

# CHAINTECH

## 9EJS1

**Intel® Socket 478  
Intel® 845PE + ICH4  
ATX Motherboard**

### **User's Manual**

Version 1.0



### *Declaration of Conformity*

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

The following designated product:

**EQUIPMENT: MAINBOARD**

**MODEL NO.: 9EJS1**

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

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

This declaration is given to the manufacturer:

CHAINTECH-EXCEL COMPUTER INC.  
4427 Enterprise St. Fremont, CA 94538, U.S.A.

<http://www.chaintech-excel.com>

Chaintech President: Simon Ho

Signature:

A handwritten signature in black ink, appearing to be 'Simon Ho', written over a horizontal line.

## **Federal Communications Commission Statement**

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

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

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

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

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

## **Canadian Department of Communications Statement**

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

## **Manufacturer's Disclaimer Statement**

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## **How this Guide is organized**

This manual contains the following parts:

### ● **Chapter 1: Introduction**

This chapter describes the features of the 9EJS1 motherboard. It includes brief descriptions of the special features of the motherboard and the new technology it supports.

### ● **Chapter 2: Hardware Setup**

This chapter lists the hardware setup procedures that you require to install a system component. It includes descriptions of the switches, jumpers and connectors on the motherboard.

### ● **Chapter 3: BIOS Setup Program**

This chapter tells how to change system settings through the BIOS Setup Menus. Detailed descriptions of the BIOS parameters are also provided.

### ● **Chapter 4: DRIVER Setup**

This chapter describes the contents of the supported CD that comes with the motherboard package.

### ● **Chapter 5: Audio Device Application**

This chapter will guide you through the Audio Device Application for the On-board audio CMedia 8738 Chip.

### ● **Chapter 6: Thiz-Linux Desktop 6.0 Setup Steps**

This chapter provides you the detailed installation procedure for the Thiz-Linux Desktop 6.0 Setup Steps.

### ● **Appendix:**

This chapter provides all the relevant information that you require on the motherboards. Ex. 80-Port POST Error Code List, IDE RAID Installation etc.

### ● **How to Contact CHAINTECH**

This chapter provides a detailed list of contact information for CHAINTECH worldwide.

## **Conventions used in this guide**

To make sure that you perform certain tasks properly, take note of the following symbols used through this manual.



### **WARNING**

**This will provide important information to prevent injury to you during the installation. Please be aware of the information that follows.**

### **NOTE**

**Tips and additional information to aid you.**

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## Chapter 1 Introduction

### 1-1 Product Specifications

#### Processor

- Supports Intel® Socket 478 CPU with Hyper-Threading Technology
- Supports Intel® Celeron / Pentium 4 system bus at 400/533MHz

#### Chipset

- Intel® 845PE + ICH4 Chipset, supports Hyper-Threading Technology.

#### Main Memory

- Supports two 184 pin DDR DIMMs up to 2GB.
- Supports PC 1600/PC2100/2700 DDR SDRAM modules.

#### Expansion Slots

- One universal-AGP slot for 4XAGP.
- Six 32-Bit PCI slots (v2.2 compatible).
- One CNR (Communication Network Riser) slot for modem, audio or LAN riser.

#### On-board audio CMedia 8738

- Full-duplex operation for simultaneous recording and playback
- 6 channel speaker audio supports
- Embedded 32OHM 5w earphone amplifier
- Supports MIDI and dual game ports
- 32 Voice HRTF 3D positional audio, CRL 3D supports MS Direct
- Sound3D, Aureal A3D and Creative EAX APIs
- Supports SPDIF

#### Ultra DMA-66/100 PCI IDE Controller

- Supports two IDE ports up to 4 ATAPI devices.
- Supports PIO Mode 4 up to 16.6MBps, Multi Mode 4 up to 66MBps, Multi Word Mode 5 up to 100MBps and Multi Word Mode 6 up to 133MBps with Bus Mastering.
- Bus-Mastering software drivers for all common multi-tasking operating systems.

#### On-board Promise IDE RAID Controller

- Promise PDC20276 IDE RAID controller supports extra two Ultra DMA66 / 100 / 133 IDE ports with RAID 0/1.

#### USB 2.0/1.1 Host Controller

- One EHCI USB 2.0 Controller and 2 UHCI USB 1.1 Controllers.
- Support total 6 USB 2.0 Ports (USB1.1 compatible).
- Support USB 2.0 High-Speed Device @480 Mb/s Transfer Rates.

#### On board Super I/O Controller

- ITE 8712 LPC I/O with system monitors hardware.
- Two UARTs support serial ports and IR function (up to 115.2Kbps) for HPSIR and ASKIR.
- One SPP/ECP/EPP parallel port.
- One floppy disk drive connector supports up to 2.88MB.
- Integrates smart card reader function and interface, to be qualified for meeting PC/SC standard.

#### Fast Ethernet/Home Networking Controller with MII Interface

- Onboard LAN chip RTL 8100B support 10/100Mb Fast Ethernet or 1/10Mb HomePNA 2.0.

#### Embedded system monitoring

- 8 external voltage inputs
- 2 temperatures sensing for CPU and system.
- 2 Fan speed (CPU and system) monitoring.

#### Boot-Block Flash ROM

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

#### On board VIA VT6306 IEEE 1394 Host Controller

- Serial bus data rates of 100, 200 and 400Mbps.
- IEEE P1394a compliant and IEEE Std 1394-1995
- Programmable ATA/ATAPI interface supporting PIO modes 0-4, DMA modes 0-2 and Ultra DMA modes 0-4.

**1-2 Package Contents**

This product comes with the following components:

- |                |     |
|----------------|-----|
| 1. Motherboard | x 1 |
| 2. I / O Panel | x 1 |
| 3. Round Cable |     |

**Include:**

- |                       |     |
|-----------------------|-----|
| - IDE Cable (60cm)    | x 2 |
| - Floppy Cable (60cm) | x 1 |

## 4. Audio KIT

**Include:**

- |                       |     |
|-----------------------|-----|
| - SPDIF kit           | x 1 |
| - 6channel kit        | x 1 |
| - Fiber Optical Cable | x 1 |

## 5. CBOX2™ Package

**Include:**

- |                            |     |
|----------------------------|-----|
| - 5-1/4" CBOX™2            | x 1 |
| - USB 10-pin Cable         | x 2 |
| - Front Audio 10-pin Cable | x 1 |
| - 80-Port 10-pin Cable     | x 1 |
| - IEEE-1394 8-pin Cable    | x 1 |
| - Zenith Emblem            | x 1 |
| 6. IEEE-1394 bracket       | x 1 |

## 7. Manual

**Include:**

- |   |     |
|---|-----|
| - User's Guide                          | x 1 |
| - EZ Manual                             | x 1 |
| 8. Digidoc 80-Port POST Error Code List | x 1 |

## 9. CD Box Package

**Include:**

- |   |     |
|---|-----|
| - Driver CD                               | x 1 |
| - Value-pack 2002                         | x 1 |
| - Thiz Linux (Asian and European Version) | x 2 |
| 10. Thermal grease pack                   | x 1 |
| 11. Zenith Key Chain                      | x 1 |

**1-3 CHAINTECH's Special Features:****CBOX™2, CHAINTECH's exclusive front panel.****Include:**

- |  |     |
|--|-----|
| - USB (1.1 / 2.0 compliant) Ext. ports | x 4 |
| - Earphone (Ø 3.5mm) phone jack        | x 1 |
| - MIC – in (Ø 3.5mm) phone jack        | x 1 |
| - IEEE-1394 Ext. port                  | x 1 |
| - DigiDoc System Monitoring Display    | x 1 |
| - Green LED Display                    | x 1 |



CBOX™ 2

**One driver CD which includes.**

- Award DMI Utility for DOS
- Audio drivers and utilities for DOS/Win9x/NT/XP
- LAN driver for Win9x/Win2000/NT/XP
- USB2.0 Driver for Win 2000/XP.
- Intel Bus Master IDE and ATA drivers for Win9x/Win2000/XP

**Value Pack 2002 software pack:**

- Norton AntiVirus.
- Adobe ActiveShare.
- Acrobat Reader.
- Acrobat eBook Reader.
- Imagemore.
- AutoSave.

