

# **KV-DDR**

## **Motherboard**

### **User's Manual**

**Product Name: KV-DDR**  
**Manual Revision: English, 1.0**

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#### **Important data protection information**

You should back up all data before installing any storage peripheral. We are not responsible for any loss of data resulting from the use, disuse or misuse of this.

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## Chapter 1. Introduction

### 1.1 Product Overview

Thank you for purchasing the **KV-DDR** motherboard. This motherboard utilizes **VIA**'s latest technology, namely **KT266 VT8366 & VT8233** chipset. It supports the new generation of high-speed DDR266 DRAM and features a new high-speed V-Link bus that doubles the communication bandwidth between the North and South Bridge to 266MB per second.

We have conducted a motherboard compatibility test with a variety of hardware and software, such as CPUs, memory, display cards, CD ROMs, Novell, MS Office....etc and compliance with Year 2000.

We have set high standards on our quality control, with absolute confidence, we believe this product is the wisest choice.

This manual is composed of four sections. The first section is the introduction of this motherboard, and the second section explains the proper procedure to setup the motherboard, the third section provides information on how to setup the CMOS. The last section states the installation for driver and utility.

### 1.2 Features

- Wake On LAN/Modem.
- Integrated AC-97 Audio.
- Modem Remote Ring On.
- Support NCR SCSI BIOS.
- Support Ultra DMA 33/66/100.
- Integrated Hardware Monitoring

- Support 200/266MHz FSB frequency.
- Support AGP slot for AGP (1X/2X/4X) graphics card.
- Support Advanced Configuration Power Interface (ACPI).
- BIOS Green feature function, and "Plug & Play" Flash ROM.
- Support Desktop Management Interface (DMI) through BIOS.
- RTC Wake Up Alarm: Program the date/time to wake up your system.
- Both the BIOS and hardware levels of the motherboard meet PC '99 compliant.

### 1.3 Specifications

- CPU** : - Supports AMD Socket A (Socket 462), Athlon and Duron 200/266MHz Front Side Bus.
- Chipset** : -VIA VT8366 & VT8233.
- DIMM** :  
 -Supports 2.5V PC1600/2100 (DDR200/266)-compliant DDR SDRAM in four 184-pin sockets, which can support memory sizes of 64/128/256/512 MB/1 GB modules.  
 -Supports 8-banks up to 4 GB DRAMs for register DDR SDRAM module.  
 -Supports 6-banks up to 3 GB DRAMs for unbuffered DDR SDRAM module.  
 -Optional bank-by-bank ECC (single-bit error correction and multi-bit error detection) or EC (error checking only) for DRAM integrity.
- IDE** :  
 -Dual channel PIO and PCI Bus Master IDE ports support up to 4 EIDE devices for HDD or CD-ROM  
 -Supports PIO Mode 4  
 -Supports Multiword DMA Mode 0, 1, 2  
 -Supports Ultra DMA 33/66/100
- RAID** :  
 -Supports Striping (RAID 0) or Mirroring (RAID 1)  
 -Compatible with Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and Fast ATA-2 drives supporting multi-word DMA  
 -PCI Plug-n-Play, PCI Interrupt sharing and coexists with motherboard IDE controllers  
 -Supports concurrent dual IDE controller operation  
 -Supports IDE bus master operation  
 -Utilizes FastBuild™ automenu from BIOS  
 -Mirroring supports automatic background rebuilds  
 -Complies with PCI v2.1 Local Bus standard  
 -Compliant with PCI IDE Bus Master standard
- IR Port** :  
 -One IrDA/ASKIR compatible Infrared interface port.  
 (Cable optional)
- BIOS** :  
 -Award BIOS with built-in Anti-Virus, ACPI, DMI support, and green function (Plug-and-Play BIOS)  
 -Supports CD-ROM/HD/SCSI/Floppy/LS120/ZIP100 and LAN boot up  
 -Supports NCR SCSI BIOS.
- I/O Devices** :  
 -One FDD control port supports two of the 5.25" or 3.5" floppy drives up to 2.88 MB.  
 -Two high-speed 16550 UART compatible serial ports  
 -One parallel ports with SPP/ECP/ EPP compatibility.  
 -One PS/2 mouse port  
 -One PS/2 Keyboard connector
- USB Ports** :  
 -Six function ports support up to 127 peripheral devices. ( Cable optional )  
 -USB v1.1 and Intel Universal HCI v1.1 compatible.
- Sound** :  
 -AC '97 Rev 2.1 compliant  
 -16-bit Stereo Full-Duplex Codex  
 -Variable Sampling Rate (VSR) up to 48kHz in 1Hz resolution  
 -3D Stereo expansion for simulated surround

- 4 stereo and 2 mono analog line-level inputs
- MIC level input switchable from two sources
- Second line-level output with volume control
- 3.3V, 5V or split analog/digital power supply
  - External Audio Amplifier Control
  - Power management support
  - Low Power consumption mode
  - Stereo Headphone Amplifier

**LAN** :  
 -High performance PCI master interface with scatter / gather and bursting capability  
 -1 / 10 / 100 MHz full and half duplex operation  
 -Separate 2K byte FIFOs for receive and transmit  
 -Software controllable power down

**Dimension** : - 305 mm x 230 mm ATX Form factor

**Operating System** :-Supports Windows 95/98/ME/2000, Windows NT, MS-DOS V6.22, OS/2, Novell, Unix, SCO UNIX...

**ATX Power** :  
 -Supports Modem remote Ring-On function  
 -Supports software power off function  
 -Supports RTC Wake-Up.  
 -Supports Wake On LAN.  
 -Supports Wake On Modem.

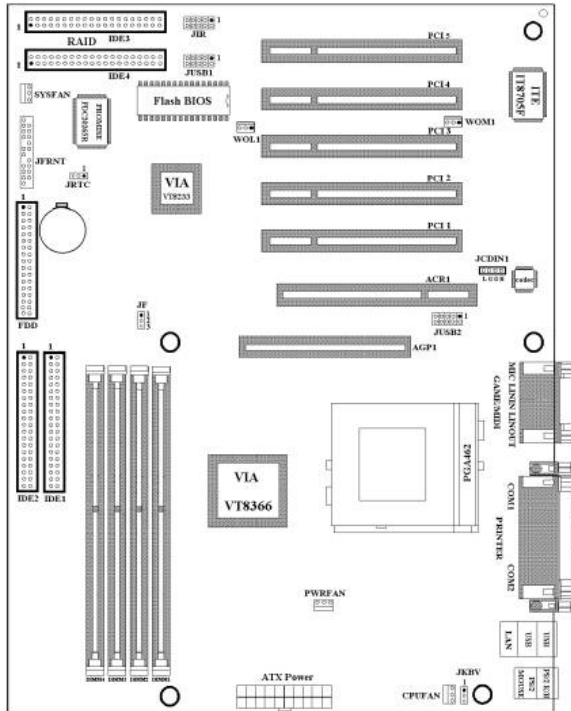
**Expansion Slots** :  
 -Five 32-bit PCI expansion slots. PCI v2.2 compliant. PCI1, PCI2, PCI3 and PCI4 support bus master operation, PCI5 supports bus slave operation.  
 -One 32-bit AGP expansion slot. AGP v2.0 compliant.  
 -One Advanced Communications Riser (ACR) slot for ACR LAN card or Modem Riser card.

## 1.4 Content

The motherboard box contains the following items:

- One Motherboard
- Two IDE Ribbon Cables
- One Floppy Ribbon Cable
- One CD Driver Disk
- Two Driver Diskettes
- User's Manual

## 1.5 MotherBoard Layout



Note:

1. The motherboard supports bus master operation for PCI1, PCI2, PCI3, PCI4 and RAID IDE. The PCI5 supports bus slave operation. If your PCI card is bus master operation, please install it to PCI1 ~ PCI4.
2. The ACR1 slot supports for ACR LAN card or Modem Riser card. You can install Modem Riser card in front point of the ACR1 slot to get Modem function.

## Chapter 2. Hardware Setup

### 2.1 Installation Procedure

1. Jumper settings (BIOS and CPU)
2. Installation of CPU
3. Installation of Memory
4. I/O Connections & Panel Connections

#### 2.1.1 Jumper Settings

In this manual, (1-2) represents the first and second pins of the jumper. (2-3) represents the second and third pins of the jumper. On the motherboard, you will see two sets of jumpers with different color jumper caps:

Yellow Jumper Caps : Sets the Function of Flash CMOS     JRTC

Red Jumper Caps : Sets the FSB frequency of CPU     JF  
                                Sets the Keyboard Voltage             JKBV

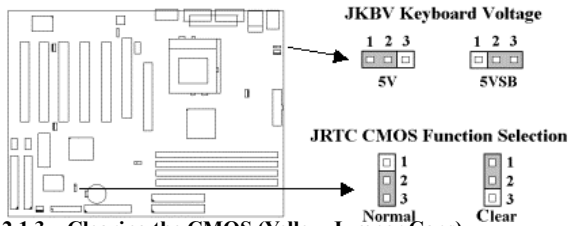
**WARNING:** Electronic parts are Static sensitive. To prevent damage to the computer and its parts please take the following measures.

- Work on a surface such as concrete, linoleum or hard wood floor.
- Ground your self with either a properly installed grounding strap or by touching a major electrical appliance long enough to discharge the static.

## 2.1.2 Keyboard Voltage Setting (Red Jumper Cap)

This motherboard supports wake on keyboard function. This feature requires that your system has an ATX power supply with at least 300mA +5V standby power and set this jumper to 2 & 3 pin short. Refer to session 3.6.11 PS2KB Wakeup for more information.

1-2 : 5V (Default Setting)  
2-3 : 5V Stand By



## 2.1.3 Clearing the CMOS (Yellow Jumper Caps)

JRTC : CMOS Function Selection  
1-2 : Clear data  
2-3 : Normal Operation (Default Setting)

How to Clear the CMOS Setting:

- (1) Turn off the power.
- (2) Remove ATX power cable from connector ATXPWR.
- (3) Remove Yellow Jumper Cap from JRTC (2-3) and put on JRTC (1-2) to remove the CMOS setting.
- (4) Remove Yellow Jumper Cap from JRTC (1-2) and put on JRTC (2-3).
- (5) Connect ATX power cable back to connector ATXPWR.
- (6) Turn on the power.
- (7) While the system reboots, press <DEL> key to set the BIOS setup.

## 2.1.4 CPU Voltage Setting

The motherboard supports CPU VID function, the CPU core voltage is automatically detected.

### Over-current Protection

This switching regulator circuit is designed onboard to support CPU over-current protection. It enhances the protection of CPU.

ATX switching power supply —5V—> circuit onboard power regulator —> over-current protection —> CPU core voltage.

**Note:** Although we have implemented protection circuit try to prevent any human operating mistake, there is still certain risk that CPU installed on this motherboard may be damaged because of component failure, human operating error or unknown nature reason. We cannot guaranty the protection circuit will always work perfectly.

## 2.1.5 CPU Bus Clock Setting (Red Jumper Caps)

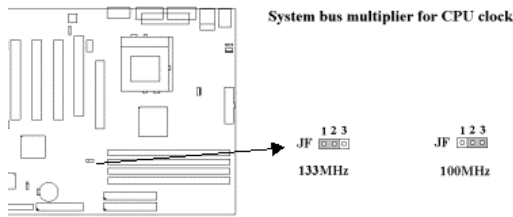
KV-DDR supports DDR (Double Data Rate) transfer on Socket A CPU address and data buses.

