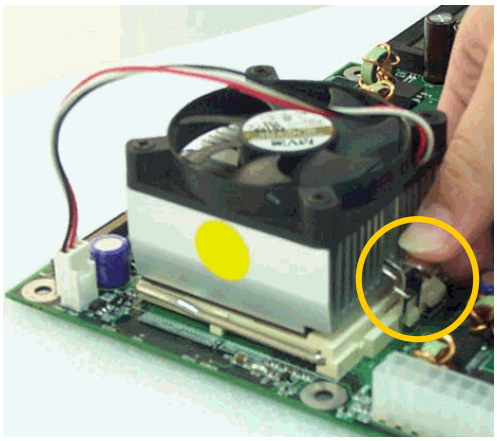
CPU Installation Procedures

1. Lift up the socket lever and carefully place the socket 370 CPU with the correct orientation as the figures are shown below

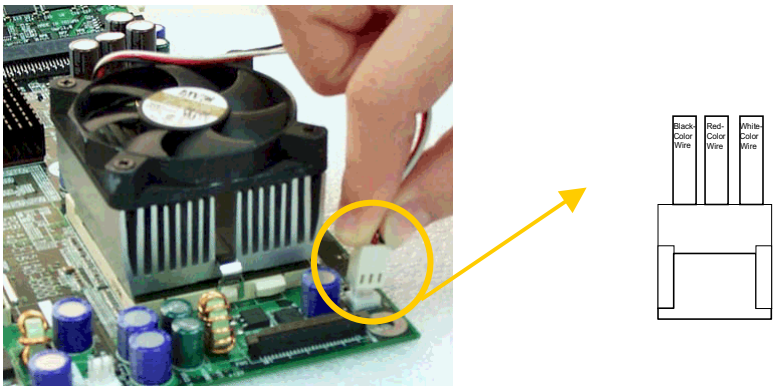
2. Mount the CPU heatsink with proper exproxy and secure it with the lock as the figures are shown below.







3. Plug the 3-wire fan power core into the connector named CPU1 FAN



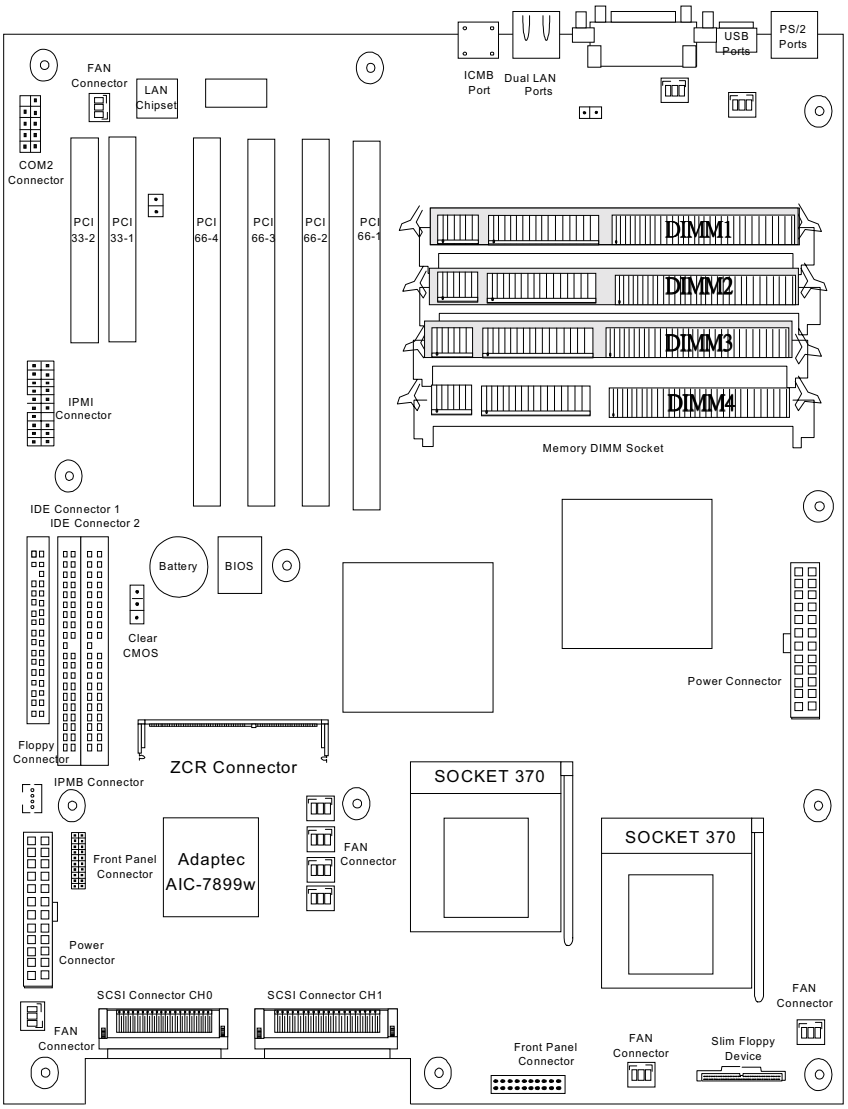
4. Repeat to install the other CPU

Step 4.

Attach Cable to Connectors

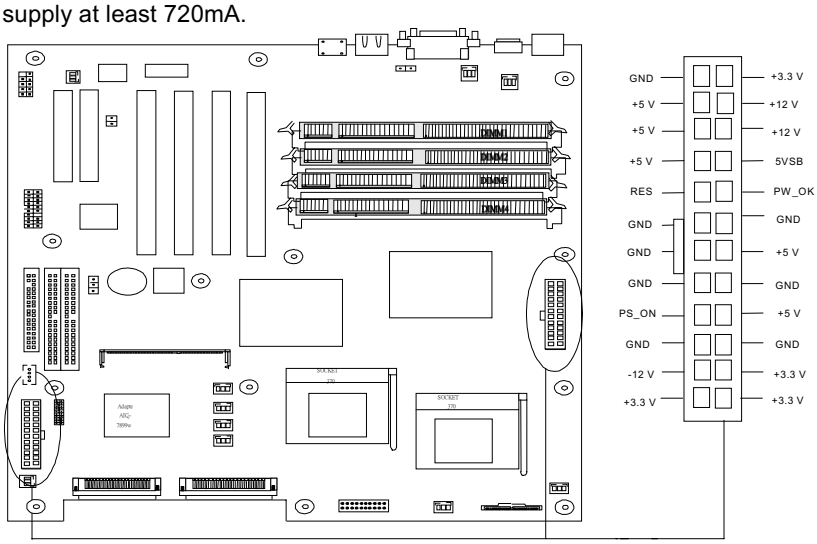
This step explains where each connector is inserted on the TDRCA. There will be a TDRCA layout picture following each explanation indicating where the connector is inserted. The motherboard connectors are:

Item	Connectors	Page
1	ATX Power Supply	1-10
2	Floppy Disk Drive	1-10
3	Primary IDE	1-11
4	Primary SCSI	1-12
5	Reset Switch	1-14
6	SCSI Hard Disk Activity LED	1-14
7	Hard Disk Activity LED	1-14
8	Standby LED	1-14
9	Speaker Controller	1-14
10	ATX power switch/Soft Power Switch	1-14
11	System Power LED	1-14
12	CPU, and Aux Fan connectors	1-15
13	Adaptec ZCR Connector	1-16
14	Wake-On-LAN/Modem header	1-16
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


FAN Connector
LAN Chipset
ICMB Port
Dual LAN Ports
USB Ports
PS/2 Ports
COM2 Connector
PCI 33-2
PCI 33-1
PCI 66-4
PCI 66-3
PCI 66-2
PCI 66-1
DIMM1
DIMM2
DIMM3
DIMM4
Memory DIMM Socket
IPMI Connector
IDE Connector 1
IDE Connector 2
Battery
BIOS
Clear CMOS
Power Connector
Floppy Connector
ZCR Connector
IPMB Connector
SOCKET 370
SOCKET 370
Front Panel Connector
Adaptec AIC-7899w
FAN Connector
Power Connector
SCSI Connector CH0
SCSI Connector CH1
FAN Connector
FAN Connector
Front Panel Connector
FAN Connector
Slim Floppy Device

1. ATX Power Supply (20-pin ATX power connectors)

The connector connects 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.