**Zenith Key Chain**



**Round Cable**

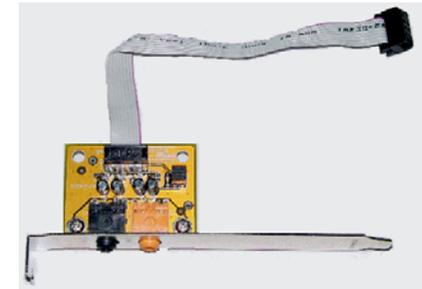


World's first **60cm Round Cable** bundle brought to you by CHANTECH, an innovative streamliner ribbon cable provides better overall system stability and neatness.

**SPDIF kit and Fiber Optical Cable**



**6channel kit**



**THIZ Linux CD**



**IEEE 1394**



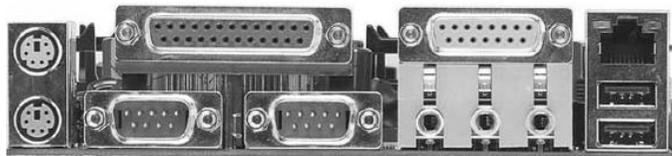
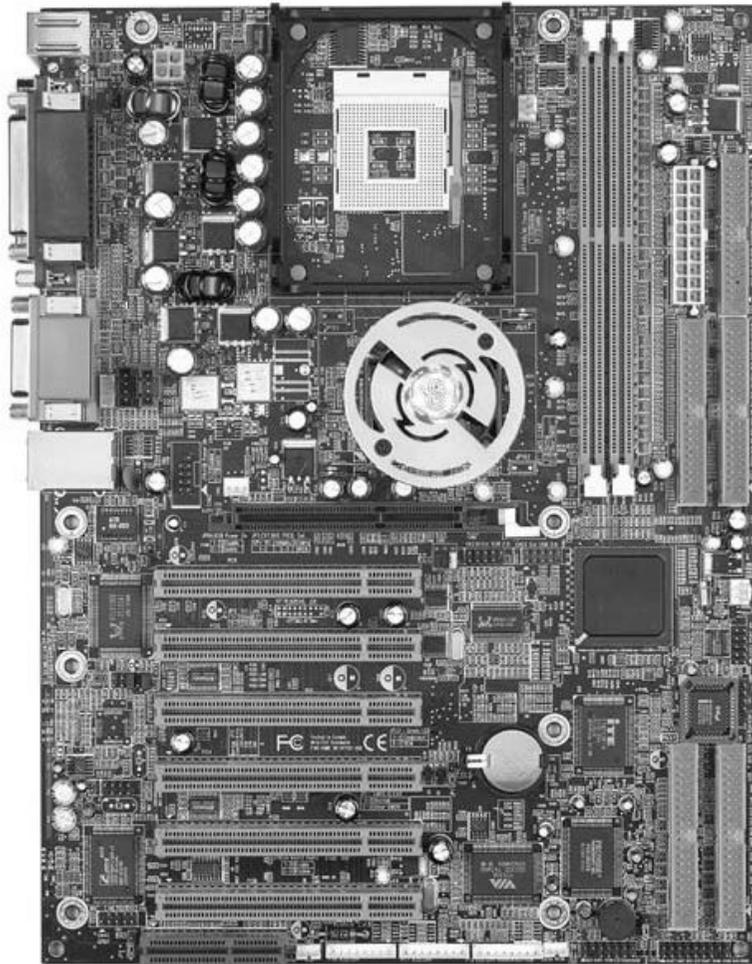
**USB2.0**



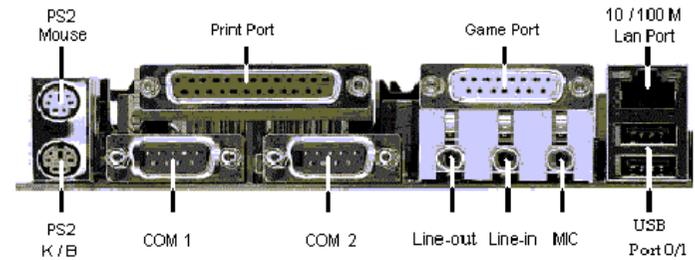
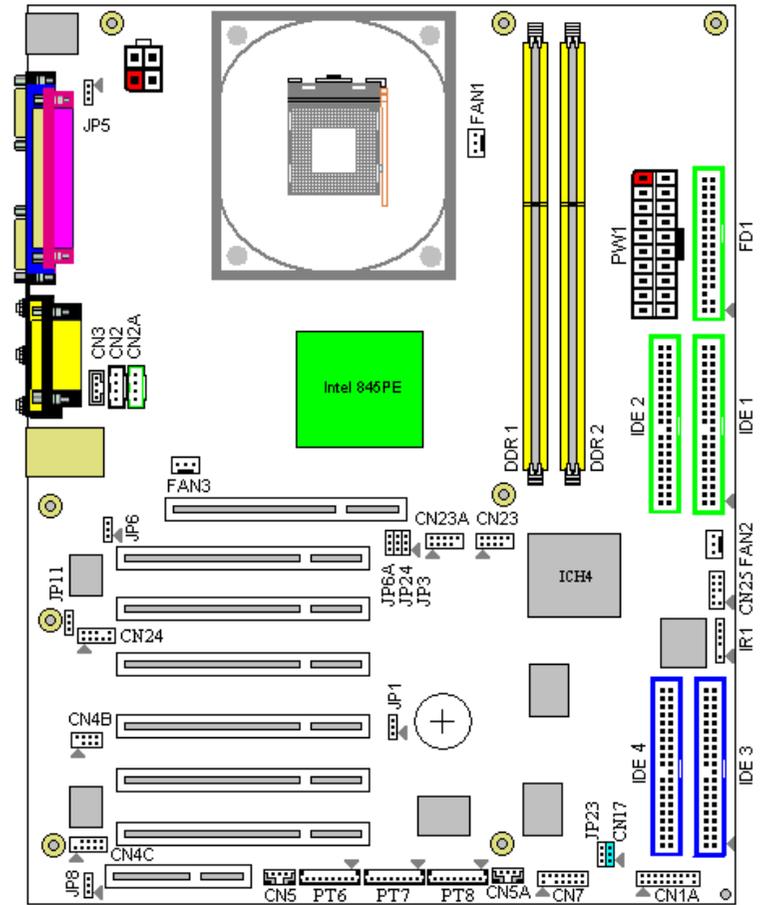
**RAID**



1-4 9EJS1 Motherboard Diagram



1-5 9EJS1 Motherboard Layout



## Chapter 2 Hardware Setup

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

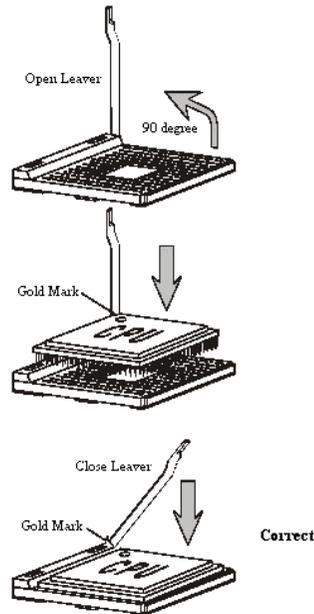


**This motherboard is electrostatic sensitive. Do not touch without wearing proper safety gadget and make sure to disconnect the power cable from the power source before performing any work on your motherboard. Not doing so may result in electrical shock!**