EV6 Bus is the technology of Alpha processor from Digital Equipment Corporation. EV6 bus uses both rising and falling clock edge to transfer data.

EV6 Bus speed = CPU external bus clock x 2

For example, 200MHz EV6 bus is actually using 100MHz external bus clock, but the equivalent speed is 200MHz. **Any attempts to push beyond product specification are not recommended.**

<i>CPU Bus Clock</i>	<i>EV6 Bus Clock</i>	<i>JF</i>
100	200	2-3
133	266	1-2



## 2.2 Installation of CPU

Before installing CPU, make sure the power is off. Locate the level bar on the PGA462 ZIF socket. Push level bar away from the socket and pull upward 90 degrees. Insert the CPU into the socket. Be careful of CPU orientation. Make sure the notch of the CPU corresponds with the white dot on the ZIF socket (the corner without pin socket). Do not push in the CPU. Make sure all pins are aligned with the CPU socket. ON the level bar.

## 2.3 Installation of Memory

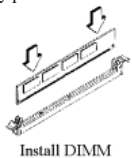
The motherboard has four 184-pin 64-bit DDR (Double Data Rate) Dual Inline Memory Module (DIMM) sockets. You can install 2.5V register or unbuffered PC1600/2100 (DDR200/266)-compliant DDR Synchronous DRAM (SDRAM) memory.

### 2.3.1 Installation of 184-pin DIMM (Dual Inline Memory Module)

1. Before inserting the DIMM, make sure the pin1 of the DIMM matches with the pin1 on the DIMM socket.
2. Insert DIMM into the DIMM sockets at a 90-degree angle and press down.

### 2.3.2 Removal of 184-pin DIMM

1. Press the holding clips on both sides of the socket outward to release the DIMM.
2. Gently pull the DIMM out of the socket.



### 2.3.3 Memory Configuration



There is no jumper setting required for the memory size or type. It is automatically detected by the system BIOS, and the total memory size is to add them together.

Supports 8-banks up to 4 GB DRAMs for register DDR SDRAM module or 6-banks up to 3 GB DRAMs for unbuffered DDR SDRAM module.

<i>DIMM Socket</i>	<i>DIMM Modules</i>
<b>DIMM1</b>	PC1600/2100 DDR SDRAM 64, 128, 256, 512MB, 1GB
<b>DIMM2</b>	PC1600/2100 DDR SDRAM 64, 128, 256, 512MB, 1GB
<b>DIMM3</b>	PC1600/2100 DDR SDRAM 64, 128, 256, 512MB, 1GB
<b>DIMM4</b>	PC1600/2100 DDR SDRAM 64, 128, 256, 512MB, 1GB

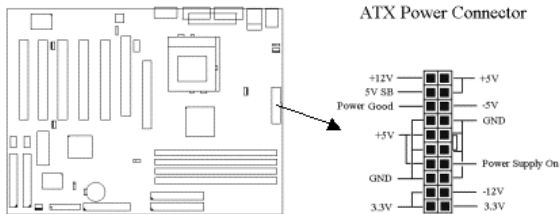
## 2.4 I/O Connections/Panel Connections

### I/O Connections

ATXPWR	ATX Power Connector
CPUFAN	CPU fan connector
PWRFAN	CPU or Power supply fan connector
SYSFAN	System fan connector
JIR	Infrared Connector (Cable optional)
WOL1	Wake On LAN connector
WOM1	Wake On Modem connector
FDD	Floppy Disk Drive Connector
IDE1, 2	Primary/ Secondary IDE Connectors
IDE3, 4	RAID Connectors
PS_KB	PS/2 Mouse Port & Keyboard Connectors
COM1, 2	Serial Ports 1 & 2
LPT	Printer Port
USB_LAN	USB & LAN Connectors
JUSB1, 2	USB Connector (Cable optional)
GAME	Game/MIDI Connectors
LINOUT	Line out Connector
LININ	Line in Connector
MIC	Microphone in Connector
JCDIN1	The Connector for IDE/Sony CD-ROM audio cable

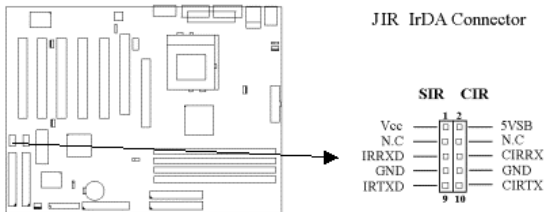
### 2.4.1 ATX Power Connector (20-pin ATXPWR)

Make sure that the power supply is off before connecting or disconnecting the power cable.



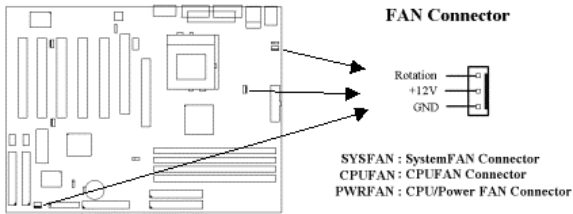
### 2.4.2 Infrared Connector (5-pin JIR)

This connector supports the optional wireless transmitting and receiving infrared module, with this module and application software such as Laplink or Win95 Direct Cable Connection, user can transfer files to or from their laptops, notebooks, PDA, PCs and printers. The connector supports IrDA (115.2Kbps, 2 meters) and ASK-IR (56Kbps). An optional consumer infrared (CIR) set connects to the CIR and SIR connectors simultaneously for both wireless transmitting and remote control functions through one external infrared module. Install infrared module onto Infrared connector and configure the setting through "UART Mode Select" in **Integrated Peripherals** to select whether UART is directed for use with COM2 or Infrared.



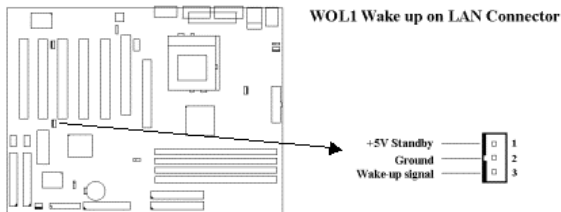
### 2.4.3 System, CPU & Power Fan Connectors (3-pin FAN)

Connect the fan's plug to the board taking into consideration the polarity of the connector.



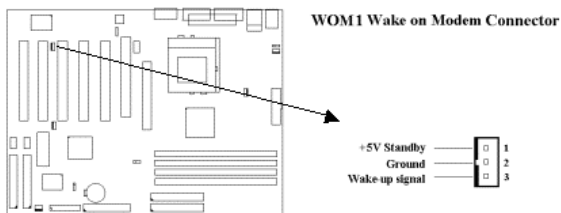
### 2.4.4 Wake On LAN Connector (3-pin WOL1)

The connector powers up the system when a wakeup packet or signal is received from the network. This feature requires the **Wake Up On LAN/Ring** function in BIOS is set to Enabled and that your system has an ATX power supply with at least 720mA +5V standby power.



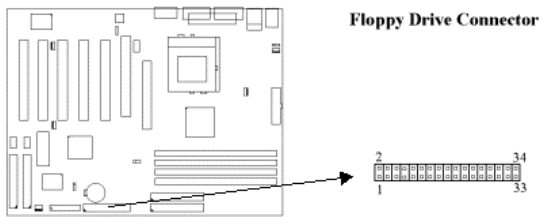
### 2.4.5 Wake On Modem Connector (3-pin WOM1)

The connector connects to internal modem cards with a Wake-On-Ring output. The connector powers up the system when a ring-up packet or signal is received through the internal modem card. Note: For external modems, Wake-On-Ring is detected through the COM port. This feature requires that the **Wake Up On LAN/Ring** function in BIOS is set to Enabled (see Power Management Setup under BIOS SETUP).



### 2.4.6 Floppy Disk Drive Connector (34-pin FDD)

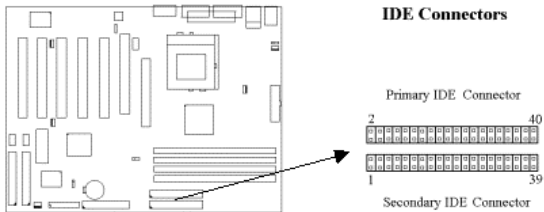
This connector supports the provided floppy disk drive ribbon cable. Orient the red stripe to pin 1



#### 2.4.7 Primary/Secondary IDE Connectors (IDE1 & IDE2)

These connectors support the provided IDE hard disk ribbon cable. Connect your first IDE hard disk to master mode of the primary channel. If you have second IDE device to install in your system, connect it as slave mode on the same channel, and the third and fourth device can be connected on secondary channel as master and slave mode respectively.

There are three connectors on the 80-wire/40-pin IDE ribbon cable. The blue connector must connect with motherboard's IDE connector and the other connectors must connect with HDD. In order to get the better performance the Ultra DMA 66/100 HDD must connect with 80-wire/40-pin IDE ribbon cable.



#### 2.4.8 RAID Connectors (Two 40-pin IDE3 & IDE4)

These connectors support striping (RAID 0) or mirroring (RAID 1). It depends on the setting in FastBuild BIOS. The Channel 1 in FastBuild BIOS stands for IDE3. The Channel 2 in FastBuild BIOS stands for IDE4. Please refer to **Appendix A. How to setup the RAID IDE** for more information.

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator seek while creating a complete backup of your files.

Striped array can double the sustained data transfer rate of Ultra ATA/100 drives. It fully supports Ultra ATA/100 specification of up to 100 MB/sec per drive, depending on individual drive specifications.

It also offers fault tolerant, data redundancy for entry-level network file servers or simply for desktop PC users wanting to continually protect valuable data on their PC. It offers RAID 1 mirroring (for two drives) to protect data. Should a drive that is part of a mirrored array fail, it uses the mirrored drive (which contains identical data) to assume all data handling. When a new replacement drive is later installed, it rebuilds data to the new drive from the mirrored drive to restore fault tolerance.

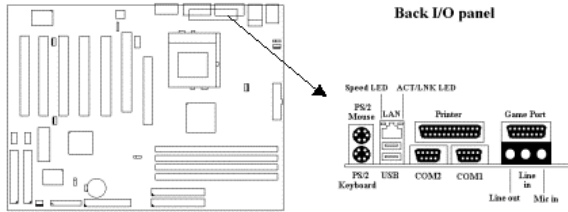
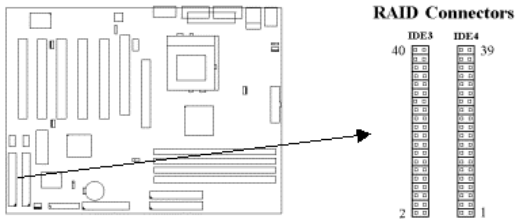
For optimal results, select identical Ultra ATA/100 drives to install in disk arrays. The drives' *matched performance* allows the array to function better as a single drive.

**WARNING:** Before installing the device, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.

If an onboard IDE controller is installed with hard disks, enable support in the Motherboard Standard CMOS Setup for the drives. Note that the onboard IDE hard drives will then be the bootable hard disk. If you want to

boot from RAID IDE, it is necessary to set the Boot sequence to “SCSI, A:, C:” since the RAID IDE is identified as a SCSI card.

You can refer to the **FAQ.DOC** file that in \PROMISE\20265 directory from CD Driver Disk for more information.



#### 2.4.9 PS/2 Mouse Port

The system will direct IRQ12 to the PS/2 mouse.

#### 2.4.10 PS/2 Keyboard Connector

This connection is for a standard keyboard using a PS/2 plug. You may use a Din to Mini-Din adapter on standard AT keyboards.