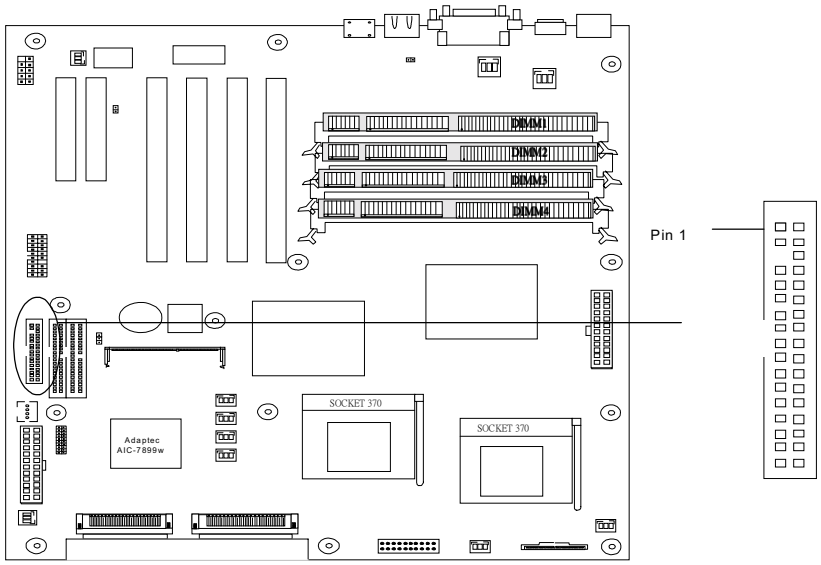
TDRCA ATX Power Connector

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)

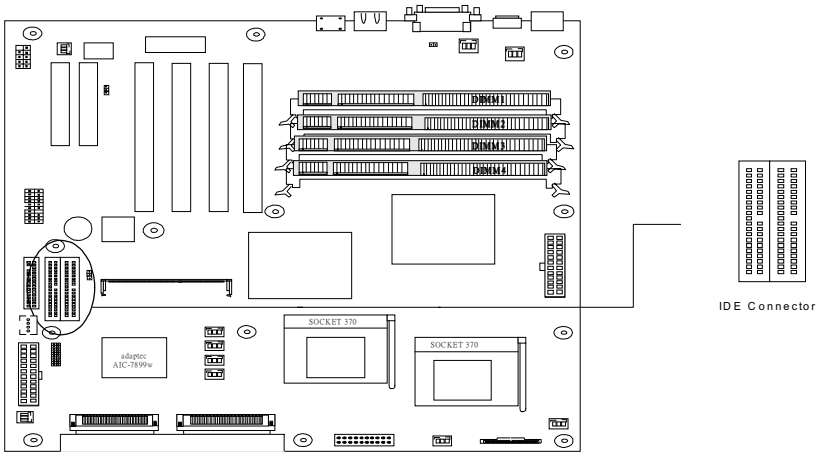
This connector supports the provided floppy disk drive ribbon cable. After connecting the single end to the board, connect the plug on the other end to the floppy drive.



TDRCA Floppy Device Connector

3. Primary/Secondary IDE connectors (ATA-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 boot-up (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).



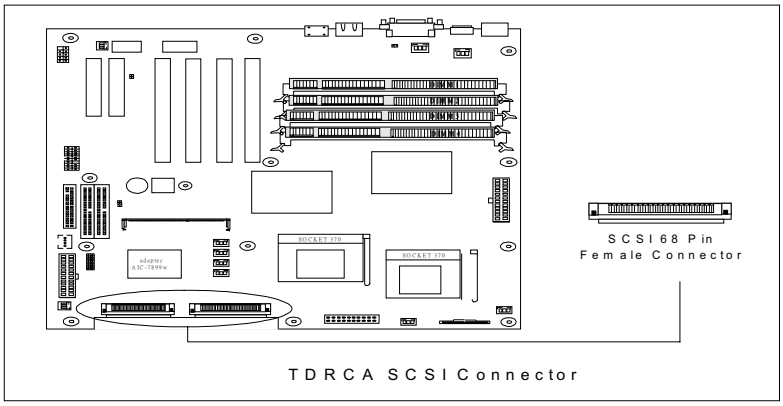
TDRCA IDE Connector

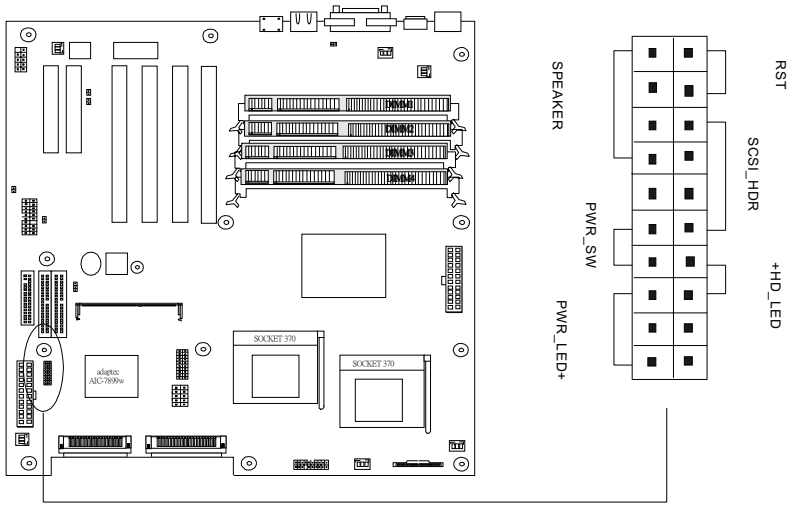
IMPORTANT

- **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**

4. Primary/Secondary SCSI connectors (Two 40-pin IDE)

The connectors support the provided 15-wire 68-pin 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. Please also refer to the onboard SCSI/LAN user's guide for detailed SCSI installation.





TDRCA Front Panel Switch Connector

Figure 4-1

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

5. 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.

6. 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.

7. 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.

8. Standby LED (2-pin SUS_LED)

This connector supplies 5V suspend power to a LED for monitoring the Stand-by status when OS enters power saving mode.

9. 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.

10. ATX Power Switch / Soft Power Switch (2-pin PWR_SW)

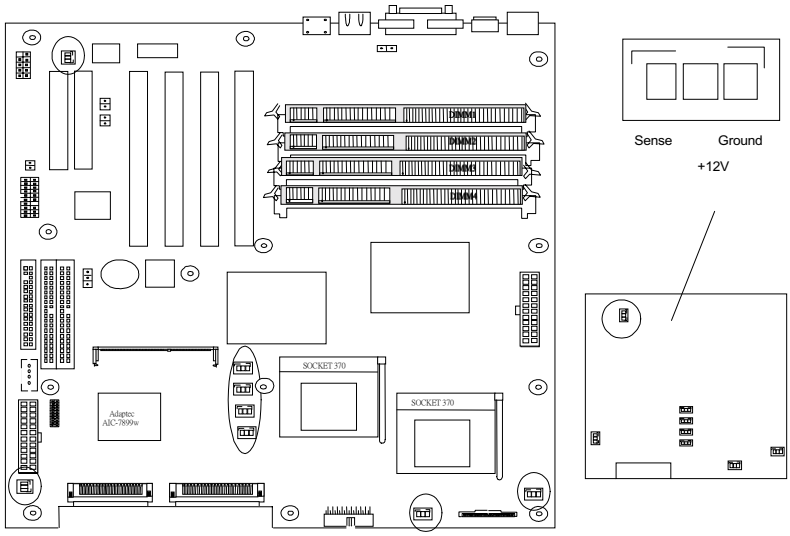
A momentary switch connected to these connector controls the system power. Pressing the button once will switch the system between *ON* and *SLEEP.* The system power LED shows the status of the system's power.

11. 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.

12. CPU and Aux Fan Connectors (4 3-pin FAN connectors) :

There are six 3-pin fan connectors in the TDRCA M/B. Two fans are used for CPU1 and CPU2 and two 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.



TDRCA CPU FAN Connector

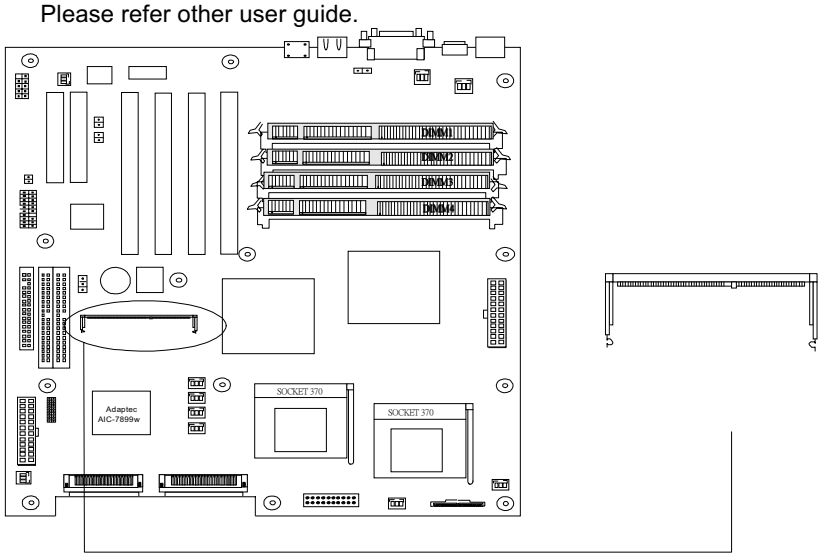
WARNING

- **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

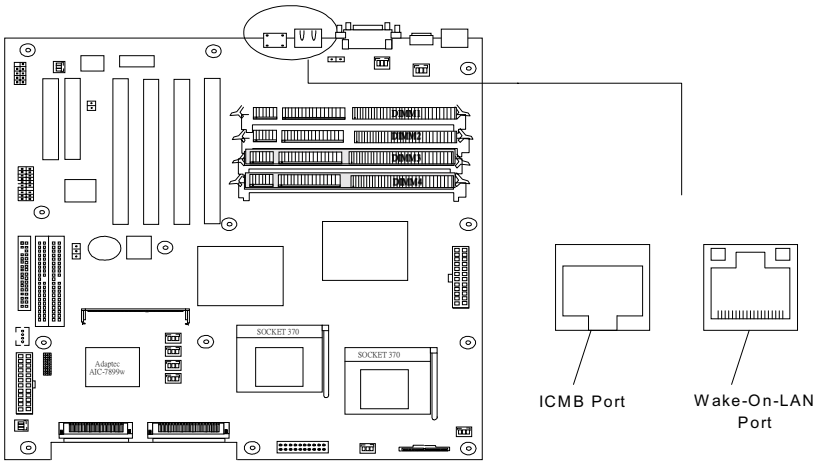
- The “Rotation” signal has to be used with fan specially designed with rotation signal.
- Only the fan marked CPU fan1, CPU2 fan2 can be monitored by BIOS.