### 2-1 Installing a CPU Processor for Socket 478

The Intel® Socket 478, designed for the Pentium 4 processor, has been incorporated as a standard motherboard specification. This motherboard will support Intel® Pentium 4 CPUs with Hyper-Threading technology when available. To insert your CPU into Socket 478 please follow the steps below:

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



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



**In order to boot up with a newly installed CPU, AC Power must be switched off before installation.**

### 2-2 Setting your CPU's Parameters

#### “Hyper-Threading Functionality Requirement” Content

To enabling the functionality of Hyper-Threading Technology for your computer system you require **ALL** of the following platform components:

- **CPU:** An Intel® Pentium® 4 Processor with HT Technology;
- **Chipset:** An Intel® Chipset that supports HT Technology;
- **BIOS:** A BIOS that supports HT Technology and has it enabled; and
- **OS:** An operating system that supports HT Technology.

#### Frequency Configuration:

This motherboard uses a new user-friendly technology that enables the user to setup a main board's CPU parameters through an easy to use BIOS setup procedure. It is no longer necessary to make many jumper settings as on conventional motherboard. After installing all your hardware into your PC system, you can manually configure your CPU clock ratio and CPU clock according to your processor's specifications. By turning on your system's power. Enable the CMOS Setup Utility by pressing the delete key when your BIOS identification screen appears, then go to the Frequency/Voltage control option and select your CPU clock ration and CPU clock speed (please refer to Chapter3 for more details).

If you install a CPU on this motherboard, you must set the [External Clock Frequency] JP3 according to your processor (See Section 2.4).

#### How to Derive your CPU Core Speed?

- **CPU Core Speed = CPU Clock \* Core/Bus Ratio**



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

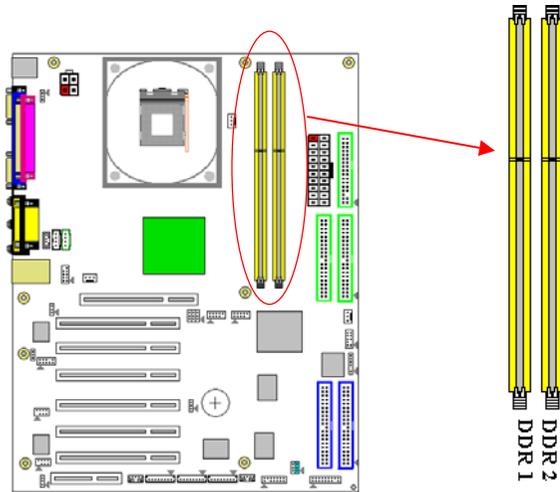
#### Overclocking:



**This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.**

### 2-3 Main Memory Configuration

This motherboard provides 2 184pin Double Data Rate (DDR) Dual Inline Memory Modules (DIMM) slots. Which supports PC 1600/PC2100/2700 DDR SDRAM modules up to 2GB. Install at least one DIMM module on the slots. Memory modules can be installed on the slots in any order. You can install either single- or double-sided modules to meet your own needs.



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

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

Therefore a maximum of 2GB is allowed on this motherboard.

To install your DDR Modules please follow the following steps:

1. Unlock a DIMM socket by pressing the retaining clips outward. The DDR Modules has only one notch at the center of module. The DDR module will only fit in the right position.
2. Insert the DDR Module vertically into the DIMM slot, with the correct alignment. Then push it in until the golden finger on the memory module is deeply inserted into the socket.
3. The plastic clip on each side of the DIMM slot will automatically close to hold the DDR Modules in place.

### 2-4 Connector and Jumper Reference Chart

Jump Connector	Function	Page
PW 1/2	ATX Power Supply Connector	13
CN1A	Front Panel (Power / Rest / SPK...etc.) Connector	14
FD1	Floppy Connector	15
IDE 1 / 2	IDE Hard-Disk Connector	16
IDE 3 / 4	IDE RAID Connector	16
JP1	CMOS Clear Jumper	17
JP5	Keyboard Power on Function Jumper	17
JP6/JP6A/JP24	Disable/Enable USB 0/1, 2/3, 4/5 Device Power ON Jumper	18
JP8	Onboard Audio Enable Function Jumper	18
JP11	On board LAN Enable/Disable Jumper	19
JP23	Green LED Mode Jumper	19
FAN 1/2/3	CPU/ System / North Bridge Cooling Fan Connector (12V)	20
CN2 / 2A	CD-ROM Audio-in Connector	20
CN3	Auxiliary Audio-in Connector	21
CN4B	6 Channel KIT Connector	21
CN4C	SPDIF KIT Connector	22
CN5 / 5A	Wake on LAN / Modem Connector	22
CN7	Smart Card Reader Connector	23
CN17	Blue LED Connector (5V)	24
CN23 / 23A	CBOX™2 Front USB Connector	24
CN24	CBOX™2 Front Audio Connector	25
CN25	CBOX™2 DigiDoc System Display Connector	25
IR1	IR Connector	26
PT6 / 7 / 8	IEEE1394 Connector	26
JP3	CPU Front Side Bus setting	27

## 2-5 Connector and Jumper Settings

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

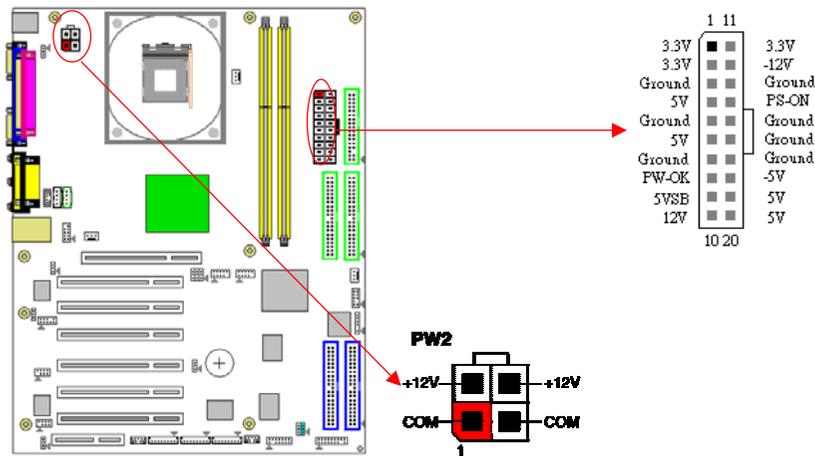


**The power supply connector is the last connection to be made while installing a motherboard. Before connecting the power supply, please make sure it is not connected to the power source.**



All cables that provided by CHAINTECH come with a security-proof.

### PW 1 / 2 (ATX Power Supply Connector):



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

The ATX 12V power supply has a new +12V (4-pin) and +5V / 3.3V (6-pin) auxiliary power connector. To enable the delivery of more +12 VDC and + 5/ 3.3V VDC current to the motherboard.