#### 2.4.11 Serial Port (Two 9-pin D-type COM1 & COM2)

#### 2.4.12 Printer Port (25-pin D-type PRINTER)

You can enable the parallel port and choose the IRQ through the "Onboard Parallel Port" setting in Integrated Peripherals of the COMS SETUP UTILITY.

#### 2.4.13 LAN Connector

The LAN Connector is used to attach RJ-45 cable. For 100Base-TX, your network cable must be category 5, twisted-pair wiring with RJ-45 connectors. If you plan on running the adapter at 100Mbps, it must be connected to a 100Base-TX hub. For 10Base-T, use category 3, 4 or 5 twisted-pair wiring. Please enable VIA-3043 OnChip LAN item from BIOS Setup before using.

#### 2.4.14 ACT/LNK LED (Green)

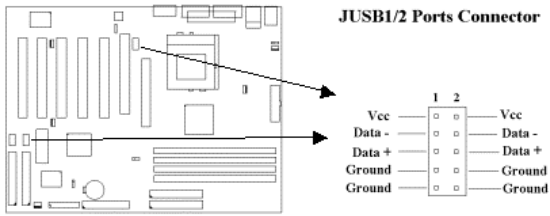
This LED lights when there is network packets sent or received through the RJ45 port. It also lights to indicate a successful network connection and remains steady if the connection is stable. The rate of flashing is proportional to the amount of network traffic.

#### 2.4.15 Speed LED (Orange)

This LED lights when connection is made to a 100Base-TX or 10Base-T host.

#### 2.4.16 USB Connectors (USB, JUSB1 & JUSB2)

You can attach USB devices to USB, JUSB1 or JUSB2 connector. Please refer to session 3.5.18 OnChip USB Controller for more information.



#### 2.4.17 Line Out Connector

The Line Out phonejack provides the audio outputs for the left and right stereo channels.

#### 2.4.18 Line In Connector

The Line In phonejack is used to attach monaural or stereo devices such as a cassette, Digital Audio Tape, or Minidisc players for playback, mixing, or recording.

#### 2.4.19 Microphone In Connector

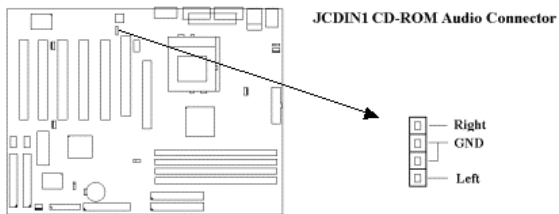
The Microphone In phonejack is used to attach a monaural microphone for live audio input for playback, mixing, or recording.

#### 2.4.20 Game/MIDI Port

The Game/MIDI Port connector is used to attach a joystick for game interaction or to attach an external MIDI device for playback, mixing, or recording.

#### 2.4.21 ATAPI IDE/Sony CD-ROM Audio (4-pin JCDIN1)

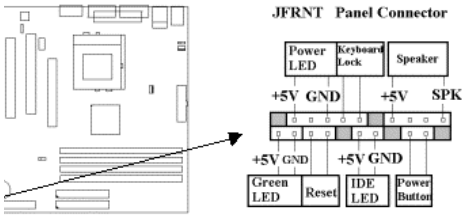
The ATAPI IDE/Sony CD-ROM Audio connector is used to connect the audio cable from either an ATAPI IDE or Sony CD-ROM drive for playback, mixing, and recording.



#### 2.4.22 Panel Connection (24-pin JFRNT)

JFRNT Connector	Function
GREENLED	Suspend Mode LED
PWRLED	Power LED
SPKR	Speaker
RESET	Reset Switch
IDELED	HDD LED
PWRBNT	ATX Power Button Connector
SMISW	Sleep Switch

**WARNING:** To avoid the system from failing, turn off the power before connecting any devices to the system.



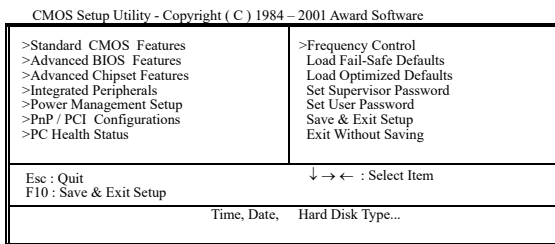
## Chapter 3. BIOS Setup

### 3.1 CMOS Setup Utility

To activate CMOS Setup, press <DEL> key immediately after you turn on the system. The following message "Press DEL to enter SETUP" should appear in the lower left hand corner of your screen.

When you enter the CMOS Setup Utility, the Main Menu will be displayed (**Figure 3-1**). You can use arrow keys to select your function, press <Enter> key to accept the selection and enter the sub-menu.

**Figure 3-1.** CMOS Setup Utility Main Screen



#### Sub-Menu

Note that a right pointer symbol appears to the left of certain fields. This pointer indicates that a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. To call up a sub-menu, simply move the highlight to the field and press <Enter>. The sub-menu will then immediately appear. Use the legend keys to enter values and move from field within a sub-menu just as you would within a menu. Use the <Esc> key to return to the main menu.

### 3.2 Standard CMOS Features

With the sub-menu (**Figure 3-2**), you can setup the; system date, system time, hard and floppy drive type, and display adapter type. Please refer to your equipment specification when changing the setup. Use arrow keys to highlight items, and use <PageUp>, <PageDown>, <+>, or <-> keys to scroll through the available options.

**Figure 3-2. Standard CMOS Features Screen**

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
Standard CMOS Features

Date ( mm : dd : yy )	Fri, Jan 1 1999	Item Help
Time ( hh : mm : ss )	1 : 28 : 42	Menu Level >
>IDE Primary Master	[QUANTUM FIREBALL SE2]	Change the day, month, Year and century
>IDE Primary Slave	[None]	
>IDE Secondary Master	[None]	
>IDE Secondary Slave	[atapi cd-rom drive 2]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	640K	
Extended Memory	14336K	
Total Memory	15360K	

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

### 3.2.1 Date

To assign the system date, the format is "mm.dd.yy". The input range for the Month is 1-12. Range for Date is 1-31. Range for Year is 1994-2079. System BIOS will calculate the day of the week automatically.

### 3.2.2 Time

To assign the system time, the format is "hh:mm:ss". The setting is in military time. When entering 2:34pm enter "14:34:00".

### 3.2.3 Hard Disks Setting

The BIOS supports Dual-Channel PIO and PCI Bus Master IDE ports. Each port supports one master and one slave hard drive. You can use <Enter> or <PageUp> or <PageDown> key to change hard drive type. Incorrect setting may result in boot up error or system hang.

If your hard disk drive is not listed, you can select "Manual" mode to define your own drive manually. We recommend that you select Type "AUTO" for all drives. The BIOS will auto-detect the hard disk drive and CD-ROM drive at the POST stage.

If your hard disk drive is a SCSI device, please select "None" for your hard drive setting.

CMOS Setup Utility - Copyright ( C ) 1984 - 2000 Award Software  
IDE Primary Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Primary Master	[Auto]	Menu Level >>
Access Mode	[Auto]	To auto-detect the HDD's size, head... on This channel
Capacity	4303 MB	
Cylinder	8894	
Head	15	
Precomp	0	
Landing Zone	8893	
Sector	63	

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

### 3.2.4 Floppy Drives A&B Setting

Select your floppy disk drive type. Options are 360KB (5.25"), 720KB (3.5"), 1.2MB (5.25"), 1.44MB (3.5"), 2.88MB (3.5").

### 3.2.5 Floppy 3 Mode Support

This is required to support older Japanese floppy drives. Floppy 3 Mode support will allow reading and writing of 1.2MB (as opposed to 1.44MB) on a 3.5-inch diskette.

### 3.2.6 Video Display Adapter Setting

Select the display adapter type for your system. Options are EGA/VGA, MONO, CGA40 and CGA80.

### 3.2.7 Halt On

This function allows the system to halt when an error is detected during Power-On Self-Test.

## 3.3 Advanced BIOS Features Setup

The sub-menu (Figure 3-3) includes all AWARD enhanced functions. The correct setting can enhance boot up efficiency. You can assign system speed, setup sequence, typematic and system password setting. You can enter <F1> key for help on highlighted topics. If you want to restore values before the changes you just made, press <F5> key. If you want to restore default value, press <F6> or <F7> key.

**Figure 3-3.** Advanced BIOS Features Screen

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
 Advanced BIOS Features

Virus Warning	[Disabled]	Item	Help
CPU Internal Cache	[Enabled]	Menu	Level >
External Cache	[Enabled]		
CPU L2 Cache ECC Checking	[Enabled]		
Processor Number Feature	[Disabled]		
Quick Power On Self Test	[Enabled]		
First Boot Device	[IDE-0]		
Second Boot Device	[Floppy]		
Third Boot Device	[SCSI]		
Boot Other Device	[Enabled]		
Swap Floppy Drive	[Disabled]		
Boot Up Floppy Seek	[Disabled]		
Boot Up NumLock Status	[On]		
Gate A20 Option	[Fast]		
Typematic Rate Setting	[Disabled]		
X Typematic Rate (Chars/Sec)	6		
X Typematic Delay (Msec)	250		
Security Option	[Setup]		
OS Select For DRAM > 64MB	[Non-		
	OS2]		
-----			
Report No FDD For WIN 95	[Yes]		
Video BIOS Shadow	[Enabled]		
Small Logo(EPA) Show	[Disabled]		

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

( Scroll down to see more items , as shown here )

### 3.3.1 Virus Warning



When enabled, the BIOS will monitor the boot sector and the partition table on the hard drive for any attempt to modify. If an attempt is detected, the BIOS will halt the system and prompt the warning message. Select "Disabled" if you are installing a new operating system.

### **3.3.2 CPU Internal/External Cache**

These options are to enable or disable CPU Internal (L1) Cache, or External (L2) Cache.

### **3.3.3 CPU L2 Cache ECC Checking**

Select "Enabled" to enable CPU L2 Cache ECC Checking.  
Select "Disabled" to disable CPU L2 Cache ECC Checking.

### **3.3.4 Processor Number Feature**

This field will appear only when you are using a Pentium III processor. Each Pentium III processor comes with an individual "processor serial number" which by default is activated. Therefore, when connected to the internet, Pentium III processor transmits the serial number online making it possible to track your online activity. The field provides you the option of disabling this function.

### **3.3.5 Quick Power On Self Test**

Select "Enabled" to speed up time required to complete Power-On Self-Test.

### **3.3.6 First/Second/Third Boot Device & Boot Other Device**

This option allows user to assign boot sequence of the system. Available options are Floppy, HDD, CD-ROM, SCSI, LAN and LS120/ZIP100. Set "Boot Other Device" to Enabled if you wish to boot from another device.

### **3.3.7 Swap Floppy Drive**

When enabled, physical drive A will be assigned to logical drive B, and physical drive B will be assigned to logical drive A.

### **3.3.8 Boot Up Floppy Seek**

The system will detect and verify operation of the floppy drive type.

### **3.3.9 Boot Up Numlock Status**

The option allows the <NumLock> key to be activated after system boot up.

### **3.3.10 Gate A20 Option**

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard (Normal). Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset (Fast; default) to provide support for gate A20.

### **3.3.11 Typematic Rate Setting**

Select "Enabled" to configure "Typematic Rate" and "Typematic Delay" functions.

### **3.3.12 Typematic Rate**

Use this option to set the rate at which a character keeps repeating while you hold down a key.