13. ZCR Connector (Zero Channel Raid)
Please refer other user guide.



TDRCA ZCR Connector

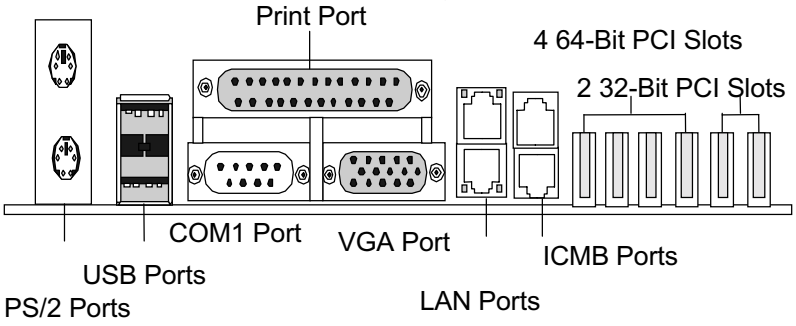
14. Wake-On-LAN/ICMB (3-pin WOL/WOM)
This connector connects to internal LAN/ICMB cards with a Wake-On-LAN/ICMB output. The connector powers up the system when a wakeup packet or signal is received through the LAN/ICMB card.



TDRCA Wake-On-LAN/ICMB Connector

IMPORTANT

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



TDRCA External Connectors

Figure 4-2

Item 14 through 21 are depicted in Figure 4-2 as above.

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

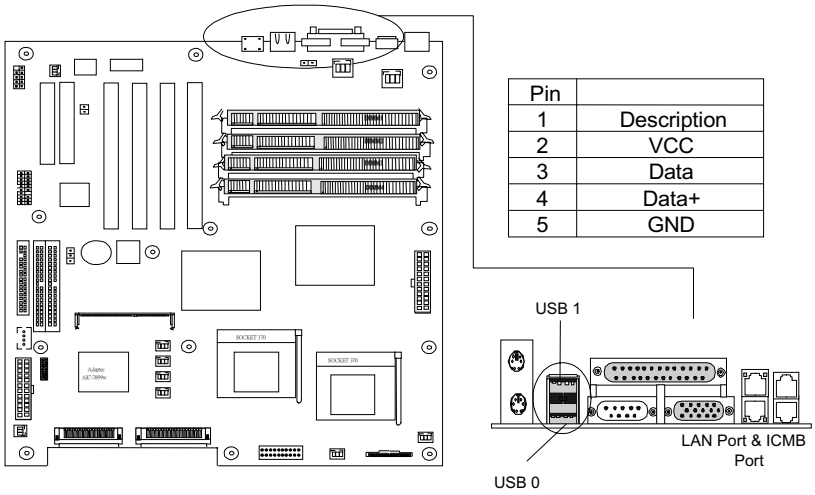
The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12.

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



TDRCA External 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

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 share with EMP port for BMC can be used for pointing devices or other serial devices. See the BIOS Setup.

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 AMIBIOS™ 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 AMIBIOS™ 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 AMIBIOS™ 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 AMIBIOS™ 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	Select a BIOS main category (Screen)
Right Arrow(→) Key	Select a BIOS main category (Screen)
Esc key	In the Sub-menu: Exit the sub-menu. In the BIOS main category: Quit Without saving changes.
Enter Key	Select the item. A pop-up selection will display on the screen and allows to set the item value.

Tab Key	Select the field
+ Key	Change the field value of the item
- Key	Change the field value of the item
F1 Key	General Help
F2 /F3 Key	Change the background color
F7 Key	Discard Changes
F8 Key	Load Failsafe Defaults
F9 Key	Load Optimal Defaults
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.

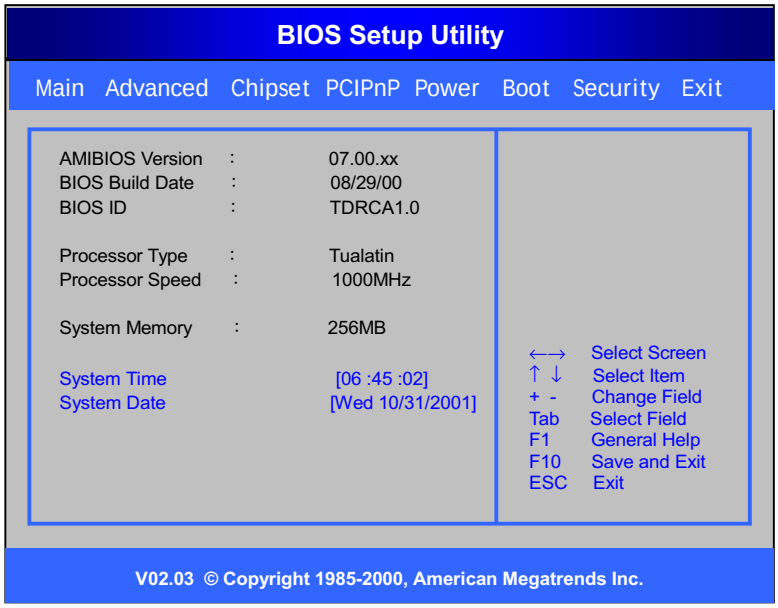
To display a sub menu
Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

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 AMIBIOS™ 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 AMIBIOS™ 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 AMIBIOS™ 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.

The main menu includes the following main setup categories.

Main Use this menu for basic system configurations, such as BIOS information, CPU information , installed memory size and system clock settings. See Section 2 for details.

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

Super IO Configuration	Use this option to configure your system's Input/output devices such as Serial port 1 /2 and parallel port. See Section 3 for details.
IDE Configuration	Use this option to configure your IDE device such as IDE HDDs , ATAPI devices. See Section 3 for details.
Floppy Configuration	Use this option to configure your floppy drives. See Section 3 for details.
Boot Settings Configuration	Use this option to configure the system during the system booting up. See Section 3 for details.

Chipset Use this option to change the values in the chipset registers and optimize your memory and VGA add-on card performance. See section 4 for details.

PCI PnP This option allows a user configuring PCI/Plug and Play devices. See section 5 for details.

Power Use this option to specify your settings for power management. See section 6 for details

Boot Use this option to specify your settings for device Boot sequence. See Section 7 for details.

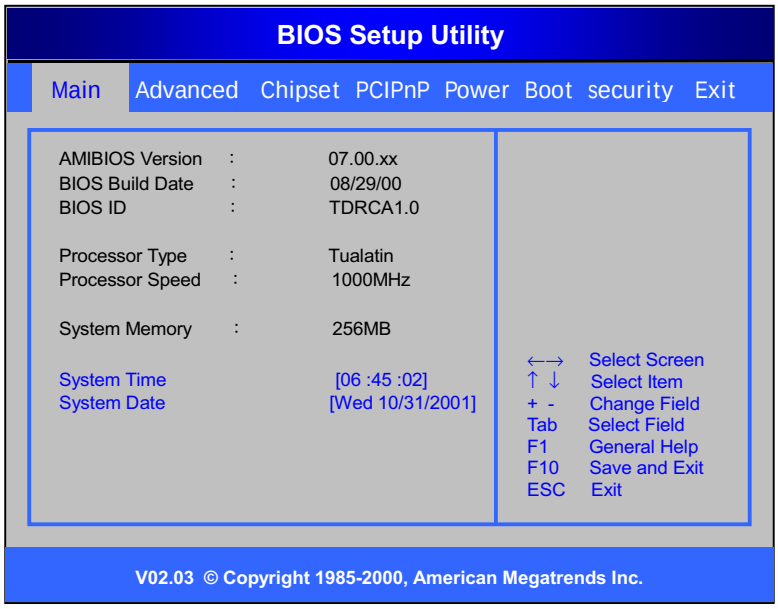
Security This option allows a user configuring the password level for security. See Section 8 for details.

Exit There are five options in this selection. See Section 9 for details.

Exit Saving Changes	Stores the all present setting values a user made in this time into CMOS.
Exit Discarding Changes	Continue to use previous CMOS setup values without making any change and exit setup.
Load Optimal Defaults	Provide optimum performance settings for all devices and system features.
Load Failsafe Defaults	Consist of the safest setup values for all setup parameters. Choose it when system is not able to boot or work properly. This selection should always work but do not provide optimal system performance characteristics.
Discard Changes	Continue to use previous CMOS setup values without making any change.

Main Menu

The <Main> menu will provide the TDRCA BIOS information and allow a user to set the clock. 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.



AMIBIOS Version

This field only displays the BIOS version of the TDRCA

BIOS Build Date

This field only displays the BIOS build date of the TDRCA

BIOS ID	This field only displays the BIOS ID of the TDRCA
Processor Type	This field will displays the type of present CPU
Processor Speed	This field will displays the maximum speed of present CPU
System Memory	This field will displays the installed memory size
System Time	Set the system time (*HH: MM: SS)*
System Date	Set the system date. Note that the 'Day' automatically changes After you set the date. (Weekend DD:MM:YY) YY: 1990~2099

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.