### Power-On By Modem:

While in Soft-Off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu. (See section 3. 5)

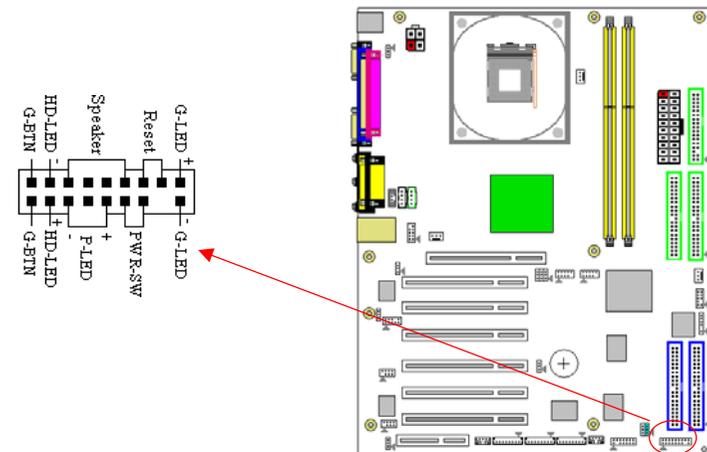
### Blinking LED in Suspend Mode:

While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu. (See section 3.5)

### Poly-fuse Over Current Protection:

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

### CN1A (Front Panel Connector):



#### 1. PWR-SW (Over-ride Power Button Connector):

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

When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurrence of external activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more

than [4 seconds] will switch the system completely off. See Over-ride Power Button Operation diagram.

2. **P-LED** (Power LED Connector):

The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)

3. **G-BTN/G-LED** (Green Button Switch/LED Connector):

Some ATX cases provide a Green button switch, which is used to put the system in Suspend mode. In Suspend mode, the power supply to the system is reduced to a trickle, the CPU clock is stopped, and the CPU core is in its minimum power state. The system is woken up whenever the keyboard or mouse is touched. The system resumes in different ways as defined by Power Management Setup screen in BIOS.



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

4. **RESET** (System Reset Switch Connector):

This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

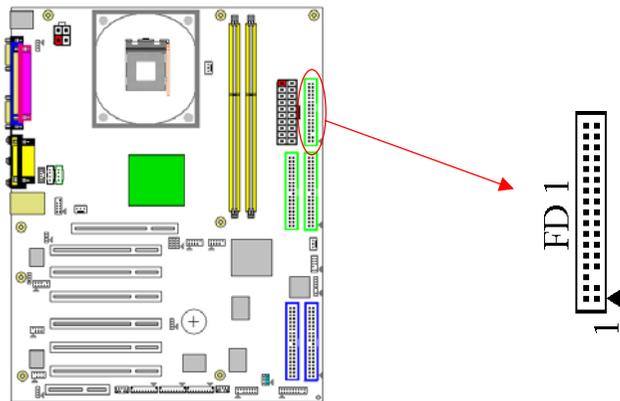
5. **SPEAKER** (Speaker Connector):

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

6. **HD-LED** (IDE Activity LED Connector):

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

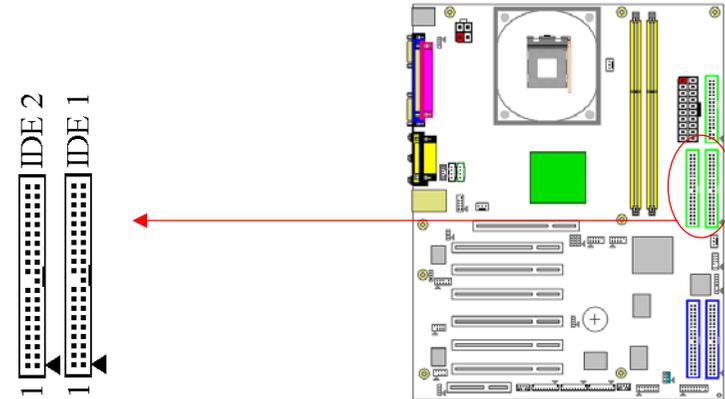
**FD1 (Floppy Connector)**



The motherboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types, use this connector to

connect 34 pins of Floppy.

**IDE 1/2 (IDE Hard-Disk Connector)**

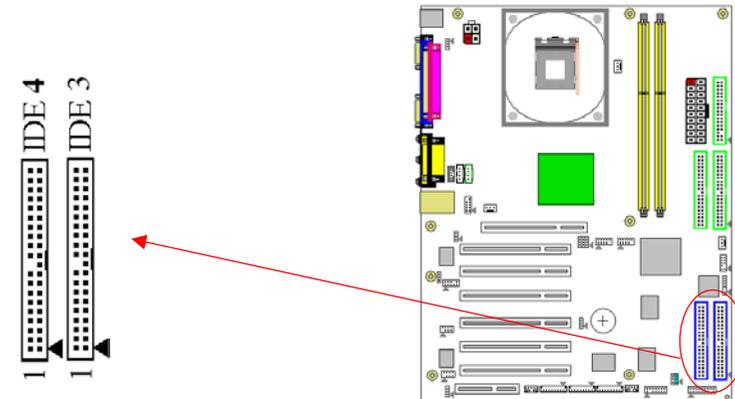


The motherboard has a 32-bit Enhanced PCI IDE and Ultra ATA66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra ATA66/100 function. This connector is used for connecting 40 pins of ATAPI devices.

IDE 1 only connects two IDE devices. (**Primary** Master/Slave)

IDE 2 only connects two IDE devices. (**Secondary** Master/Slave)

**IDE 3/4 (IDE RAID Connector)**



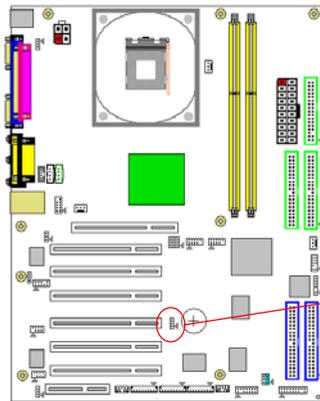
This connector is used for connecting IDE HDD, which builds IDE RAID.

IDE 3 only connects two IDE RAID devices. (**Primary** Master/Slave)

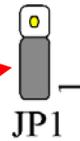
IDE 4 only connects two IDE RAID devices. (**Secondary** Master/Slave)



**Setup problem, please refer to Appendix IDE RAID**

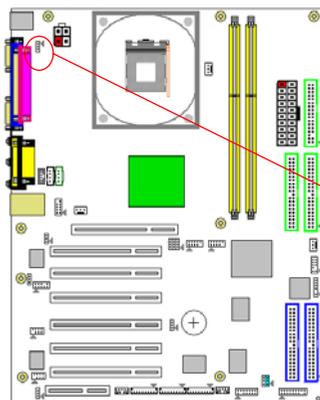
**JP1 (CMOS Clear Jumper):**

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

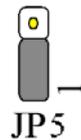


There is a CMOS RAM on board that has a power supply from external battery to keep the data and system configuration. To clear the contents of the CMOS, please follow the steps below.