### **3.3.13 Typematic Delay**

Select "Enabled" to set the length of delay before key strokes to repeat. Available options are 250, 500, 750, and 1000.

### 3.3.14 Security Option

You can select whether the password is required every time the system boots or only when you enter the Setup. You can assign "Supervisor Password" and "User Password" in the main CMOS Setup Utility Screen.

### 3.3.15 OS Select for DRAM > 64MB

If you are using OS/2 operating system and installed memory is larger than 64MB. You need to have the setting in the enable mode.

### 3.3.16 Report No FDD For WIN 95

While the FDD in "STANDARD CMOS SETUP" is set to NONE, set this option to No to release IRQ6 for passing Win95 logo. This option is irrelevant under normal operation.

### 3.3.17 Video BIOS Shadow

Video shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.

### 3.3.18 Small Logo(EPA) Show

This field allow user to Enabled or Disabled EPA logo when system is booting.

## 3.4 Advanced Chipset Features Setup

These settings are intended for the Advanced Chipset function on the motherboard. Fine tuning these options, enhances the performance of the system.

**Figure 3.4** Advanced Chipset Features Screen

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
Advanced Chipset Features

>DRAM Clock/Drive Control	[Press Enter]	Item Help
>AGP & P2P Bridge Control	[Press Enter]	Menu Level >
>CPU & PCI Bus Control	[Press Enter]	
Memory Hole	[Disabled]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Enabled]	
Video RAM Cacheable	[Enabled]	
Onboard Audio Control	[Enabled]	
Memory Parity/ECC Check	[Disabled]	

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

### 3.4.1 DRAM Clock/Drive Control

If you want to set DRAM clock and timing, simple move the highlight to the field and press <Enter>.

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
DRAM Clock/Drive Control

Current FSB Frequency	100 MHz	Item Help
-----------------------	---------	-----------

Current DRAM Frequency	133 MHz	Menu Level >
DRAM Clock	[By SPD]	
DRAM Timing	[By SPD]	
X SDRAM Cycle Length	2.5	
X Bank Interleave	Disabled	
X Precharge to Active (Trp)	3T	
X Active to Precharge (Tras)	6T	
X Active to CMD (Trcd)	3T	
DRAM Command Rate	2T Command	
↓ → ← → Move    Enter : Select    +/-/PU/PD : Value    F10 : Save    ESC : Exit    F1 : General Help F5 : Previous Value    F6 : Fail-Safe Defaults    F7 : Optimized Defaults		

### 3.4.2 Current FSB Frequency

Current CPU FSB Frequency will be shown on the item.

### 3.4.3 Current DRAM Frequency

Current DRAM Frequency will be shown on the item.

### 3.4.4 DRAM Clock

This item allows you to set the DRAM Clock. Default setting is By SPD. Options are By SPD, Host CLK, HCLK-33M or HCLK+33M. Please set the item according to the Host (CPU) Clock and DRAM Clock.

If your DIMM memory have SPD ( Serial Presence Detect ) 8-pin IC on module, you can set this option to By SPD. System will set your DRAM clock from the SPD IC.

When the installed CPU is 66MHz, this field has two setting options : By SPD or HCLK+33M.

When the installed CPU is 100MHz, this field has three setting options : By SPD, Host CLK or HCLK+33M.

When the installed CPU is 133MHz, this field has three setting options : By SPD, Host CLK or HCLK-33M.

### 3.4.5 DRAM Timing

If your DIMM memory have SPD ( Serial Presence Detect ) 8-pin IC on module, you can set this option to By SPD. System will set your DRAM timing from the SPD IC. Options are By SPD or Manual.

### 3.4.6 SDRAM Cycle Length

This controls the time delay (in clock cycles) before DRAM starts a read command after receiving it. Settings are 2 or 2.5. 2 increases the system performance while 2.5 provides more stable performance. The default value is 2.5.

### 3.4.7 Bank Interleave

The field selects 2-bank or 4-bank interleave for the installed DRAM. Disable the function if 16MB DRAM is installed. Settings are Disabled, 2-Way and 4-Way. The default value is Disabled.

### 3.4.8 Precharge to Active (Trp)

This function specifies the delay from precharge command to active command.

### 3.4.9 Active to Precharge (Tras)

This function specifies the minimum bank (active time: time from active to precharge of same bank).

### 3.4.10 Active to CMD (Trcd)

This function specifies the delay from activation of a bank to the time that a read or write command is accepted.

### 3.4.11 DRAM Command Rate

DRAM Command Rate will be shown on the item.

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
AGP & P2P Bridge Control

AGP Aperture Size	[64M]	Item Help
AGP Mode	[2X]	Menu Level >
AGP Driving Control	[Auto]	
X AGP Driving Value	DA	
AGP Fast Write	[Disabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	

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

### 3.4.12 AGP Aperture Size

Choose 4, 8, 16, 32, 64, 128, 256MB. Memory-mapped, graphics data structures can reside in the Graphics Aperture.

### 3.4.13 AGP Mode

The item sets an appropriate mode for the installed AGP card. Settings are 1X, 2X or 4X. The 4X item can be found when AGP 4X VGA card is installed.

### 3.4.14 AGP Driving Control

This item is use for control AGP drive strength.  
Auto: Setup AGP drive strength by default setting.  
Manual: Setup AGP drive strength by manual setting.

### 3.4.15 AGP Driving Value

Key in a HEX number to control AGP output buffer drive strength.  
Min = 00, Max = FF.

### 3.4.16 AGP Fast Write

This item allows Enabled or Disabled AGP fast write function.

### 3.4.17 AGP Master 1 WS Write

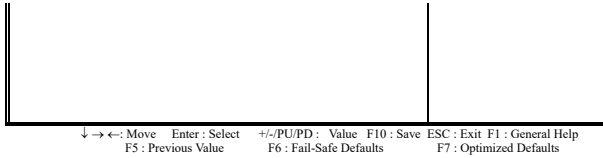
This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

### 3.4.18 AGP Master 1 WS Read

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
CPU & PCI Bus Control

PCI1 Master 0 WS Write	[Enabled]	Item Help
PCI2 Master 0 WS Write	[Enabled]	Menu Level >
PCI1 Post Write	[Enabled]	
PCI2 Post Write	[Enabled]	
PCI Delay Transaction	[Enabled]	



#### 3.4.19 PCI/2 Master 0 WS Write

When enabled, writes to the PCI/2 bus are command with zero wait states.

#### 3.4.20 PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

#### 3.4.21 Memory Hole

Enabling this feature reserves 15MB to 16MB memory address space to ISA expansion cards that specifically require this setting. This makes the memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB.

#### 3.4.22 System BIOS Cacheable

Allows the system BIOS to be cached for faster system performance.

#### 3.4.23 Video BIOS Cacheable

Allows the video BIOS to be cached for faster video performance.

#### 3.4.24 Video RAM Cacheable

Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

#### 3.4.25 Onboard Audio Control

Allows to set Enabled or Disabled the onboard audio.

#### 3.4.26 Memory Parity / ECC Check

When Disabled, there will be no memory errors shown on the monitor for Memory parity SERR# (NMI). When parity DRAM modules are used, select Parity or ECC (Error Checking and Correcting) to correct 1 bit memory errors in the memory.

## 3.5 Integrated Peripherals

You can control Input and Output functions from this screen.

Figure 3-5 Integrated Peripherals

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

> VIA OnChip IDE Device	[Press Enter]	Item Help
> VIA OnChip PCI Device	[Press Enter]	Menu Level >
> SuperIO Device	[Press Enter]	
Init Display First	[PCI Slot]	
OnChip USB Controller	[All Enabled]	
USB Keyboard Support	[Disabled]	

IDE HDD Block Mode	[Enabled]	
--------------------	-----------	--

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

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
 VIA OnChip IDE Device

On-Chip IDE Channel0	[Enabled]	Item Help
On-Chip IDE Channel1	[Enabled]	Menu Level >
IDE Prefetch Mode	[Enabled]	
Primary Master PIO	[Auto]	
Primary Slave PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Slave PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Slave UDMA	[Auto]	
Secondary Master UDMA	[Auto]	
Secondary Slave UDMA	[Auto]	

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

### 3.5.1 OnChip IDE Channel 0/1

Select "Enabled" to activate each on-board IDE channel separately, Select "Disabled", if you install an add-on IDE Control card

### 3.5.2 IDE Prefetch Mode

Enable prefetching for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit the drive interface where the errors occur. Depending on the configuration of your IDE subsystem, this field may not appear, and it does appear when the Internal PCI/IDE filed, above, is Disabled.

### 3.5.3 Primary & Secondary Master/Slave PIO

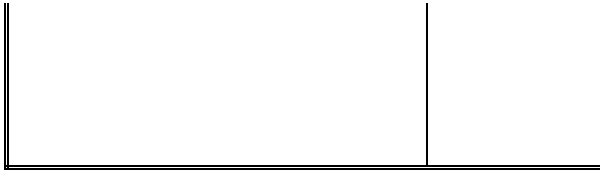
These four PIO fields let you set a PIO mode (0-4) for each of four IDE devices. When under "Auto" mode, the system automatically set the best mode for each device

### 3.5.4 Primary & Secondary Master/Slave UDMA

When set to "Auto" mode, the system will detect if the hard drive supports Ultra DMA mode.

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
 VIA OnChip PCI Device

VIA-3058 AC97 Audio	[Auto]	Item Help
VIA-3068 MC97 Modem	[Auto]	Menu Level >
VIA-3043 OnChip LAN	[Disabled]	
OnChip LAN Boot Rom	[Disabled]	



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

### 3.5.5 VIA-3058 AC97 Audio/VIA-3068 MC97 Modem

Allows the motherboard's BIOS to detect whether you are using any sound/modem device. If a sound/modem device is detected, the onboard sound/modem controller will be enabled; if no sound /modem is detected, the onboard sound /modem controller will be disabled. If you want to use different controller cards to connect sound and modem connectors, set these fields to Disabled.

### 3.5.6 VIA-3043 OnChip LAN

If you want to use LAN function, please set the field to Enabled.

### 3.5.7 OnChip LAN Boot Rom

If you want to boot from LAN, please set the field to Enabled.

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
 SuperIO Device

Onboard FDC Controller	[Enabled]	Item Help
Onboard Serial Port 1	[3F8 / IRQ4]	Menu Level >
Onboard Serial Port 2	[2F8 / IRQ3]	
UART Mode Select	[Normal]	
X UR2 Duplex Mode	Half	
Onboard Parallel Port	[378 / IRQ7]	
Parallel Port Mode	[SPP]	
X ECP Mode Use DMA	3	
Game Port Address	[201]	
Midi Port Address	[Disabled]	
X Midi Port IRQ	5	

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

### 3.5.8 Onboard FDC Controller

Select "Enabled" to activate the on-board FDC  
 Select "Disabled" to activate an add-on FDC

### 3.5.9 Onboard Serial Port 1 & 2

Select an address and corresponding interrupt for the first/second serial port. The default value for the first serial port is "3F8/IRQ4" and the second serial port is "2F8/IRQ3".

### 3.5.10 UART Mode Select & UR2 Duplex Mode

This item defines the operation of serial port 2. In the Normal setting, serial port 2 is assigned to the external COM2 connector. If you have installed an optional infrared port, you must change the setting of this item to one of the Infrared settings (usually IrDA). These settings will disable the external COM2 serial port connector and assign the resources to the infrared device. If you have selected an IR mode, use the following item *UR2 Duplex Mode* to define if the IR port is full duplex or half duplex.