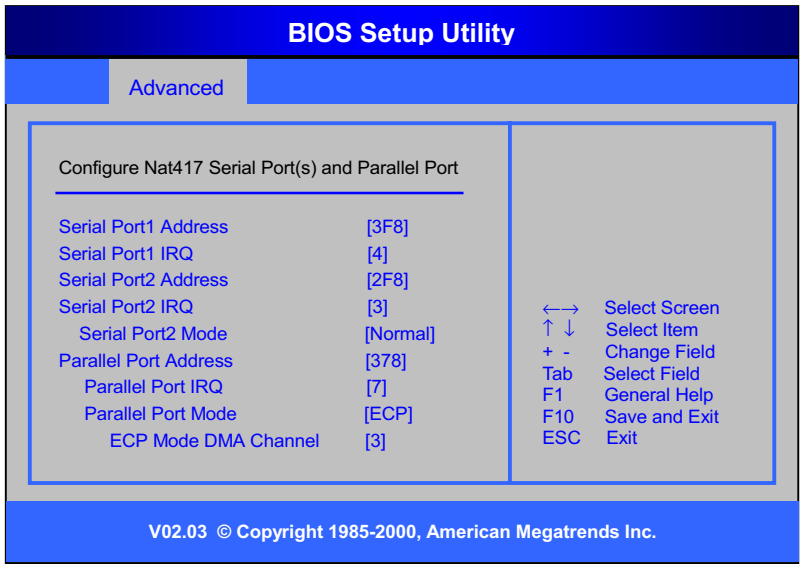
Advanced Menu

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

- ***Super IO Configuration***
- ***IDE Configuration***
- ***Floppy Configuration***
- ***Boot Configuration***
- ***Event log Configuration***
- ***System Health Monitoring Hardware***

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.

3-1:Super IO Configuration



Serial Port1 Address

This option specifies the base I/O port address of serial port 1.
The choices: *Disabled, 3F8* ***(Default)****, 2E8,3E8*

Serial Port 1 IRQ

This option specifies the IRQ# of the serial port 1.
The choices: *Disabled, 3, 4* ***(Default)***

Serial Port 2 Address

This option specifies the base I/O port address of serial port 2.
Note: If one port address is assigned to serial port 1, that address will be not able to resign to serial port 2.
The choices: *Disabled, 2F8* ***(Default)****, 3E8,2E8*

Serial Port 2 IRQ

This option specifies the IRQ# of the serial port 2.
The choices: *Disabled, 4, 3* ***(Default)***

Serial Port 2 Mode

This option specifies the operating mode for serial port 2. Set this option to Normal when the system doesn't use IR.
The choices: *Normal* ***(Default)****, Sharp-IR, SIR, Consumer*

Parallel Port Address

This option specifies the base I/O address of the parallel port on the motherboard.
The choices: *Disabled ,378****(Default)****,278,3BC*

Parallel Port IRQ

This option specifies the IRQ# used by the parallel port.
The choices:*7****(Default)****, 5*

Parallel Port Mode

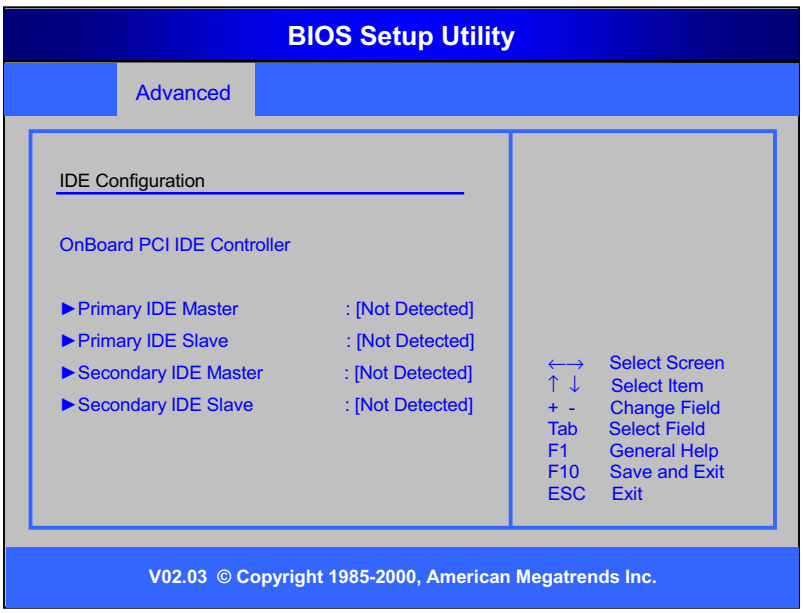
This option specifies the parallel port mode.
The choices: *ECP* ***(Default),****Normal, Bi-Directional, EPP*

Setting	Description
Normal	The normal parallel pro mode is used.
Bi-Directional	Use this setting to support bi-directional transfers on the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signal to provide asymmetric bi-directional data transfer driven by the host device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rate up to 2.5Mbit/s. ECP provides symmetric bi-directional communication ***(Default)***

ECP Mode DMA Channel

This option is only available if the setting for the "Parallel Port Mode" option is "ECP". This option sets the DMA channel used by parallel port.
The choices: *0,1,2,3* ***(Default)***

3-2:IDE Configuration

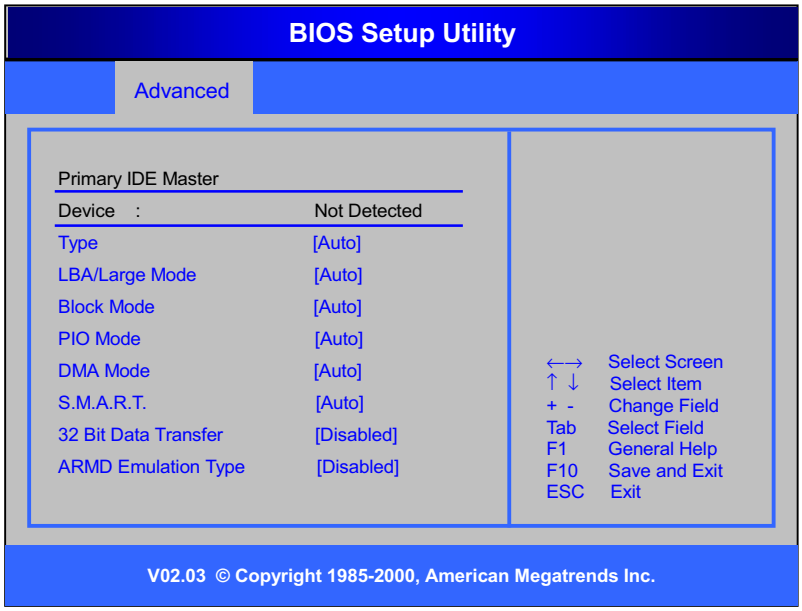


Onboard PCI IDE Controller

DISABLED: Disables the integrated IDE Controller.
Primary: enables only the Primary IDE Controller.
SECONDARY: enables only the Secondary IDE Controller.
The choices: Disabled, Primary, Secondary, Both***(Default)***

Primary /Secondary IDE Master/Slave

While entering setup BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices



Device This filed displays the device type in the specific IDE channel

LBA/Large Mode This filed shows if the device in the specific IDE channel supports LBA mode

Block Mode This filed displays the Block mode of the device in the specific IDE channel

PIO Mode This filed displays the PIO mode of the device in the specific IDE channel

Async DMA This filed displays the DMA mode of the device in the specific IDE channel

Ultra DMA This filed displays the DMA mode of the device in the specific IDE channel

S.M.A.R.T This filed shows if the device in the specific IDE channel supports S.M.A.R.T

Type The field allows a user to set the device type. RIOWORKS recommend a user to set the option "Auto"
The choices: *Auto (Default), Not Installed/CD-ROM, ARMD (**A**TAPI **R**emovable **M**edia **D**evice)*

LBA/Large Mode Disabled: Disables LBA Mode
Auto: Enables LBA Mode if the device supports it and the device is not already formatted with LBA mode disabled.
The choices: *Disabled **(Default)**, Auto*

Block Mode Disabled: The data transfer from and to the device occurs one sector at a time.
Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.
The choices: *Disabled **(Default)**, Auto*

PIO Mode This option allows a user to select the PIO mode.
The choices: *Auto **(Default)**, 0, 1, 2, 3, 4*

DMA Mode The choices: *Auto **(Default)**, SWDMA0, SWDMA1, SWDMA2, MWDMA0, MWDMA1, MWDMA2, UDMA0, UDMA1, UDMA2, UDMA3, UDMA4.*

S.M.A.R.T Set this option "Enabled" to permit BIOS to use the

SMART (Self-Monitoring Analysis and Reporting Technology) protocol for reporting server system information over a network.
The choices: *Auto* ***(Default)****, Disabled, Enabled*