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

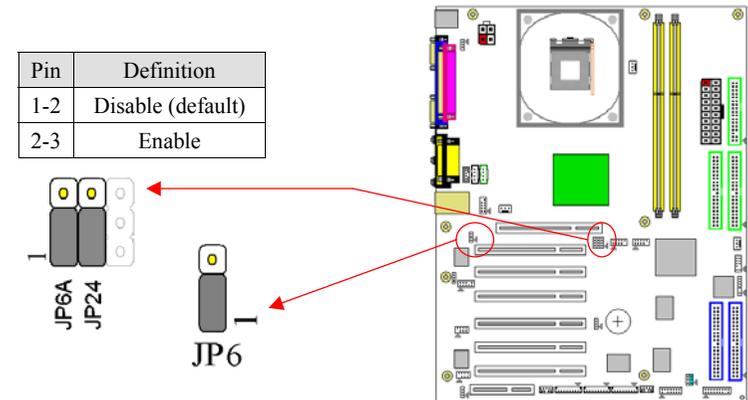
**JP5 (Keyboard Power On Function Jumper):**

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

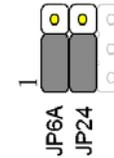


This board can be turned on by the PS / 2 keyboard (hot key). To use this function, select a hot key of your choice at the PS2KB Wakeup option under Wake Up Events

in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

**JP6/JP6A/JP24 (Enable/Disable USB 0/1, 2/3, 4/5 Device Power ON Jumper)**

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

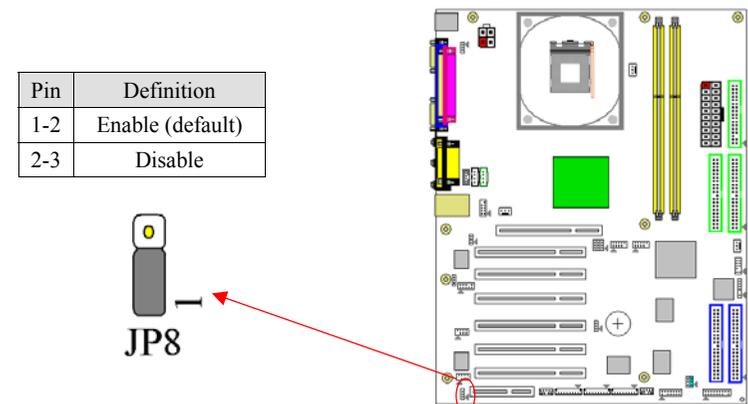


**JP6 → USB 0/1**

**JP6A → USB 2/3**

**JP24 → USB 4/5**

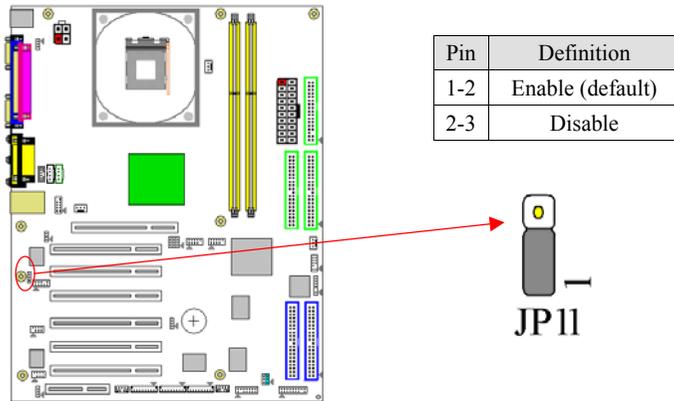
A USB keyboard hot key or a USB mouse click can turn on this board. To use this function, select a hot key of your choice at the USB Resume from S3 option under Wake Up Events in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

**JP8 (Onboard Audio Enable/Disable Function Jumper):**

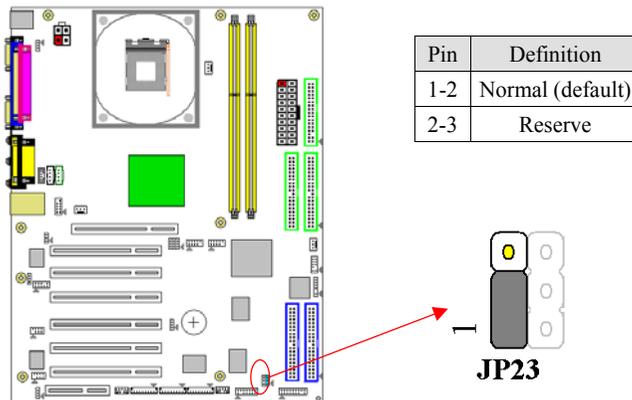
Pin	Definition
1-2	Enable (default)
2-3	Disable



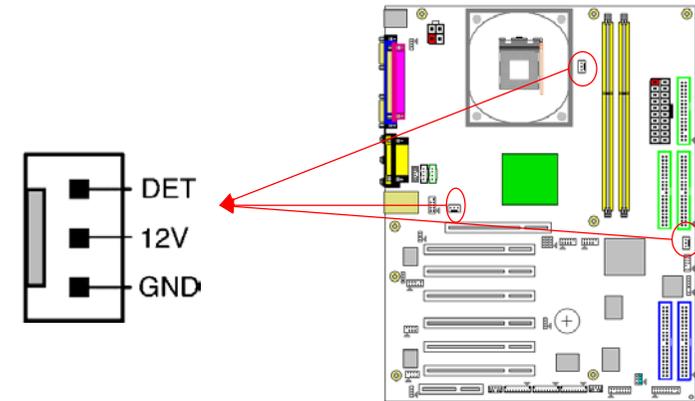
This function allows you to enable or disable the on board audio. You must set the jumper cap to pins 1-2 to **enable** or set pins 2-3 to **disable** this function.

**JP11 (On board LAN Enable/Disable Jumper):**

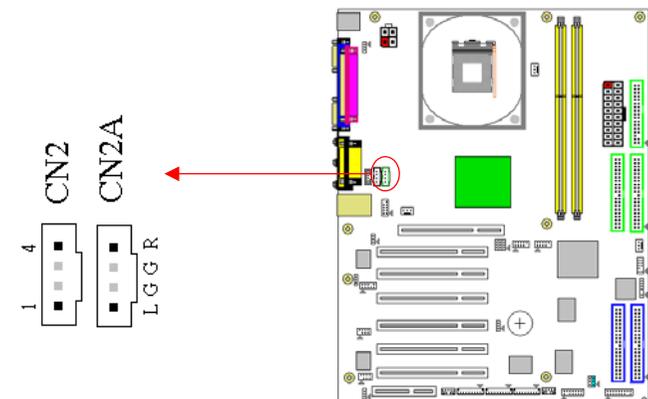
This Function allows you to enable or disable the on board LAN. You must set the jumper cap to pins **1-2** to **enable** or set pins **2-3** to **disable** this function.

**JP23 (Green LED Mode Jumper):**

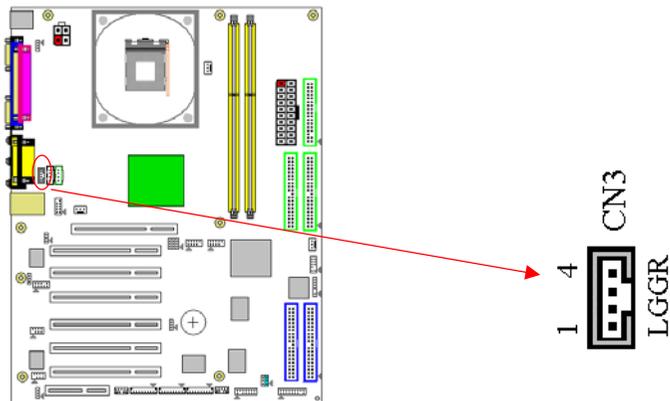
This cap is to setup Green LED flash mode. (Optional)

**FAN1/FAN2/FAN3 (CPU/System/ North Bridge Cooling Fan Connectors):**

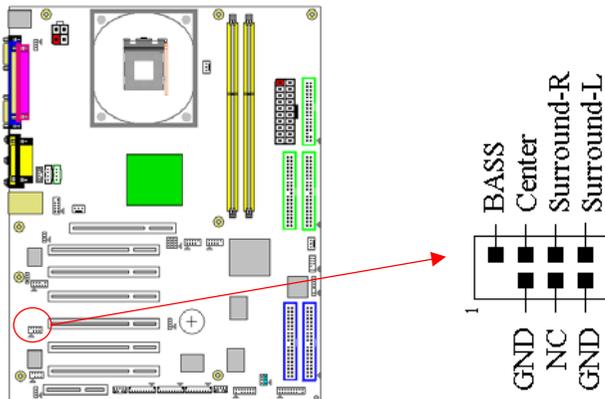
The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal. Connect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