### 3.5.11 Onboard Parallel Port

Select address and interrupt for the Parallel port.

### 3.5.12 Parallel Port Mode

Select an operating mode for the parallel port. Mode options are SPP, EPP, ECP, ECP+EPP.

### 3.5.13 ECP Mode Use DMA

Select a DMA channel if parallel Mode is set as ECP, ECP+EPP.

### 3.5.14 Game Port Address

This field can set Disabled or assign an I/O Base address for game port.

### 3.5.15 Midi Port Address

This field can set Disabled or assign an I/O Base Address for the MIDI port.

### 3.5.16 Midi Port IRQ

This item is used to select IRQ for the MIDI port.

### 3.5.17 Init Display First

Select "AGP" or "PCI Slot" for system to detect first when boot-up.

### 3.5.18 OnChip USB Controller

You can select USB port 1 (on back panel), port 2 (JUSB1) or port 3 (JUSB2) Enabled or Disabled for your USB peripheral.

### 3.5.19 USB Keyboard Support

This item lets you enable or disable the USB keyboard driver within the onboard BIOS.

### 3.5.20 IDE HDD Block Mode

This feature enhances disk performance by allowing multi-sector data transfers and eliminates the interrupt handling time for each sector.

## 3.6 Power Management Setup

Power management decreases power usage under the pre-defined standby time range.

**Figure 3-6.** Power Management Setup Screen

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
Power Management Setup

ACPI function	[Enabled]	Item Help
Power Management Option	[User Define]	Menu Level >
HDD Power Down	[[isabled]	
Suspend Mode	[Disabled]	
Video Off Option	[Suspend→ off]	
Video Off Method	[V/H SYNC+Blank]	
MODEM Use IRQ	[3]	



Soft-off by PWRBTN	[Instant-off]
State After Power Failure	[Off]
> IRQ/Event Activity Detect	[Press Enter]

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

### 3.6.1 ACPI Function

This item allows you to enable or disable the function of Advanced Configuration and Power Interface which offers improved power management.

### 3.6.2 Power Management Option

Min Saving	System starts power saving function when the inactivity period exceeds 1 hour.
Max Saving	System starts power saving function when the inactivity period exceeds 1 min.
User Define	Allows user to define the inactivity period before power saving function activates.

### 3.6.3 HDD Power Down

This instructs hard drives to shut off while in the Power Management modes.

### 3.6.4 Suspend Mode

System further shuts down all devices except for CPU itself. This is the third level of Power Management.

### 3.6.5 Video Off Option

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

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.

### 3.6.6 Video Off Method

This field defines the video off features. The following options are available: Blank Screen, V/H SYNC+Blank, DPMS support. The DPMS (Display Power Management System) features allow the BIOS to control the video display card if it supports the DPMS feature.

### 3.6.7 MODEM Use IRQ

This item tells the Power Management BIOS which IRQ is assigned to the installed MODEM. Options are NA, 3, 4, 5, 7, 9, 10 and 11.

### 3.6.8 Soft-off by PWRBTN

When set to "Delay 4 Sec", the power button has a dual function where pressing less than 4 seconds will place the system in sleep mode and shut down the system when the button is held more than 4 seconds. "Instant-Off", the system will be shut down right away when the power button is pressed.

### 3.6.9 State After Power Failure

Off: When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

On: When power returns after an AC power failure, the system will automatically power-on.

Auto: When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

### 3.6.10 IRQ/Event Activity Detect

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
IRQ/Event Activity Detect

		Item Help
PS2KB Wakeup	[Any Key]	
VGA	[OFF]	Menu Level >
LPT & COM	[LPT / COM]	
HDD & FDD	[ON]	
PCI Master	[OFF]	
PowerOn by PCI Card	[Disabled]	
Wake Up On LAN/Ring	[Disabled]	
RTC Alarm Resume	[Disabled]	
X Date (of Month)	0	
X Resume Time (hh:mm:ss)	0 0 0	
> IRQs Activity Monitoring	[Press Enter]	

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

### 3.6.11 PS2KB Wakeup

This field allows you to use the PS/2 keyboard to power-on the system. To use this function, make sure JKBV jumper is set to 2-3 pin short, please refer to " Keyboard Voltage Setting " in Chapter 2 for more information.

Any Key: Press any key to power-on the system.

Disable: Disable the function.

Wake: When this option is selected, press the "wake up" key of the Windows 98 compatible keyboard to power-on the system.

Power: When this option is selected, press the "Power" key of the Windows 98 compatible keyboard to power-on the system.

Ctrl+Fx: The options are from Ctrl+F1 to Ctrl+F12. You can select a function key you would like to use to power-on the system.

### 3.6.12 VGA

When set to On, any event occurring at a VGA port will awaken a system which has been powered down.

### 3.6.13 LPT & COM

When set to On, any event occurring at a LPT (printer) / COM (serial) port will awaken a system which has been powered down.

### 3.6.14 HDD & FDD

When set to On, any event occurring at a Hard Disk or floppy drive port will awaken a system which has been powered down.

### 3.6.15 PCI Master

When set to On, any event occurring to the DMA controller will awaken a system which has been powered down.

### 3.6.16 PowerOn by PCI Card

If this item is set as Enabled, PCI peripherals drive PME (Power Management Event) signal to wake the system from low-power states S1-S5.

### 3.6.17 Wake Up On LAN/Ring

(1) With a LAN card installed, the function allows you to remotely power up your system through your network by sending a wake-up frame or signal. With this feature, you can remotely upload / download data

to/from systems during off-peak hours. **Please refer to session 2.4.4 for more information.**

(2) With a Modem installed, the function allows you to power up the computer when Modem receives a call while the computer is in Soft-off mode. **Please refer to session 2.4.5 for more information.**

### 3.6.18 RTC Alarm Resume

Set this option to enable or disable the RTC Alarm to Wake Up the system which is set at soft Off.

### 3.6.19 Date (of Month), Resume Time (hh:mm:ss)

Set these options to specify the RTC Alarm time on Date / Hour / Minute / Second.

### 3.6.20 IRQs Activity Monitoring

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
IRQs Activity Monitoring

Item	Help
Primary INTR	[ON]
IRQ3 (COM2)	[Enabled]
IRQ4 (COM1)	[Enabled]
IRQ5 (LPT2)	[Enabled]
IRQ6 (Floppy Disk)	[Enabled]
IRQ7 (LPT1)	[Enabled]
IRQ8 (RTC Alarm)	[Disabled]
IRQ9 (IRQ2 Redir)	[Disabled]
IRQ10 (Reserved)	[Disabled]
IRQ11 (Reserved)	[Disabled]
IRQ12 (PS/2 Mouse)	[Enabled]
IRQ13 (Coprocessor)	[Enabled]
IRQ14 (Hard Disk)	[Enabled]
IRQ15 (Reserved)	[Disabled]

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

### 3.6.21 Primary INTR

When set to On (default), any interrupt request is set to Enabled (see below) will awaken the system which has been powered down.

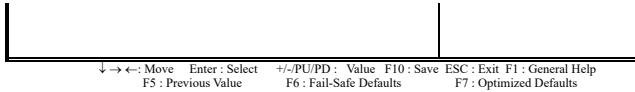
Following this option is a list of IRQs (Interrupt ReQuests). You can set each IRQ to be Enabled or Disabled.

## 3.7 PNP/PCI Configuration Setup

**Figure 3.7 PNP/PCI CONFIGURATION SETUP**

CMOS Setup Utility - Copyright ( C ) 1984 - 2000 Award Software  
PnP/PCI Configurations

Item	Help
PNP OS Installed	[No]
Reset Configuration Data	[Disabled]
Resources Controlled By	[Auto (ESCD)]
X IRQ Resources	Press Enter
PCI/VGA Palette Snoop	[Disabled]
Assign IRQ For VGA	[Enabled]
Assign IRQ For USB	[Enabled]



### 3.7.1 PNP OS Installed

This field allows you to use a Plug-and-Play (PnP) operating system. Please set it as " No " if the operating system has no PnP function or to avoid reassigning the IRQs by the operating system.

### 3.7.2 Reset Configuration Data

In case a conflict occurs after you assign the IRQs or after you configure your system, you can enable this function to allow your system to automatically reset your configuration and reassign the IRQs, DMAs, and I/O address.

### 3.7.3 Resources Controlled By

Default setting is "Auto (ESCD) ". This setting allows the BIOS to self detect setting and Plug-and-Play devices during start up. The user can select and configure IRQs under "Manual" mode.

### 3.7.4 IRQ Resources

CMOS Setup Utility - Copyright ( C ) 1984 - 2001 Award Software  
 IRQ Resources

IRQ	assigned to		Item Help
IRQ-3	assigned to	[PCI Device]	Menu Level >
IRQ-4	assigned to	[PCI Device]	
IRQ-5	assigned to	[PCI Device]	
IRQ-7	assigned to	[PCI Device]	Legacy ISA for devices
IRQ-9	assigned to	[PCI Device]	compliant with the
IRQ-10	assigned to	[PCI Device]	original PC AT bus
IRQ-11	assigned to	[PCI Device]	Specification, PCI/ISA
IRQ-12	assigned to	[PCI Device]	PnP for devices
IRQ-14	assigned to	[PCI Device]	Compliant with the
IRQ-15	assigned to	[PCI Device]	Plug and Play standard
			Whether designed for
			PCI or ISA bus
			architecture

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

### 3.7.5 IRQ-xx assigned to

If your ISA card is not PnP compatible and requires a special IRQ to support its function, set the selected IRQ-x assigned to : "Reserved". This setting informs the PnP BIOS to reserve the selected IRQ for the installed legacy ISA card.

### 3.7.6 PCI/VGA Palette Snoop

Enable this option to correct screen color shifts, when there is a combination of VGA cards, accelerator cards, or MPEG cards present.

### 3.7.7 Assign IRQ For VGA

The Enabled option allows the BIOS to auto-route an IRQ for use by a VGA card. While most of the VGA cards do not need the IRQ assignment, certain VGA cards may need it.

### 3.7.8 Assign IRQ For USB

You can set this item Enabled when "OnChip USB Controller" is enabled from Integrated Peripherals menu. When this item is Enabled, the system automatically assigns an IRQ for the USB device connected to your

system.

### 3.8 PC Health Status

**Figure 3.8 PC Health Status**

CMOS Setup Utility - Copyright ( C ) 1984 - 2000 Award Software  
PC Health Status

Shutdown Temperature	70°C/158°F	Item Help
Vcore (V)	2.02 V	Menu Level >
Vcmos (V)	2.60 V	
Vcc3 (V)	3.27 V	
Vcc (V)	5.00 V	
+12 (V)	11.73 V	
5VSB (V)	4.99V	
VBAT (V)	3.28V	
CPU Temperature	41°C	
System Temperature	36°C	
CPUFAN Speed	4017 RPM	
SYSFAN Speed	0 RPM	

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

#### 3.8.1 Shutdown Temperature

This function will be effective only for the operation systems that support ACPI function. System can monitor CPU temperature, if temperature is over the setting value system will automatically power off.

#### 3.8.2 Vcore, Vcmos, Vcc3, Vcc, +12V, 5VSB & VBAT (xx.xxV)

The onboard hardware monitor is able to detect the voltage output by the voltage regulators. These values refresh upon any key entry.

#### 3.8.3 CPU & System Temperature (xx°C/xx°F)

The onboard hardware monitor is able to detect the temperatures of motherboard and CPU. These values refresh upon any key entry.