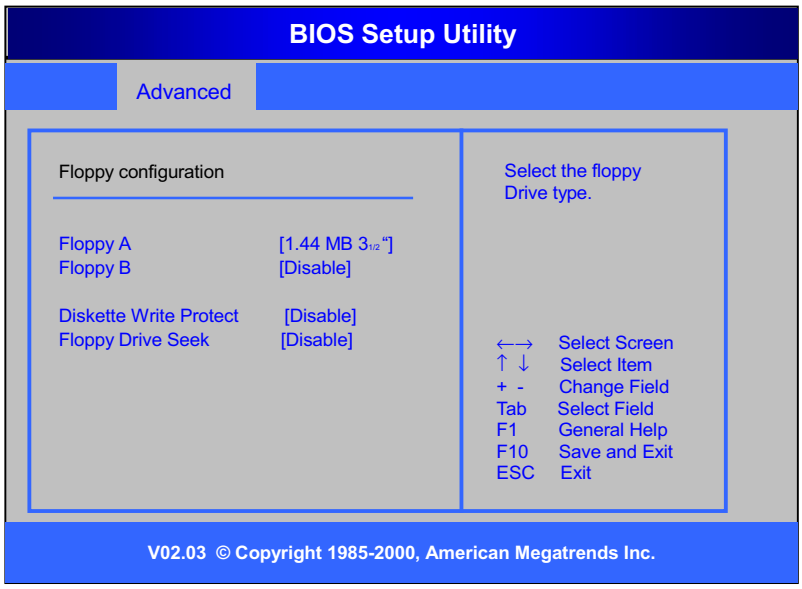
32 Bit Data Transfer

This option allows a user to set if enable 32Bit data transfer.
The choices: *Disabled* ***(Default)****, Enabled*

ARMD Emulation Type

This option allows a user to select ARMD device emulation type by BIOS.
The choices: *Auto* ***(Default)*** , *Floppy, Hard Disk*

3-3:Floppy Configuration



Floppy A/ Floppy B

This option allows a user to select the floppy drive type
The choices for floppy A: *Disabled, 360KB, 1.2MB, 720KB, 1.44MB* ***(Default),****2.88MB*
The choices for floppy B: *Disabled* ***(Default),****, 360KB, 1.2MB, 720KB, 1.44MB, 2.88MB*

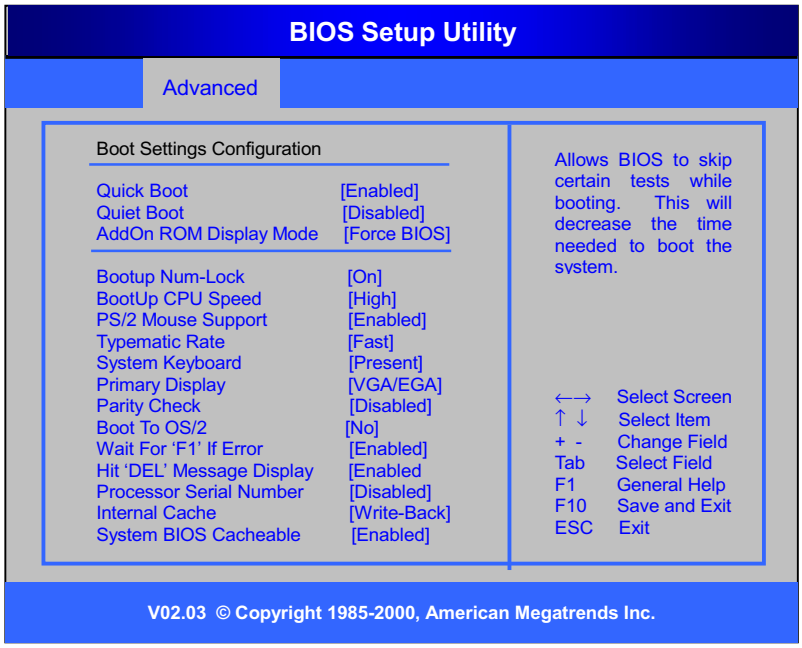
Diskette Write Protect

This option allows a user to set if enable device write protection. This will be effective only if the device is accessed through BIOS
The choices*: Disabled* ***(Default)****, Enabled*

Floppy Drive Seek

Set this option to " Enabled" to specify that floppy drive A: will perform a Seek operation at a system boot.
The choices*: Disabled* ***(Default)****, Enabled*

3-4:Boot Settings Configuration



Quick Boot

Set this option to Enabled to instruct BIOS to boot quickly when the computer is powered on. Only check
The choices: *Disabled, Enabled****(Default)***

Quiet Boot

Disabled: Displays normal POST messages.
Enabled: Displays OEM Logo instead of POST messages.
The choices: *Disabled* ***(Default)****, Enabled*

Add On ROM Display Mode

This option allows a user to force the system to shown some important configuration message of the add-on

adapter card when the selection " Initial Display Mode" is set " Silent"
The choices: *Force BIOS**(Default)**, Keep Current*

Boot up NUM-Lock

Set this option "On" to turn the Num Lock key On at system boot.
The choices: *On **(Default)**,Off.*

BootUp CPU Speed

This option allows a user to set the CPU speed during booting up the system
The choices*: High **(Default)**,Low.*

PS/2 mouse support

Set this option "Enabled" to allow BIOS support for a PS/2-type mouse.
The choices*: Enabled **(Default)**,Disabled.*

Typematic Rate

This option sets the rate at which characters on the screen repeat when a key is pressed and held down.
The choices: *Fast**(Default)**,Slow.*

System keyboard

This option does not specify if a keyboard is attached to the computer. Rather, it specifies if error message are displayed if a keyboard is not attached. This option permits you to configure workstation with no keyboards.
The choices: *Present**(Default)**,Absent.*

Primary Display

This option configures the type of monitor attached to the computer.
The choices: *Monochrome, CGA40x25, CGA80x25, VGA/EGA* **(Default)**, or *Absent*.

Parity check

Set this option to "Enabled" to check the parity of all system memory.

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

Boot to OS/2

Set this option "Yes" if running OS/2 operating system and using more than 64 MB of system memory on the motherboard.
The choices: *Yes, No* ***(Default)****.*

Wait for 'F1' If Error

BIOS POST runs system diagnostic tests that can generate a message followed by:

Press <F1> to Continue

If this option is set to "Enabled", BIOS waits for the user to press <F1> before continuing. If this option is set to "Disabled", BIOS continue the boot process with waiting for <F1> to be pressed.
The choices*: Enabled* ***(Default)****,Disabled.*

Hit 'DEL' message Display

Set this option to "Disabled" to prevent from appearing when the system boots.

Hit <DEL> if you want to run Setup

The choices*: Enabled* ***(Default)****,Disabled.*

Internal Cache

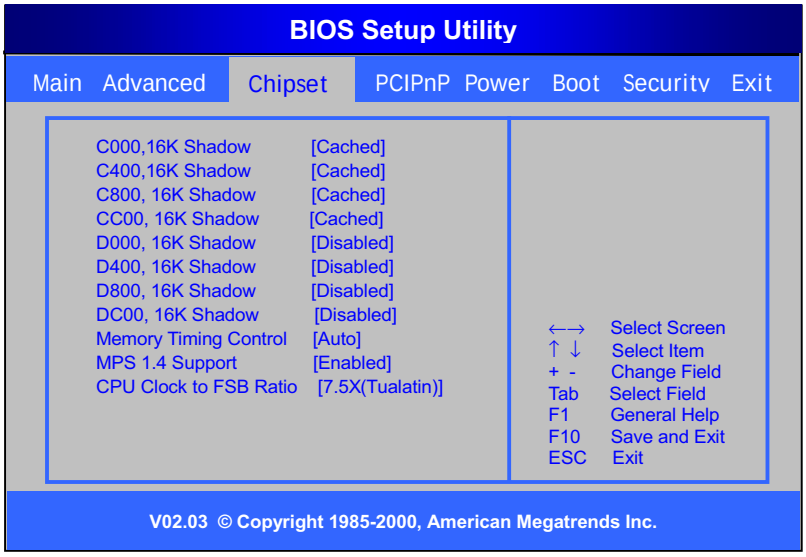
This option sets the type of caching algorithm used by the L1 internal cache memory on the CPU.
The choices: *Write-Back* ***(Default)****, Write-Thru, Disabled, Reserved.*

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 choices: *Enabled* ***(Default)*** *, Disabled*

Chipset Menu

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. 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 system is not longer to boot again or wrong operations.



Note

- Such a scenario may occur if your system has been mixed different speed DRAM chips. A greater delay may be required to preserve the integrity of the data held in the slower memory chips.