**CN2/CN2A (CD-ROM Audio-in Connector):**

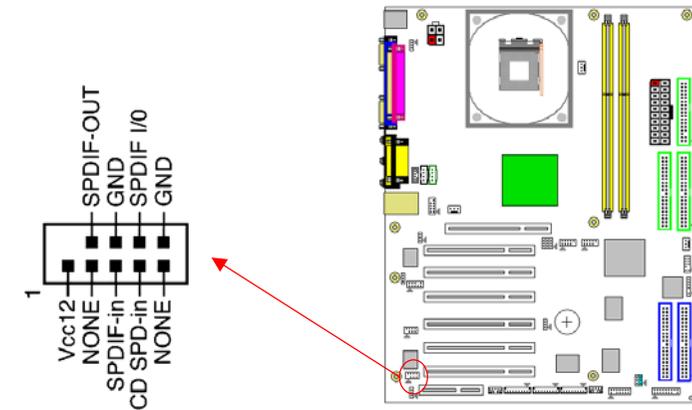
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your motherboard. This will enable your CD-ROM's audio function.

**CN3 (Auxiliary Audio-in Connector):**

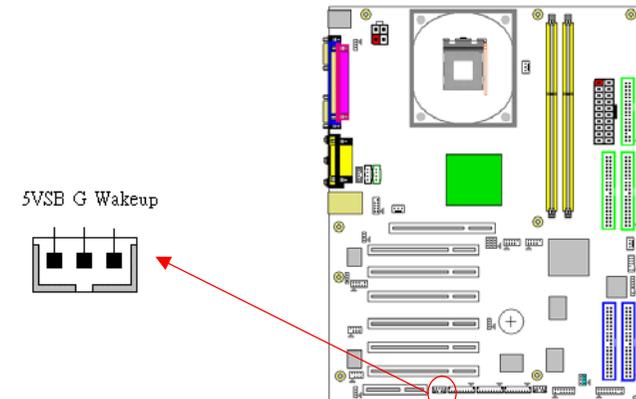
This connector is for Auxiliary Audio-in Device.

**CN4B ( 6 Channel KIT Connector):**

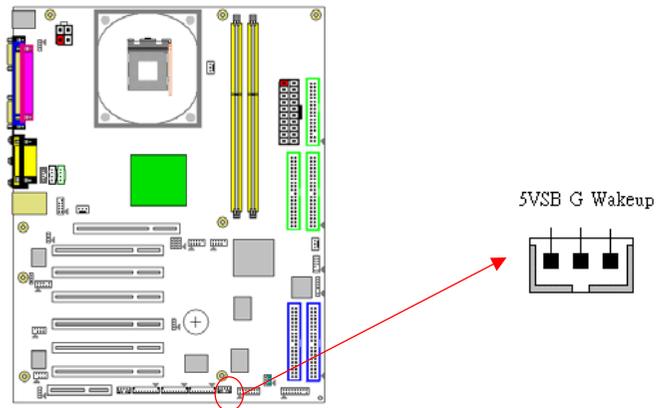
This connector is for Surround and Center + Bass speaker output ext. Plug in the optional AC3 Surround/Center + Bass jack extension or the **6-channel bracket** into this connector. The black colored jack is for center + Bass speaker output.

**CN4C (SPDIF KIT Connector):**

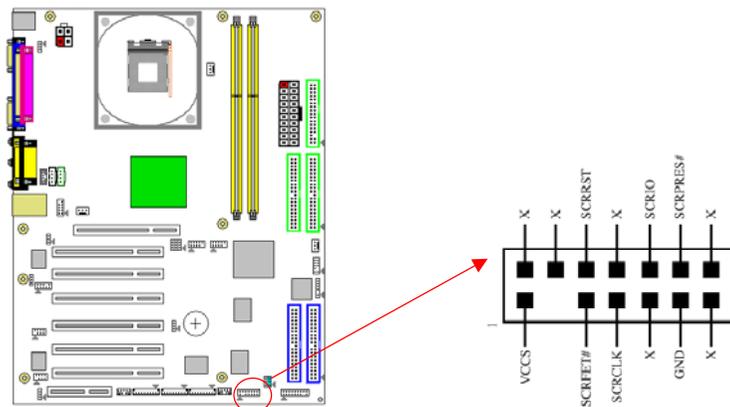
The SPDIF-in/ out connector supports the digital audio. This connector must be connected to the cable from an external device. Connect the **SPDIF bracket** to this connector.

**CN5 [WOL (Wake-on-LAN) Connector]:**

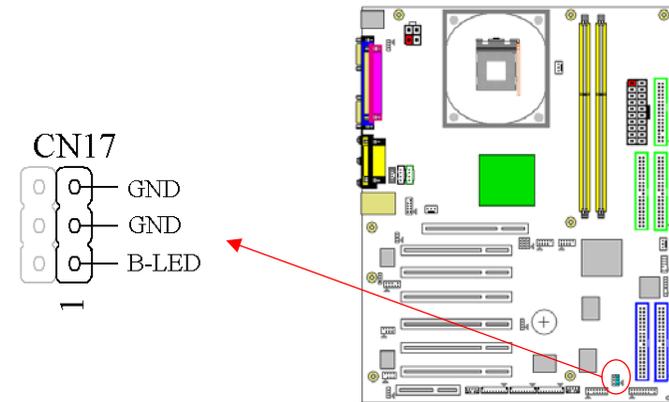
Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL capability to LAN controller. This header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

**CN5A [WOM (Wake-on-Modem) Connector]:**

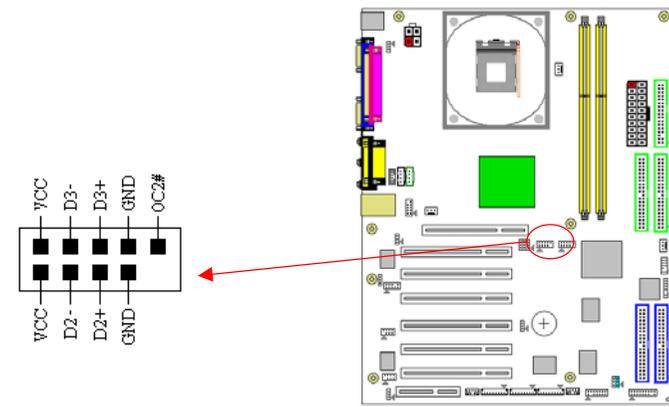
Enable the Wake Up On Modem selection in BIOS's Power Management Menu to use this function. This header is used to connect an add-in modem card, which gives WOM capability to the motherboard.

**CN7 (Smart Card Reader Connector):**

This connector must be connected to an optional Smart card reader.

**CN17 (Blue LED Connector):**

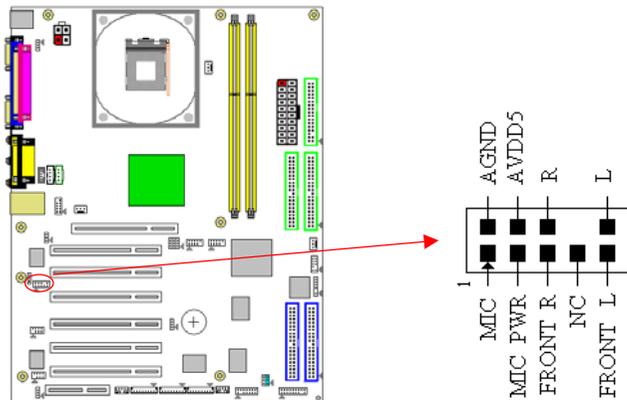
These features work entirely the same as the power indicator LED, both shows the system's power status. The only difference is that this one is blue while the other is red LED.