#### 3.8.4 CPUFAN & SYSFAN Speed (xxxxRPM)

The onboard hardware monitor is able to detect system fan speed, CPU fan speed in Rotations Per Minute (RPM). These values refresh upon any key entry in the BIOS setup screen.

### 3.9 Frequency Control

**Figure 3.9 Frequency Control**

CMOS Setup Utility - Copyright ( C ) 1984 - 2000 Award Software  
Frequency Control

CPU Host/PCI Clock	[Default]	Item Help
		Menu Level >

### 3.9.1 CPU Host/PCI Clock

The field can select CPU Host/PCI Clock. Note that selecting a frequency higher than the CPU manufacturer recommends may cause the system to hang or crash.

## 3.10 Load Fail-Safe Defaults

This loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press <Enter>. The message below will appear.

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

If you want to process, type <Y> and press <Enter>. The default settings will be loaded.

## 3.11 Load Optimized Defaults

This feature loads optimized setting from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Optimized Defaults (Y/N)?N

Type <Y> and press <Enter> to load the Setup default values.

## 3.12 Set Supervisor/User Password

You can assign, modify, or cancel password settings. To modify, highlight "Set Supervisor Password" or "Set User Password" and press the <Enter> key. The screen will prompt you ("Enter Password:"). Enter your password. The maximum size of the password is 8 characters. System will prompt you to reenter the password to verify. Remember the passwords are case sensitive.

If you want to remove the passwords, either delete passwords or press <Enter> > when prompting for new password.

If you want it to require password upon initial system startup and upon entering the CMOS Setup Utility, you will need to change the selection of the (Security Option) under (Advanced BIOS Features) to "System".

If the setting is "Setup", the system will only require the password you activate CMOS Setup Utility.

## 3.13 Save & Exit Setup

When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>. The message below will appear:

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

Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot.

## 3.14 Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>. The message below will appear:

Quit Without Saving (Y/N)? N

Type "Y" and press <Enter>. The system will reboot.

## Chapter 4. Driver Installation

### 4.1 Autorun Program

You can use the **autorun** menu of this CD driver disk. Choose the model name to get driver and utility. You can also get driver and utility from correct directory. Please make sure the model number of your motherboard and refer to the **readme.txt** file in \README directory then get its device driver from correct directory.

### 4.2 IDE & AGP Driver Installation

Please refer to the **readme.txt** file that in \VIA\4IN1DRV directory in the CD Driver Disk first then follow the instruction to setup IDE & AGP driver.

### 4.3 Sound Driver Installation

#### 4.3.1 Windows 95 Installation

Please refer to the **readme.txt** file that in \VIA\8233SOUND directory in the CD Driver Disk first then follow the instruction to setup sound driver for Windows 95.

#### 4.3.2 Windows 98/ME Installation

1. Insert the CD Driver into the CD drive-enter the \VIA\8233SOUND directory on the CD-ROM and double-click **SETUP.EXE**.
2. Follow the prompts to setup the installation.
3. If the Insert Disk dialog is displayed, please insert the **Windows 98 CD-ROM** into the CD drive then click "**OK**" button.
4. Click "**Finish**" button to complete setup.
5. The sound function will be enabled in one minute.

**Notice:** If your Operation System is **Windows 98SE**, please restart system then setup the midi output. Please follow the steps below to setup MIDI instruments.

(1-1). Double-Click "**Multimedia**" icon from Start\Setting\Control Panel

(1-2). Select "**MIDI**" page and select "**Microsoft GS Wavetable SW Synth**" from Single instrument field.

(1-3). Click "**Apply**" button then click "**OK**" button.

#### 4.3.3 Windows 2000 Installation

1. Insert the CD Driver into the CD drive-enter the \VIA\8233SOUND directory on the CD-ROM and double-click **SETUP.EXE**.
2. Follow the prompts to complete the installation.

#### 4.3.4 Windows NT 4.0 Installation

1. Insert the CD Driver into the CD drive-enter the **\\VIA\8233SOUND** directory on the CD-ROM and double-click **SETUP.EXE**.
2. Follow the prompts to complete the installation and restart system.

## **4.4 On board LAN or ACR LAN Driver Installation**

### **4.4.1 Windows 95 Installation**

1. Executing Windows 95 Setup. When " Analyzing your computer " dialog box is appeared, please click the check box to " Network Adapter". Then click " Next " to continue.
2. When Windows 95 is installed. Please upgrade your Windows 95 to OSR2.1 if your Windows 95 is older version. Please load **usbsupp.exe** first. You can get the file from Microsoft Inc.
3. When Windows 95 is installed, please open " **My Computer** ", and select " **Control Panel** " icon.
4. Select " **System** " icon, and then select " **Device Manager** " page.
5. Double click " **?Other devices** ".
6. Double click " **?PCI Ethernet Controller** ".
7. Select " **Driver** " page.
8. Click " **Update Driver** " button.
9. Select " **Yes [Recommended]** " then click " **Next** " button.
10. Click " **Other Location** " button.
11. Type in the correct drive and path then click " **OK** " button. For example D:\VIA\ACR-LAN\W95OSR2 (D: is the drive where CD Driver disk has been inserted)
12. Click " **Finish** " button.
13. You must provide computer and workgroup names then click on " Close " button.
14. When Insert Disk dialog is displayed, Please insert the " **Windows 95 CD ROM** " and click " **OK** " button.
15. When system wants to copy **FETND4.INF** and **FETND4.SYS** files, insert CD Driver Disk to CD ROM then type in " **D:\VIA\ACR-LAN\W95OSR2** ". Click " **OK** " button.
16. Click on " **Yes** " button to complete the installation and restart your system.

### **4.4.2 Windows 98 Installation**

1. When Windows 98 is installed, please open " **My Computer** ", and select " **Control Panel** " icon.
2. Select " **System** " icon, and then select " **Device Manager** " page.
3. Please remove " **?! PCI Ethernet Controller** " device from " **?Other Devices** " under device list with the " **Remove** " button.
4. Please click on the " **Add New Hardware** " icon from Control Panel then click " **Next** " button, click " **Next** " button one more times.



5. When "**Do you want Windows to search for your new hardware?**" message is displayed, select "**No, I want to select the hardware from a list**" then click "**Next**" button.
6. Select "**Network adapters**" from Hardware types list then click "**Next**" button.
7. Click "**Have Disk...**" button.
8. Click on "**Browse**" and go to the directory where the files were stored. Go to the \\VIA\ACR-LAN\W98 sub-directory in the CD Driver Disk and click the "**OK**" button. Click the "**OK**" button again.
9. Select "**PCI Fast Ethernet Adapter**" and click "**OK**" button.
10. Click "**Next**" button.
11. If the Insert Disk dialog is displayed, please follow the message to insert the Windows 98 CD-ROM into the CD drive then click "**OK**" button.
12. Click "**Finish**" button to complete the installation.

#### 4.4.3 Windows ME Installation

When Windows ME is installing, the LAN driver will be automatically loaded. You don't need to load LAN driver for Windows ME.

#### 4.4.4 Windows 2000 Installation

1. Open "**My Computer**" and select "**Control Panel**" icon.
2. Select "**System**" icon, and then select "**Hardware**" page then click "**Device Manager**" button.
3. Select "**?!Ethernet Controller**" from ?Other devices. Then press right button on your mouse.
4. Select "**Properties**".
5. Select "**Driver**" page.
6. Click "**Update Driver...**" button.
7. Click "**Next**" button.
8. Select "**Search for a suitable driver for my device [recommended]**" then click "**Next**" button.
9. Select "**Specify a location**" then click "**Next**" button.
10. Type in the correct drive and path then click "**OK**" button. For example **D:\VIA\ACR-LAN\W2000**
11. Click "**Next**" button to install the driver.
12. System detects PCI 10/100Mb Fast Ethernet Adapter. Click "**Yes**" button to continue the installation.
13. Click "**Finish**" button to complete the installation.

#### 4.4.5 Windows NT 4.0 Installation

(1). If you setup LAN when Windows NT is installing:

1. Please copy LAN driver for NT to your HDD before installing Windows NT.  
 For example: copy D:\VIA\ACR-LAN\WNT40\\*. \* C:\NTDRV or  
 copy D:\VIA\ACR-LAN\WNT40\\*. \* A:\NTDRV or  
 (D: is the drive where CD Driver disk has been inserted)

2. Executing Windows NT Setup. When Setup start searching for a Network Adapter, click " **select from list** " button.
3. Click "**Have Disk...**" button from Select Network Adapter dialog box.
4. The Insert Disk dialog box will be appeared. Type the correct drive and path to load LAN driver. ( For example: C:\NTDRV, then click on " **OK** " button. Note: C:\NTDRV is the location where LAN driver for NT)
5. The PCI 10/100Mb Fast Ethernet Adapter will be shown on list. Click on " **OK** " button.
6. Select " **Next** " button to continue Setup.
7. You must answer a few more questions to continue Setup.
8. Restarting your system you will acquire network service.

(2). If you setup LAN after Windows NT was installed:

1. Please copy LAN driver for NT to your HDD first.  
For example: copy D:\VIA\ACR-LAN\WNT40\\*. \* C:\NTDRV or  
copy D:\VIA\ACR-LAN\WNT40\\*. \* A:\NTDRV or  
(D: is the drive where CD Driver disk has been inserted)
2. Open " **Control Panel** " -> " **Network** ", click " **Yes** " button to setup Network configuration.
3. Check the box on " **Wired to the network** " item then click " **Next** " button.
4. Click " **select from list...** " button then select " **Have Disk...**" button from Select Network Adapter dialog box.
5. The Insert Disk dialog box will be appeared. Type the correct drive and path to load LAN driver. ( For example: C:\NTDRV, then click on " **OK** " button. Note: C:\NTDRV is the location where LAN driver for NT)
6. The PCI 10/100Mb Fast Ethernet Adapter will be shown on list. Click on " **OK** " button.
7. Select " **Next** " button to continue Setup.
8. You must answer a few more questions to continue Setup.
9. Restarting your system you will acquire network service.

## 4.5 RAID IDE Driver Installation

Please load the driver from RAID driver diskette. The list below is installing drivers during Operation System installation only. If you are installing drivers with existing System, please go to the designated directories of the different drivers and read the **readme.txt** file.

### 4.5.1 Windows 95 Installation

1. After configuring the hard drives, partition and format your hard drive(s), if necessary.
2. Install Windows 95 normally.
3. After installation, go to the " **Start** " menu and choose " **Settings.** "
4. From the " **Settings** " menu, choose " **Control Panel.** "
5. In the " **Control Panel** " window, double-click on the " **System** " icon.

6. In the " **System** " window, choose the " **Device Manager** " tab.
7. In the hierarchical display under " **Other Devices** " is a listing for " **PCI RAID Controller** ." Choose it and then press the " **Properties** " button.
8. Choose the " **Driver** " tab in the " **Properties** " window, and then press the " **Update Driver** " button.
9. When asked if you want Windows to search for the driver, choose " **Yes (recommended)** ."
10. Insert the CD Driver Disk into the D: drive, then press " **Next** ."
11. When Windows informs you that it was unable to find the drivers, press " **Other Locations...** "
12. In the " **Select Other Location** " dialog box, type " **A:\WIN9X-ME** ".
13. Press the " **Next** " button. A message informing you that Windows 95 has found " **Win9x-ME Promise FastTrak100 (tm) Lite Controller** " should appear.
14. Press " **Finish** ." (If Windows can't find the " **FastTrak.MPD** " file, type " **A:\WIN9X-ME** " in the " **Copy files from:** " text box).
15. Choose " **Yes** " when asked if you wish to restart the system.