C000,16K/ C400, 16K/ C800, 16K/ CC00,16K/ Shadow

This item controls the location of the contents of video ROM. The choices:

Setting	Description
Enabled	The contents of the video ROM area (C0000h – C7FFFh) are written to the corresponding address in RAM.
Cached (Default)	The contents of the video ROM area (C0000h – C7FFFh) are written to the corresponding RAM address and can be read from or written to cache memory.
Disabled	The video ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

D000,16K/ D400,16K/ D800,16K/ DC00,16K Shadow

These options enable shadowing of the contents of the ROM area in the option title. The choices:

Setting	Description
Enabled	The contents of the ROM area are written to the corresponding address in RAM for faster execution.
Cached	The contents of the ROM area are written to the corresponding RAM address and can be read from or written to cache memory.
Disabled (Default)	The ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

Memory Timing Control

This option allows a use to set if let BIOS to program memory timing from SPD data.
Note: Please refer to the documentation of your SDRAM module before you set this option to “Manual”. Otherwise, it may cause your system is not able to boot-up or is not stable.
The choices: *Auto (Default), Manual*

MPS 1.4 Support

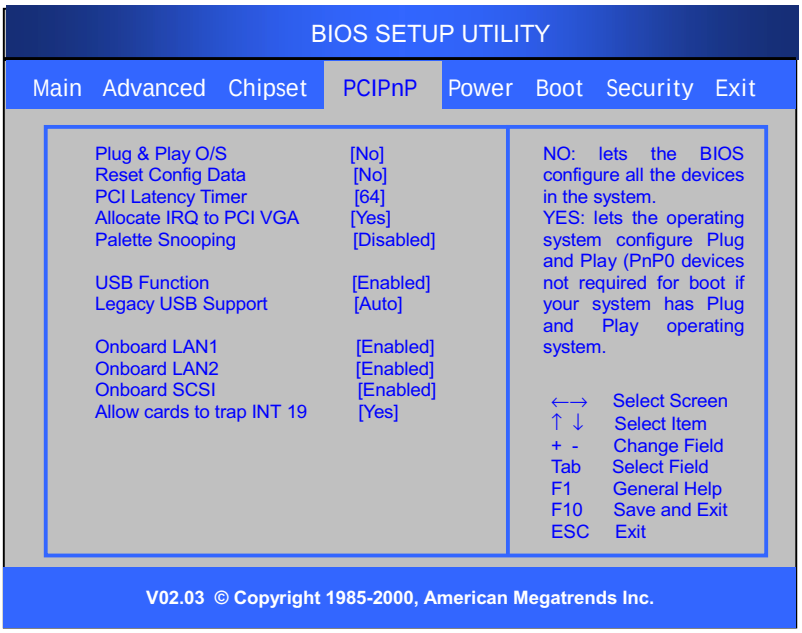
This option allows a user enabling the MP(Multi Processor)system support 1.4 version.
The choices: *Enabled (**Default),** Disabled*

CPU Clock of FSB Ratio

This option will depend on what CPU a user uses.
For the CPUs which the ratio is locked, the choice will only display “ Locked”. The ratio of CPU will be fixed a value
For the CPUs which ratio is not locked, there are several choices: 7.5x(Tualation)**(Default)**, 8.0x, 8.5x, 9.0x, 9.5x, 10x, 10.5x, 11.0x, 11.5x and 12.0x.

PCI PnP Menu

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.



Plug & Play O/S

Set this option to “Yes” to inform AMIBIOS that the operating system can handle Plug and Play (PnP) devices.
The choices: *No (**Default),** Yes*

Reset Config Data

No: does not force the PnP data to be cleared during boot up the system.
Yes: Clear PCI/PnP configuration data stored in flash on next system boot up
The choices: *No (**Default),** Yes*

PCI Latency Timer

This option specifies the latency timings (in PCI clocks) for PCI devices installed
Leave on default setting for the best compatibility.
The choices: *32/ 64**(Default)**/ 96/ 128/ 160/ 192/ 224/ 248*

Allocate IRQ to PCI VGA

Set this option to “Yes” to allocate an IRQ to the VGA device in the PCI bus.
The choices: *Yes (**Default),** No*

Palette Snooping

When this option 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.
Disabled-Data read and written by the CPU is only directed to PCI VGA device’s palette registers.
Enabled- Data read and written by the CPU is directed to the both the PCI VGA device’s palette registers and ISA VGA device palette registers, permitting the palette registers of both devices to be identical.
The choices: *Enabled, Disabled **(Default)***

USB Function

Set this option "*Enabled*" to enable USB (Universal Serial Bus) support.
The choices: *Enabled**(Default)**, Disabled*

Legacy USB Support

This item allows a user enabling USB Keyboard /Mouse under DOS mode and some OS that does not support USB devices.
The choices: *Disabled, Enabled, Auto**(Default)***

Onboard LAN1/LAN2

This option allows a user to set if enabled onboard LAN1/ LAN2 function.
The choices: *Enabled (**Default),** Disabled*

Onboard SCSI

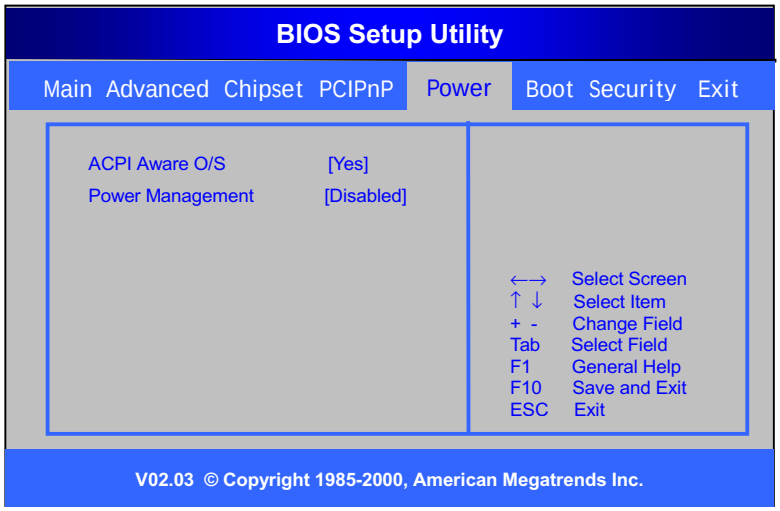
This option allows a user to set if enabled onboard SCSI1/SCSI2 function.
The choices: *Enabled (**Default),** Disabled*

Allow Cards to Trap INT 19

This option allows a user to add a option to boot function.
The choices: Yes, No ***(Default)***

Power Menu

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



ACPI Aware O/S

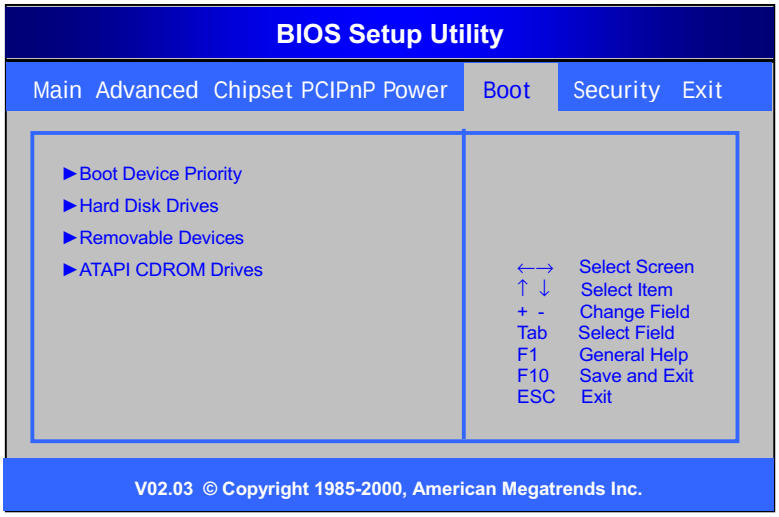
This field allows you to set if permit the operating system that has built-in the Advanced Configuration and Power Management (ACPI) feature to detect the ACPI function in the system.
The choice: *Yes**(Default)**, No*

Power Management

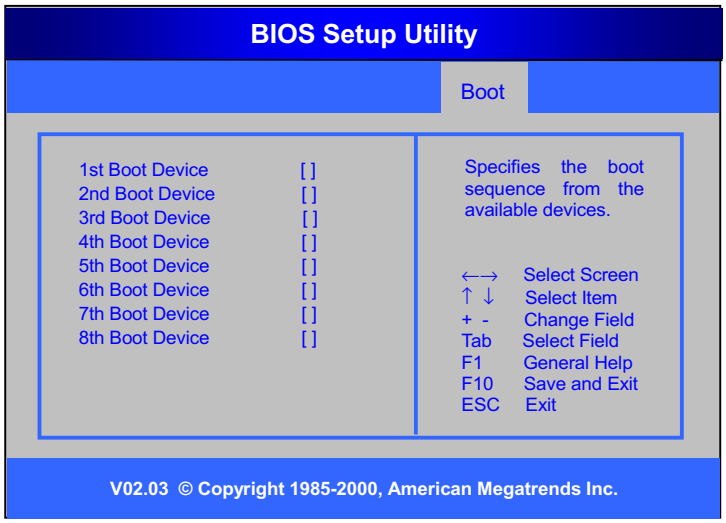
Set this option to *Enabled* to enable the chipset power management and APM (Advanced Power Management) features.
The choices: *Enabled, Disabled* ***(Default)***

Boot Menu

The “Boot” Menu allows a user to select among the five possible types of boot devices listed using the up and down arrow key. By using the <+> or <Space> key, you can promote devices and by using the < - > key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on. From this menu, the information of hard disk, removable device and ATAPI CDROM device can also be viewed.



7.1:Boot Device Priority



1ST /2nd /3rd/4th /5th/6th/ 7th/8th Boot Device

This six fields determine which type of device the system attempt to boot from after AMIBIOS POST complete. If the first device is not a bootable device, system will seek for next one.