**CN23/CN23A (CBOX™ 2 Front USB Connector for USB 2/3 and 4/5):**

**USB Port 2/3 → CN23**

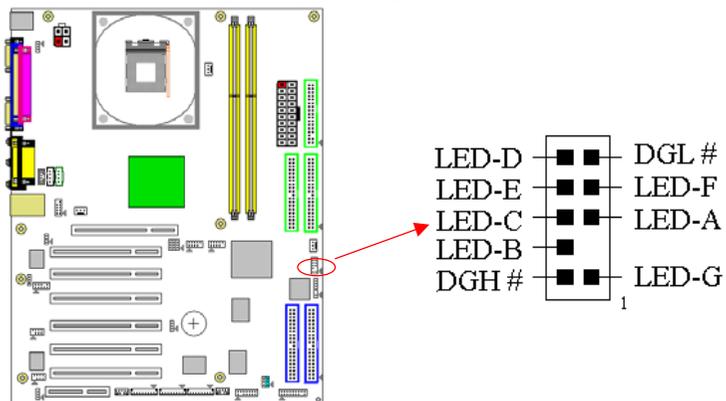
**USB Port 4/5 → CN23A**

If you want to use a USB Keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3.4). This board contains a USB Host controller and includes a root hub with two connectors for optional USB Adaptor (USB 2/3 and 4/5).

**CN24 (CBOX™ 2 Front Audio Connector):**

This connector give you the option of a front panel audio jack cable ext. to be plug into a special custom designed system case.

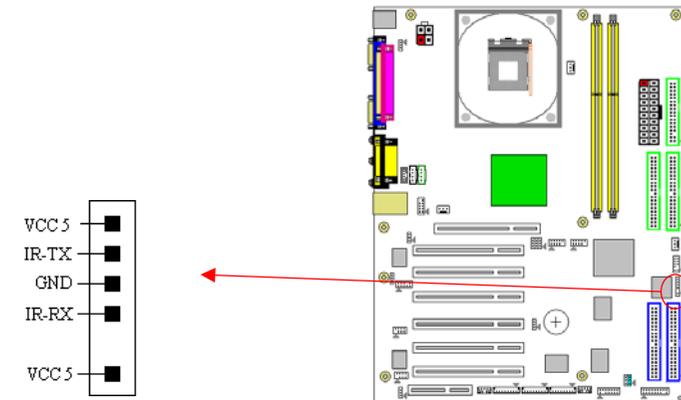
Simply remove the two jumper caps at pin [5-6] and [9-10] then plug it into the (optional) cable ext. connector. Pin [5-6] and [9-10] are shorted (default) to enable the back panel audio function.

**CN25 (CBOX™ 2 DigiDoc System Display Connector):**

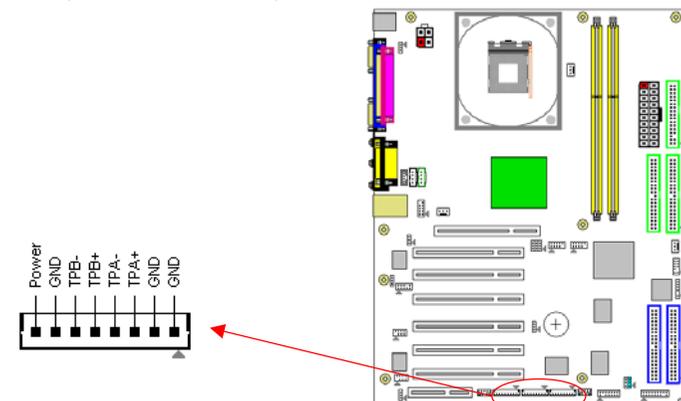
CBOX™ 2 features CHAINTECH's exclusive DigiDoc, the most advance system diagnostic monitoring display.

- 80-PORT diagnostic display during POST at system boot up!
- CPU temperature monitoring, your system stays cool always!
- DigiDoc is the doctor for your system!

Please refer to Appendix **Digidoc 80-Port POST Error Code List** for the detail.

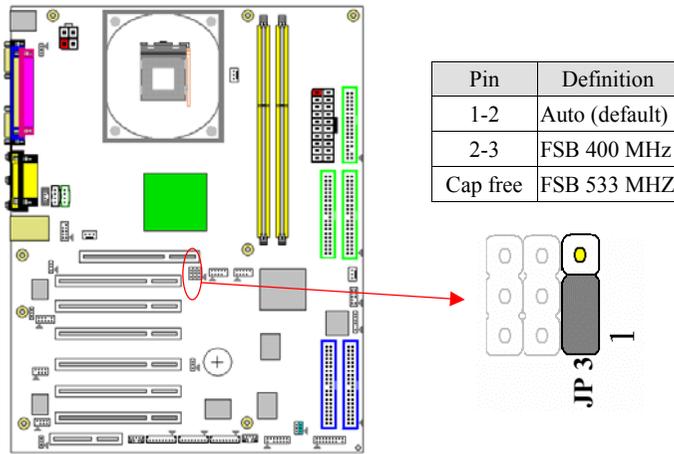
**IR 1 (IR Connector):**

Select a UART Mode in BIOS's Integrated Peripherals menu the UART port to support IR function. (See section 3.4 Super I/O Device of **Integrated Peripherals**)

**PT 6 / 7 / 8 (IEEE1394 Connector)**

These connectors are for the bundled IEEE 1394 serial connector cables that connect to the IEEE 1394 bracket. Attach the cable to these connectors, and the CBOX™2 Front panel's IEEE 1394.

**JP3 (CPU Front Side Bus setting)**



This function allows you to set the CPU’s FSB, the default setting is at pin [1-2], which will automatically detect your CPU’s FSB. Set the cap at [2-3] to force the FSB at 400 MHz. Remove the cap to set the FSB at 533MHz.

 **It is recommended that you leave the default setting to prevent any burn out on your CPU.**

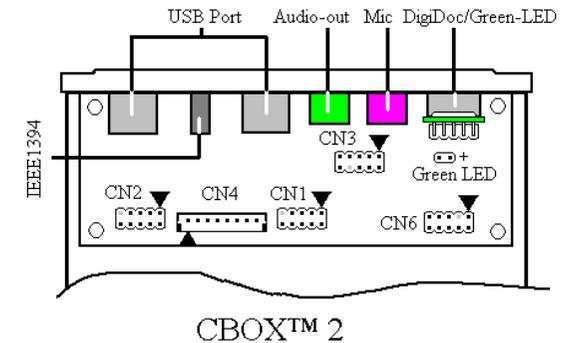
**2-6 CBOX™ 2 Setup**

1. Gently insert **CBOX™ 2** into the regular 5-1/4” drive bay at the front of system chassis and securely tighten the side screws.
2. Connect Motherboard to **CBOX™ 2**:

Function	Motherboard	CBOX™ 2
USB 2 & 3	JP6A	CN1
USB 4 & 5	JP24	CN2
*Front Audio	CN24	CN3
IEEE 1394	PT 6 / 7 / 8	CN4
Green Mode LED	CN1A	2 pin
80 Port Display	CN25	CN6

\* Remove CN24 Jumper Caps on motherboard 5-6, 9-10 before installation.