#### 4.5.2 Windows 98 Installation

1. After configuring the hard drive(s), partition and format your hard drive(s), if necessary.
2. Install Windows 98 normally.
3. After installation, go to the " **Start** " menu and choose " **Settings** ."
4. From the " **Settings** " menu, choose " **Control Panel** ."
5. In the " **Control Panel** " window, double-click on the " **System** " icon.
6. In the " **System** " window, choose the " **Device Manager** " tab.
7. In the hierarchical display under " **Other Devices** " is a listing for " **PCI RAID Controller** ." Choose it and then press the " **Properties** " button.
8. Choose the " **Driver** " tab in the " **Properties** " window, choose " **Update Driver** ," and then press " **Next** ."
9. Choose " **Search for a better driver than the one your device is using now (recommended)** ," then press " **Next** ."
10. Choose " **Specify Location** ," and then type " **A:\WIN9X-ME** " in the text box.
11. Insert the CD Driver Disk into the D: drive.
12. Press the " **Next** " button. A message informing you that Windows 98 has found " **Win9x-ME Promise FastTrak100 (tm) Lite Controller** " should appear.
13. Press " **Next** ," then " **Finish** ," then " **Yes** " when asked if you want to restart your computer.

#### 4.5.3 Windows ME Installation

1. Install Microsoft Millennium fully.
2. After installation, go the " **Start** " menu and choose " **Settings** ."
3. From the " **Settings** " menu, choose " **Control Panel** ."
4. In the " **Control Panel** " window, double-click on the " **System** " icon.
5. In the " **System** " window, choose the " **Device Manager** " tab.
6. In the hierarchical display under " **Other Devices** " is a listing for " **PCI RAID Controller** ." Choose it and then press the " **Properties** " button.
7. Choose the " **Driver** " tab in the " **Properties** " window, choose " **Update Driver** ," and then press " **Next** ."
8. Choose " **Search for a better driver than the one your device is using now (recommended)** ," then press " **Next** ."
9. Choose " **Specify Location** ," and then type " **A:\WIN9X-ME** " in the text box.

10. Insert the CD Driver Disk into the D: drive.
11. Press the **"Next"** button. A message informing you that Windows Millennium has found **"Win9x-ME Promise FastTrak100 (tm) Lite Controller"** should appear.
12. Press **"Next"**, then **"Finish"**, then **"Yes"** when asked if you want to restart your computer.

#### 4.5.4 Windows 2000 Installation

- 1a. Floppy Install: Boot the computer with the Windows 2000 installation diskettes.
- 1b. Floppyless Install: Boot from floppy and type **"WINNT"**. After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.
- 1c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
  2. When the "Windows 2000 Setup" window is generated, press **"S"** to Specify an Additional Device(s)
  3. Press **"O"** to select **"Other"** and press the **"Enter"** key.
  4. Insert the RAID driver diskette into drive A: and press **"Enter"** key.
  5. Choose **"Win2000 Promise FastTrak100 (tm) Lite Controller"** from the list that appears on screen, then press the **"Enter"** key.
  6. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000 Promise FastTrak100 (tm) Lite controller"..  
*NOTE: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.*
  7. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.

#### 4.5.5 Windows NT 4.0 Installation

1. Start the system installation by booting from the Windows NT disk:
  - a) Floppy install: boot the system with the Windows NT installation diskettes.
  - b) Floppyless install: boot from floppy and type **"WINNT/B"**. After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
  - c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
2. When the "Windows NT Setup" window is generated, press **"S"** to Specify an Additional Device(s).
3. Press **"O"** to select **"Other"** and press the **"Enter"** key.
4. Insert the RAID driver diskette into drive A: and press the **"Enter"** key.
5. Choose **"WinNT Promise FastTrak100 (tm) Lite Controller"** from the list that appears on screen, then press the **"Enter"** key.
6. The Windows NT Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include **"WinNT Promise FastTrak100 (tm) Lite Controller"**.  
*NOTE: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.*
7. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.
8. After a successful installation, the "SCSI Adapter Setup" box will show that the "WinNT Promise FastTrak100 (tm) Lite Controller" driver has been installed.

## 4.6 Using The FastCheck™ Monitoring Utility

Please load the utility from RAID utility diskette and refer to the installation.doc file that in \PROMISE\20265\RAID-UTILITY directory from CD Driver Disk for more information.

## Appendix A. How to setup the RAID IDE

### Introduction

#### Disk Array Terms

##### Disk Array Description

A “disk array” is formed from a group of 2 or more disk drives which appear to the system as a single drive. The advantage of an array is to provide better throughput performance and/or data fault tolerance. Better performance is accomplished by sharing the workload in parallel among multiple physical drives. Fault tolerance is achieved through data redundant operation where if one drive fails or has a sector failure, a mirrored copy of the data can be found on another drive.

For optimal results, select identical Ultra ATA/100 drives to install in disk arrays. The drives’ *matched performance* allows the array to function better as a single drive.

##### Disk Array Member

The individual disk drives in an array are called “members.” Each member of a specific disk array is coded in their “reserved sector” with configuration information that identifies the drive as a member. All disk members in a formed disk array are recognized as a single physical drive to the system.

##### Disk Array Types

For most installations, the FastBuild™ setup “<1> Auto Setup” option will configure your system.

There are two disk array types that can be installed on the RAID IDE. Striping is in the Performance type and Mirroring is in the Fault Tolerance type.

Disk arrays within the Performance and Fault Tolerance categories conform with the Redundant Array of Independent Disks technology, or RAID. The RAID levels supported are 0 or 1.

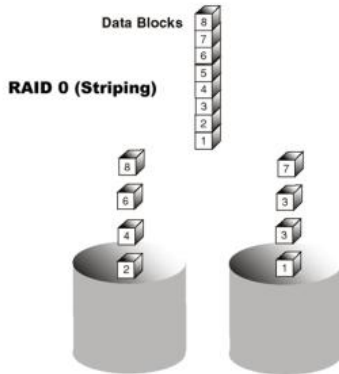
RAID Level	Performance	Capacity	# of Drives
RAID 0 (Striping)	Highest	# Drives x Smallest Size	2 to 4
RAID 1 (Mirroring)	Normal	50% min	2

### About RAID Levels

#### Striping (RAID 0)

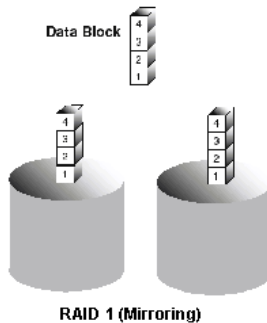
Reads and writes sectors of data interleaved between multiple drives. When any disk member fails, it affects the entire array. Performance is better than a single drive since the workload is balanced between the array members. This array type is for high performance systems. Identical drives are recommended for performance as well as data storage efficiency. The disk array data capacity is equal to the number of drive members times the smallest member capacity. For example, one 1GB and three 1.2GB drives will form a 4GB (4 x 1GB) disk array.

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



### Mirroring (RAID 1)

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



On the next reboot, the FastBuild™ utility will display an error in the array and recommend to replace the failed drive. Users may choose to continue using their PC, however we recommend replacing the failed drive as soon as possible.

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

### Keys Features and Benefits

The following information offers an overview of the major features of the RAID IDE.

Advanced Hardware Design & Compatibility	
Features	Benefits
Supports data striping (RAID 0) or mirroring (RAID 1)	Provides dramatic increase in drive performance and/or fault tolerant options. Offers performance customization and data rebuilds from the BIOS menu.
Supports Ultra DMA 5/4/3/2/1/0, DMA 2/1/0	Burst data transfer rates up to 100MB/sec from Ultra ATA/100 drives to boost overall system performance.
PCI Plug-n-Play, PCI Interrupt sharing and coexists with motherboard IDE controllers	Easy to install; still supporting 4 devices on motherboard IDE controller.
Supports concurrent dual IDE controller operation	Drive workload is distributed in parallel between members of the array.
Supports IDE bus master operation	Allows multitasking during disk transfers which increase CPU efficiency. The CPU is free to process tasks during IDE data transfers through the PCI Bus to/from system memory.
Utilizes FastBuild™ automenu from the onboard BIOS	Offers pre-set application specific settings which can be optimized for Desktop, Server, or A/V Editing. Has "Auto Setup" option for quick and easy array builds.
Displays status and error checking messages during bootup	Notifies user of possible errors and allows for recovery of mirrored drive arrays directly from FastBuild™.
Employs the latest PCI Ultra ATA/100 ASIC technology.	Fully supports Ultra ATA/100 specifications with 100 MB/sec timing and CRC error-checking at high speeds.
Mirroring supports automatic background rebuilds	Fault tolerance can be restored automatically without rebooting
Complies with PCI v2.1 Local Bus standard	Provides highest level of hardware compatibility.
Compliant with PCI IDE Bus Master standard. PCI IDE Bus Master support for Windows 98/95/ME/2000, Windows NT 4.0	Provides 32-bit I/O, IDE Bus Master, and Ultra ATA performance for optimal system performance.
Compatible with Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and Fast ATA-2 drives supporting multi-word DMA	Works with newest and current IDE drive specifications.
Features LBA and Extended Interrupt13h drive translation in controller onboard BIOS	Breaks capacity barriers for support of drives greater than 8.4GB in capacity. Offers flexible storage options for space demanding applications.

## Getting Started

This section is designed to get you started for installation of your RAID IDE.

The Channel 1 in FastBuild BIOS stands for IDE3. The Channel 2 in FastBuild BIOS stands for IDE4.

### Installing The Hard Drives

**WARNING:** If you wish to include your current bootable drive using the Windows NT 4.0 or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array, please load driver from driver diskette.

Hard drives must be Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and/or Fast ATA-2 compatible to operate with the RAID IDE. For optimal performance, install all **identical** drives of the same model and capacity. The drives' **matched performance** allows the array to function better as a single drive.

1. We recommend using identical drives as part of a RAID array. If striping for performance, use up to two new drives. If mirroring for protection, you can use two new drives OR use an existing drive and a new drive (the

new drive must be the same size or larger than the existing drive).

2. Install the hard drives into the hard drive bays of your system, including the power cables.
3. Attach one Ultra ATA cable to each hard drive. Then attach one cable to each of the IDE3 and IDE4 connectors. The colored edge of the cable(s) indicates pin 1, and the blue cable connector must be attached to the IDE3 and IDE4 connector.

**NOTE:** You must use an 80-wire, 40-pin cable when connecting an Ultra ATA/100 hard drive to the IDE3 and IDE4 connector. The motherboard package contains two 80-wire, 40-pin cables.

## Checking CMOS Settings

No changes are necessary in the Motherboard CMOS Setup for resources or drive types. Since the RAID IDE is a PCI Plug-n-Play (PnP) device, the Interrupt and Port address resources are automatically assigned by the Motherboard's PCI PnP BIOS.

The RAID IDE system resources including port address, interrupt, and BIOS address are **automatically** determined by the system PnP BIOS. To customize IRQ settings, enter the Motherboard BIOS's Advanced PCI setup and follow the procedures. When the system is limited by IRQ resources, the RAID IDE can be set for the same IRQ as other PCI cards that support PCI interrupt sharing.

For the RAID to be the bootable IDE controller, confirm in the motherboard's Standard CMOS Features that the drive types (for *hard disk* drives) are set for "None" (see below). No changes are needed for CD-ROM drives that are attached to the motherboard IDE controller.