The choices for 1st Boot device: *Removable Dev. **(Default)**, Hard Drive, ATAPI CD-ROM, SYM53C8xx/ Intel UNDI PXE/Intel UNDI PXE*

The choices for 2nd Boot device: *Removable Dev. Hard Drive, ATAPI CD-ROM**(Default)**, SYM53C8xx/ Intel UNDI PXE/Intel UNDI PXE*

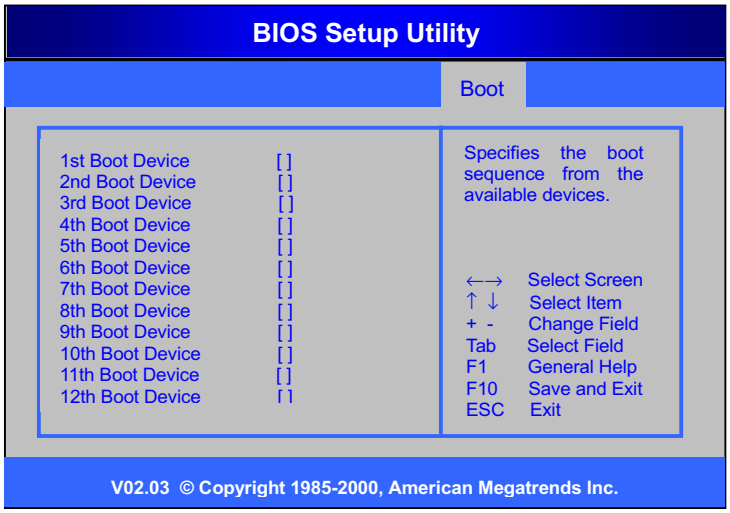
The choices for 3rd Boot device: *Removable Dev. Hard Drive**(Default)** ,ATAPI CD-ROM, SYM53C8xx/ Intel UNDI PXE/Intel UNDI PXE*

The choices for 4th Boot device: *Removable Dev. Hard*

*Drive ,ATAPI CD-ROM, SYM53C8xx**(Default)** / Intel UNDI PXE/Intel UNDI PXE*

The choices for 5th Boot device: *Removable Dev. Hard Drive ,ATAPI CD-ROM, SYM53C8xx / Intel UNDI PXE **(Default)**Intel UNDI PXE*
The choices for 5th Boot device: *Removable Dev. Hard Drive ,ATAPI CD-ROM, SYM53C8xx / Intel UNDI PXE Intel UNDI PXE **(Default***

7.2.Hard Disk Drives



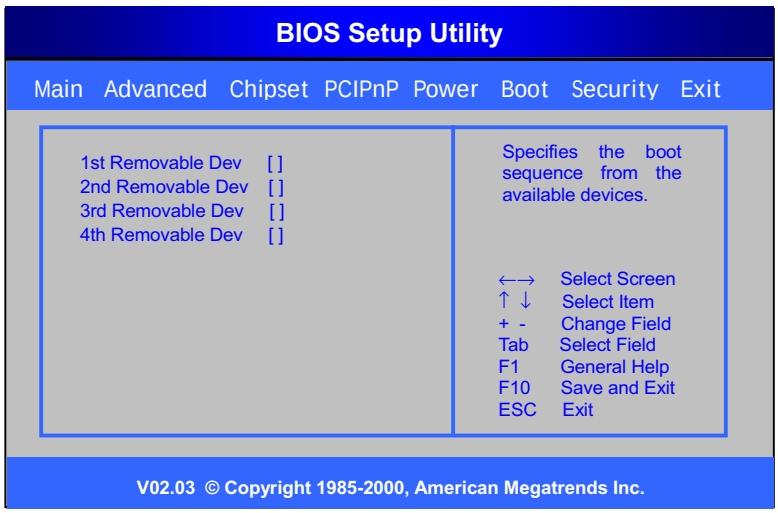
1st Boot Device This field only displays the information of 1st Boot Device

2nd Boot Device This field only displays the information of 2nd Boot Device

3rd Boot This field only displays the information of 3rd Boot

Device	Device
4th Boot Device	This field only displays the information of 4th Boot Device
5th Boot Device	This field only displays the information of 5th Boot Device
6th Boot Device	This field only displays the information of 6th Boot Device
7th Boot Device	This field only displays the information of 7th Boot Device
8th Boot Device	This field only displays the information of 8th Boot Device
9th Boot Device	This field only displays the information of 9th Boot Device
10th Boot Device	This field only displays the information of 10th Boot Device
11th Boot Device	This field only displays the information of 11th Boot Device
12th Boot Device	This field only displays the information of 12\th Boot Device

7.3.Removable Devices



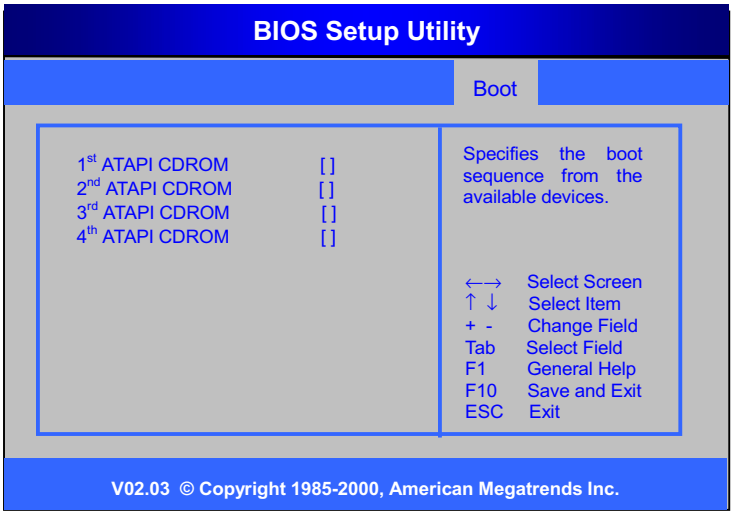
1st Removable — This field only displays the information of 1st Removable Device.

2nd Removable — This field only displays the information of 2nd Removable Device.

3rd Removable — This field only displays the information of 3rd Removable Device.

4th Removable — This field only displays the information of 4th Removable Device.

7.4. ATAPI CDROM Drives



1st ATAPI CDROM — This field only displays the information of 1st Removable Device.

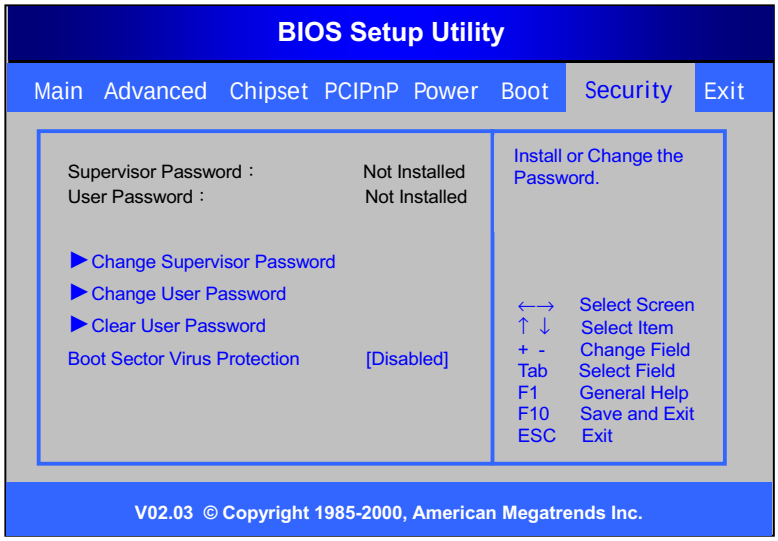
2nd ATAPI CDROM — This field only displays the information of 2nd Removable Device.

3rd ATAPI CDROM — This field only displays the information of 3rd Removable Device.

4th ATAPI CDROM — This field only displays the information of 4th Removable Device.

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.



Change Supervisor Password

You can enter and change the options of the setup menus."

Type the password, up to six 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 or press <Enter> key to disable

this option.

User Access Level

When Supervisor Password is installed, this option will be available.
This option allows a user to set the user access level. “Limited” allows only limited field to be changed such as Date and Time; “ No access” prevents User Access to the Setup Utility; “View only” allows accessing to the Setup Utility but the field can not be changed; “ Full” give a user full access right in the BIOS Setup.
The choices : *No Access, View Only, Limited, Full* ***Default***

Change 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.

Type the password, up to six 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.

Clear Password

To disable a password, just press <Enter> when you are prompted. 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 user 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.

Unattended Start

"Enabled" allows the host system to complete the boot process without a password. The keyboard will remain locked until a password is entered. A password is required to boot from a diskette.
The choices: *Disabled* ***(Default)****, Enabled*

Password Check

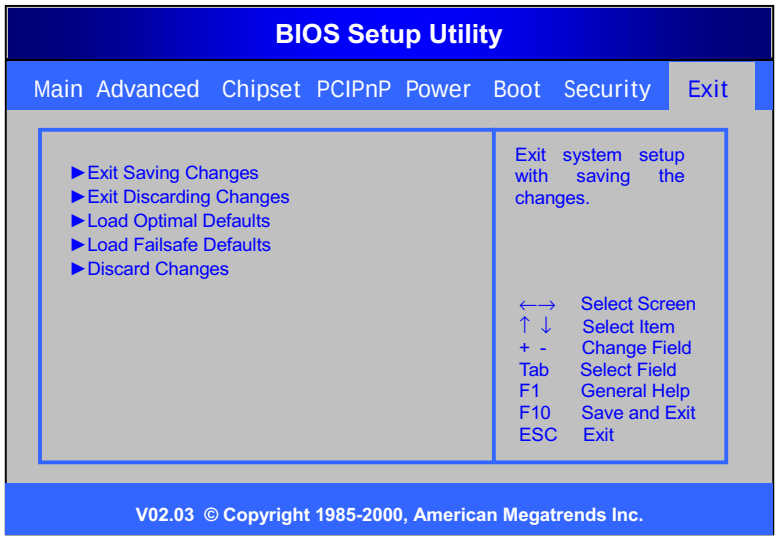
" Setup" will check password while invoking setup; "Always" will check the password while invoking setup a well as on each boot
The choices: Setup ***(Default)****, Always*

Boot Section Virus Protection

This item allows a user to enable/disable the function of the virus protection. Any action attempt to modify the data of boot sector during POST will be forbidden if this function is enabled.
The choices: *Disabled* ***(Default)****, Enabled*

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



Exit saving Change

Pressing <Enter> on this item asks for confirmation:

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 Discarding Change

This allows you exiting Setup without changing any 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.

Pressing <Enter> on this item asks for confirmation:

Load Optimal 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.

Load Failsafe 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, minimum-performance system operations

Discarding Change

This allows you not changing any previous setting values in CMOS. The previous selections remain in effect.
Pressing <Enter> on this item asks for confirmation:

 NOTE

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

Chapter 3
BIOS Flash Upgrade Utility

This chapter briefly discusses the AMI BIOS Flash Upgrade utility, with instructions to guide you through updating an AMI 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.
F82725.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 (amiflash.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 AMI 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.

 NOTE

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

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

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

3. The cursor should be opposite **File Name to Program**
4. Type the name of the new BIOS file (e.g., *newbios.bin*), and press ↵.
5. At the bottom of the menu, this prompt appears:

   Do You Want to Save Bios (Y/N)
6. If you **DO NOT** wish to save the old BIOS, type **N**. Then move to step 8 If you **DO** wish to save the old BIOS, respond **Y**.

7. In the **File Name to Save** field, type a file name for the old BIOS (for example, *oldbios.bin*), and press <ENTER> key
   Your old BIOS is saved in a file as named, in the default drive and directory (in this example, on the A drive). Press <ENTER> key

8. Then the program prompts you

   Are you sure to program (y/n)

You will need to make a selection

No	Yes
If you **DO NOT** wish to update the BIOS, type **n**. The program exits to the command line. Skip the following steps in this section and go directly to the next section.	If you **DO** wish to update the BIOS, type **y**. 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 amiflash /? and press <ENTER> key.

```
        amiflash 7.08  (C)AMI Software 1999 All Rights Reserved
Usage:  AMIFLASH [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:  AMIFLASH 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:
amiflash *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:
amiflash *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:
amidflash /Pn *oldbios.bin*

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

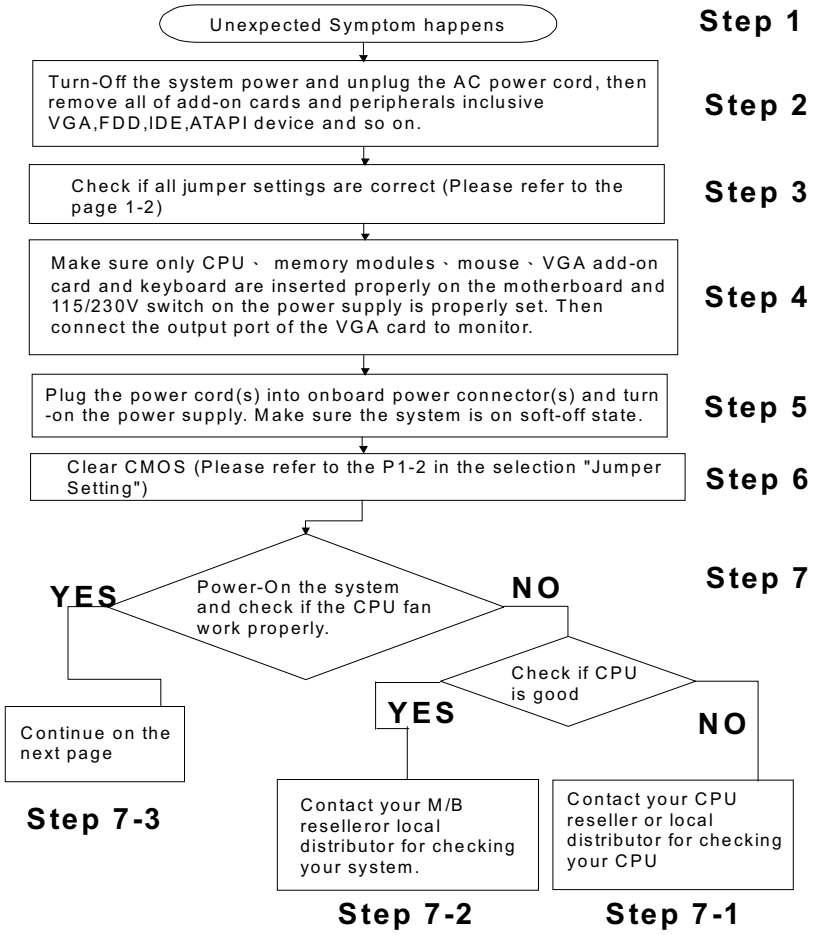
Clear Data

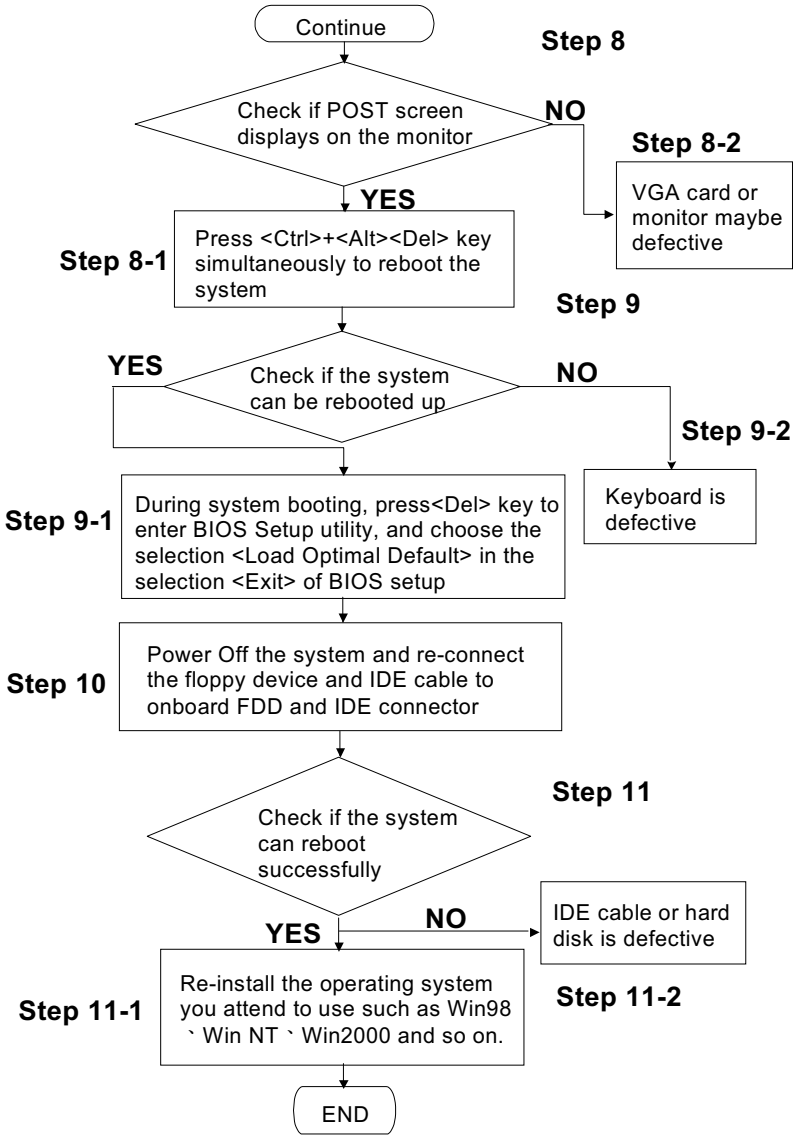
The Award flash utility version 7.08 and above has three additional command line parameters:
/CC Clear CMOS.
/CP Clear PnP data (ESCD)
/CD Clear DMI data

APPENDIX A

Troubleshooting

Toubleshooting Procedure




Continue
Step 8
Check if POST screen displays on the monitor
NO
Step 8-2
VGA card or monitor maybe defective
YES
Step 8-1
Press <Ctrl>+<Alt><Del> key simultaneously to reboot the system
Step 9
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 selection <Exit> of BIOS setup
Step 10
Power Off the system and re-connect the floppy device and IDE cable to onboard FDD and IDE connector
Step 11
Check if the system can reboot successfully
YES
NO
IDE cable or hard disk is defective
Step 11-1
Re-install the operating system you attend to use such as Win98 、Win NT、Win2000 and so on.
Step 11-2
END

WARNING

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

Symptom checking List

Symptom	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 SDRAM DIMM module is inserted into SDRAM DIMM socket properly. 2. Check if different speed memory modules are mixed and used in the TDRCA. Verify the BIOS setup is configuration for the fastest speed of SDRAM DIMM used. RIOWORKS recommend always use the same speed RAM in the system. 3. Make sure your memory module(s) is compliant with PC100 or PC1330 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											
Onboard IDE 0	Master										
	Slave										
Onboard SCSI 1											
Onboard SCSI 2											

Power Supply		Watt	Model Number	
Other Devices				
Operating system				
Symptom Description:				
Name:				
Contact email address:				