CMOS Setup Utility - Copyright ( C ) 1984 - 2000 Award Software  
IDE Primary Master

IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Primary Master	[None]	Menu Level >>
X Access Mode	[Auto]	To auto-detect the HDD's size, head... on This channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

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

## Creating Your Disk Array

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

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

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

FastTrak100 (tm) BIOS Version 1.xx (Build xxxx)  
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

No array defined . . .

Press <Ctrl-F> to enter FastBuild (tm) Utility



Or press <ESC> key to continue booting the system.

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

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Auto Setup Options Menu]

Optimize Array for:      Performance
Typical Application usage:  A/V Editing

[ Auto Setup Configuration ]

Mode..... Stripe
Drives used in Array..... 2
Array Disk Capacity..... 16126

[ Keys Available ]

[] Up [↓] Down [←, →, Space] Change Option [ESC] Exit [Ctrl-Y] Save
```

**NOTE:** If you wish to customize certain settings at a later time, you may do so by manually creating your array (see Using FastBuild Configuration Utility). Creating an Array for Performance

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

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

#### Creating a Security Array With New Drives

**NOTE:** The RAID IDE permits only two drives to be used for a single Mirrored array in Auto Setup. If more drives are physically attached to the card, the Mirroring option will not be available at all in Auto Setup.

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

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

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

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

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

- Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
- Once the arrayed drives have been formatted, proceed to the **Installing Driver** chapter to install your operating system and/or RAID driver.

### Creating a Security Array With An Existing Data Drive

**NOTE:** The RAID IDE permits only two drives to be used for a single Mirrored array in Auto Setup. If more drives are physically attached to the card, the Mirroring option will not be available.

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

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

**WARNING:** If you wish to include your current bootable drive using the Windows NT 4.0 or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array, please load driver from driver diskette.

Follow these steps:

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

```

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

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

```

                Source Disk
Channel:ID      Drive Model      Capacity (MB)
                Target Disk
Channel:ID      Drive Model      Capacity (MB)
                [Please Select A Source Disk]
Channel:ID      Drive Model      Capacity (MB)
1 :Master      QUANTUMCR8.4A    8063
2 :Master      QUANTUMCR8.4A    8063
                [ ] Up [↓] [ESC] Exit [Ctrl-Y] Save
  
```

- Use the arrow keys to choose which drive contains the existing data to be copied.
- Press [Ctrl-Y] keys to Save selection and start duplication. The following progress screen will appear.

```

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

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

```

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

- Proceed to the **Installing Driver** chapter to install the FastTrak100 driver and/or operating system.

## Using FastBuild™ Configuration Utility

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

### Viewing RAID IDE BIOS Screen

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

```
FastTrak100 (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives . . . . .
```

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

```
FastTrak100 (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

ID   MODE  SIZE   TRACK-MAPPING   STATUS
1 *  2+0 Stripe   16126M   611/128/32     Functional

Press <Ctrl-F> to enter FastBuild (tm) Utility....
```

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

**Functional** - The array is operational.

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

**Offline** - A mirrored array has 2 drives that have failed/disconnected or a striped array has 1 drive that has failed or been disconnected. When the array condition is "offline," the user must replace the failed drive(s), then restore data from a backup source.

### Navigating the FastBuild™ Setup Menu

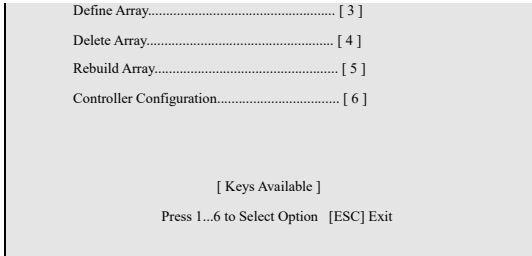
When using the menus, these are some of the basic navigation tips: Arrow keys highlights through choices; [Space] bar key allows to cycle through options; [Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

#### Using the Main Menu

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

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Main Menu ]

Auto Setup..... [ 1 ]
View Drive Assignments..... [ 2 ]
```



To create a new array automatically, follow the steps under “Creating Arrays Automatically”. We recommend this option for most users.

To manually create an array or define an array as bootable, follow the steps under “Manually Creating Arrays”. You will need to manually create an array if you wish to modify block size.

To view drives assigned to arrays, see “Viewing Drive Assignments”.

To delete an array (but not delete the data contained on the array), see “Deleting An Array”.

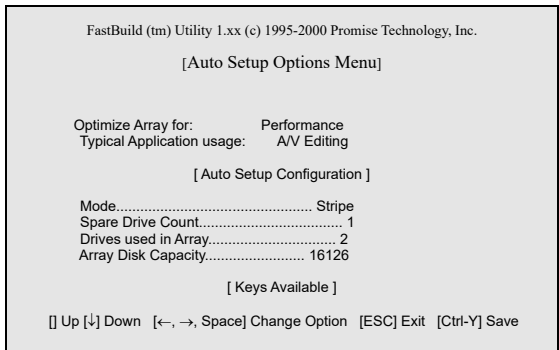
To rebuild a mirrored array, see “Rebuilding an Array”.

To view controller settings, see “Viewing Controller Configuration”.

**NOTE:** After installing the RAID IDE and configuring an array using FastBuild, you should FDISK and format the arrayed drive(s) if you are using new, blank drives.

**Creating Arrays Automatically**

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



**Optimize Array For**

Select whether you want Performance (RAID 0) or Security (RAID 1) under the “Optimize Array for” setting.

**Performance (RAID 0 Striping)**

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

**Security (RAID 1 Mirroring)**

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

***NOTE:** Under the Security setting, the RAID IDE permits two drives to be used for a single Mirrored array in Auto Setup.*

## Defining Typical Application Usage

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

## Viewing Drive Assignments

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

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

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ View Drive Assignments ]
Channel:ID Drive Model Capacity(MB) Assignment Mode
1 : Master QUANTUMCR8.4A 8063 Array 1 U5
2 : Master QUANTUMCR8.4A 8063 Array 1 U5
[ Keys Available ]
[ ] Up [v] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)
```

## Manually Creating an Array

The Define Array <3> option from the Main Menu allows users to begin the process of manually defining the drive elements and RAID levels for one or multiple disk arrays attached to RAID IDE.

***NOTE:** For most installations, we recommend the <1> Auto Setup for easy disk array creation.*

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Define Array Menu]
Array No RAID Mode Total Drv Capacity(MB) Status
* Array 1 Stripe 2 16126 Functional
Array 2 --- --- --- ---
Array 3 --- --- --- ---
Array 4 --- --- --- ---
[ Keys Available ]
Note: * --- Bootable Array
[ ] Up [v] Down [ESC] Exit [Enter] Select [Space] Change Boot Drive
```

1. To manually create an array from the Define Array Menu, use the arrow keys to highlight the array number you wish to define, and press [Enter] to select.
2. The Define Array Definition Menu will next appear that allows drive assignments to the disk array (see below).

## Selecting Array Type

1. Under the Definition section of this menu, highlight the Array # for which you want to assign a RAID level.
2. Use the [Space] key to cycle through three array types: Performance (RAID 0 Striping) or Security (RAID 1 Mirroring)

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Define Array Definition Menu ]

Array No  RAID Mode  Total Drv      Capacity(MB)
Status
Array 1    Stripe      2          16126      Functional

Stripe Block: 64 KB

[ Drive Assignments ]

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

[ Keys Available ]

[ ] Up [↓] Down [ESC] Exit [Space] Select [Ctrl-Y] Save
```

## Selecting Stripe Block

For RAID 0 Striped arrays only, you may manually select the “stripe block size.” Use the Spacebar to scroll through choices progressing as follows (1, 2, 4, 8, 16 . . . 1024).

The size selected affects how RAID IDE sends and retrieves data blocks from the drives. You will need to perform your own testing to determine how the data block size is affecting your particular use of the array. In general, a larger block size is better when handling large data transfers (such as in A/V editing or graphics) while a smaller block size is better when handling e-mail and other common server data. The default is 64K.

## Assigning Drive(s) to Array

1. Under the [ Drive Assignments ] section, highlight a drive using the [ ] Up [↓] keys.
2. With the [Space] bar key, change the Assignable option to “Y” to add the drive to the disk array.
3. Press <Ctrl-Y> to save the disk array information. Depending on the array type selected, the following scenarios will take place:
  - a) If choosing a Striping, the initial Define Array Menu screen will appear with the arrays defined. From there you may ESC to exit and return to the Main Menu of FastBuild.
  - b) If you selected a Mirroring array for two drives, there is an additional window that appears as described in order to create the array. To do this you will use either two brand new drives, or one drive that contains existing data that you wish to mirror.

## Creating A Mirrored Array Using New Drives

As described in the Drive Assignments Option section above, if you selected a mirroring array and wish to use two new assigned drives, follow the directions here.

1. After assigning new drives to a Mirroring array and saving the information with <Ctrl-Y>, the window below will appear.

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

2. Press “N” for the Create Only option.

- A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

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

### Adding Fault Tolerance to an Existing Drive

The RAID IDE will create a mirrored array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.

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

**WARNING:** If you wish to include your current bootable drive using the Windows NT 4.0 or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array, please load driver from driver diskette.

- After assigning the drives to a Mirroring array, press <Ctrl-Y> keys to Save your selection. The window below will appear.

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

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

Source Disk		
Channel:ID	Drive Model	Capacity (MB)
Target Disk		
Channel:ID	Drive Model	Capacity (MB)
[Please Select A Source Disk]		
Channel:ID	Drive Model	Capacity (MB)
1 :Master	QUANTUMCR8.4A	8063
2 :Master	QUANTUMCR8.4A	8063
[ ] Up [↓] [ESC] Exit [Ctrl-Y] Save		

- Use the arrow keys to choose which drive contains the existing data to be copied.

**WARNING:** All target drive data will be erased. Make sure you choose the correct drive.

- Press [Ctrl-Y] keys to Save selection and start duplication. The following confirmation screen will appear.

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

- Select "Y" to continue. If you choose "N", you will be returned to step 1.
- Once "Y" is selected, the following progress screen will appear. The process will take a few minutes.

Please Wait While Duplicating The Image  
 0% Complete

- Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

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

## Deleting An Array

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

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

1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
2. The View Array Definition menu will appear showing which drives are assigned to this array.
3. Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

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

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

## Rebuilding A Mirrored Array

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

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

Follow these steps BEFORE using the Rebuild Array menu option:

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

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.				
[ Rebuild Array Menu ]				
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	16126	Critical
Array 2	---	---	---	---
Array 3	---	---	---	---
Array 4	---	---	---	---

[ Keys Available ]

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

9. Highlight the array whose Status is "Critical".
10. Press [Enter]. The following screen will then appear.
11. Under [Select Drive for Rebuild], highlight the replacement drive.
12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.

Please Wait While Duplicating The Image  
10% Complete



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

### Viewing Controller Settings

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

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Adapter Configuration - Options ]
Halt On Error:      Enable
[ System Resources Configuration ]
Channel 1 (IDE1)    Interrupt : A      I/O Port : FFF0
Channel 2 (IDE2)    Interrupt : A      I/O Port : FFA8
[ Keys Available ]
[←, →, Space] Change Option [ESC] Exit
```

### Halting RAID IDE BIOS On Bootup Errors

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

### Viewing RAID IDE System Resources

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

In the rare case that there is a resource conflict, refer to the Motherboard BIOS documentation on changes on resources allocated to the RAID IDE.