- |                              |     |
|------------------------------|-----|
| USB Cable (10 pin)           | x 2 |
| Front Audio Cable (10 pin)   | x 1 |
| IEEE-1394 Cable (8 pin)      | x 1 |
| 80 Port Display (10 pin)     | x 1 |
| Green Mode LED Cable (2 pin) | x1  |



 **All cables that provided by CHAINTECH come with a security-proof.**

## Chapter 3 BIOS Setup Program

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

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



Figure 3-1 Setup Program Initial Screen

### 3-1 Standard CMOS Setup

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

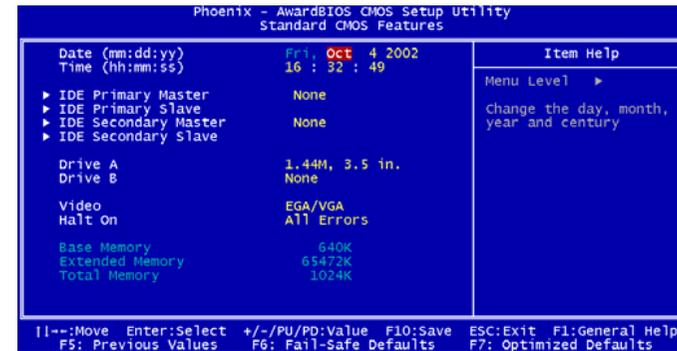


Figure 3-2 Standard CMOS Feature Screen

#### Date/Time:

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

#### IDE (Primary/Secondary; Master/Slave):

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

#### Drive A/B:

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

#### Video:

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

#### Halt On:

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

### 3-2 Advanced BIOS Features

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

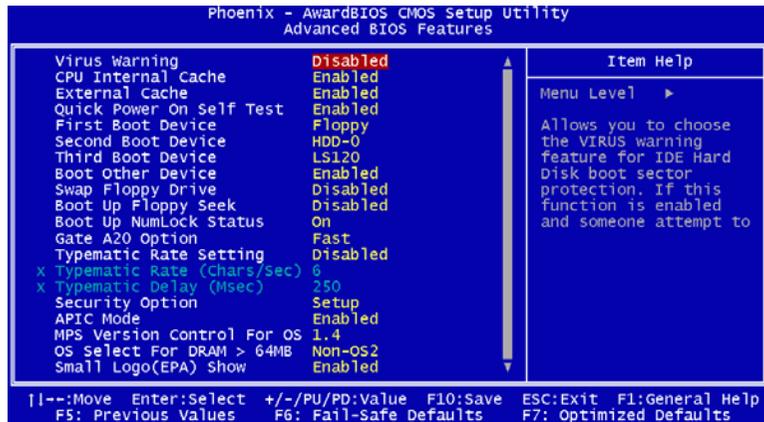


Figure 3-3 Advanced BIOS Feature Screen

#### Virus Warning:

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



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

#### CPU Internal Cache/External Cache:

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

#### Quick Power On Self Test (POST):

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

#### First/Second/Third/Boot Other Device:

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

#### Swap Floppy Drive:

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not include booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

#### Boot up Floppy Seek:

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

#### Boot Up NumLock Status:

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

#### Gate A20 Option:

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

#### Keyboard Interface :

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

#### Security Option:

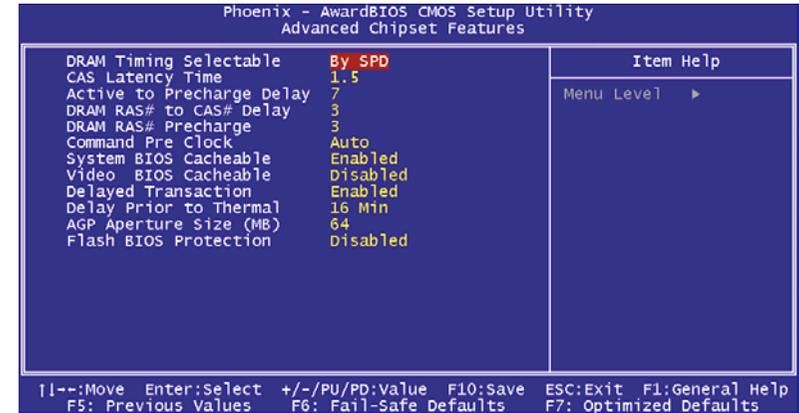
The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3.11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security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

**OS Select (For DRAM >64MB):**

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

**3-3 Advanced Chipset Features**

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



**Figure 3-4 Advance Chipset Features**

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

**AGP Aperture Size (MB):**

This function determines the amount of system memory that is given to the AGP card. Options range from **32MB** to **512MB**. This is a dynamic memory allotment in that the AGP card will only use the amount of memory that it needs. The remaining memory, which is not in use, will be available for the system. For example, if 16MB is allotted to the AGP card and the card only needs 8MB, the remaining 8MB will be available for system use.

**Flash BIOS Protection:**

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

### 3-4 Integrated Peripherals

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



Figure 3-5 Integrated Peripherals Screen

#### OnChip IDE Device:

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

OnChip IDE Channel0	Enabled
Primary Master PIO	Auto
Primary Slave PIO	Auto
Primary Master UDMA	Auto
Primary Slave UDMA	Auto
OnChip IDE Channel1	Enabled
Secondary Master PIO	Auto
Secondary Slave PIO	Auto
Secondary Master UDMA	Auto
Secondary Slave UDMA	Auto
IDE Prefetch Mode	Enabled
IDE HDD Block Mode	Enabled

#### 1. On Chip IDE channel 0/1:

You can set this to disable the On Chip IDE controller if you are going to add a higher performance IDE board

#### 2. IDE Primary/Secondary Master/Slave PIO:

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

#### 3. IDE Primary/Secondary Master/Slave UDMA:

Ultra DMA implementation is possible only if your IDE device supports it and your operating environment contains a DMA driver. If both your hard drive and software support Ultra DMA, select [**Auto**] to enable BIOS support.

#### 4. IDE Pre-fetch Mode:

The onboard IDE drive interfaces support s prefetching, for faster drive accesses. Set to [**Disabled**] if this primary or secondary

#### 5. IDE HDD Block Mode:

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode, select Enabled to auto-detect the optimal number of block read/writes per sector the drive can support.

#### OnChip PCI Device:

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

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

#### 1. AC97 Audio:

This feature allows you to enable/disable the on-board AC97 audio function.

#### 2. MC97 Modem:

This item allows you to enable/disable the MCP chipset's feature to support MC97 Modem.

#### 3. Onboard CMedia Audio:

This feature allows user to select 6 channels function, if that connect one **6ch Expansion kit** to motherboard.

#### Super IO Device:

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

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

Onboard FDC Controller	Enabled
Onboard Serial Port 1	3F8/IRQ4
Onboard Serial Port 2	2F8/IRQ3
UART Mode Select	Normal
UR2 Duplex Mode	Half
Onboard Parallel Port	378/IRQ7
Parallel Port Mode	SPP
ECP Mode Use DMA	3
Game Port Address	201
Midi Port Address	330
Midi Port IRQ	10

#### 1. Onboard FDC Controller:

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

#### 2. Onboard Serial Port 1/2:

Select an address and corresponding interrupt for the first and second serial ports. Available options are [3F8/IRQ4], [2E8/IRQ3], [3E8/IRQ4], [2F8/IRQ3], [Disabled], and [Auto].

#### 3. UART Mode Select:

This function allows you to select an operating mode for the second serial port. (Normal RS-232C serial port / IRDA / SCR / ASKIR 0.57-MB/sec infrared port)

#### 4. Onboard Parallel Port:

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

#### 5. Parallel Port Mode:

Select an operating mode for the onboard parallel (printer) port. Select SPP unless you are certain your hardware and software support one of the other available modes.

#### 6. ECP Mode Use DMA:

This item automatically specifies a DMA channel 1 or 3 for the parallel port when it is set to [EPP] or [ECP+EPP] mode.

#### 7. Game Port Address:

This item disables or assigns the address of the Game port. Available options are [201] and [209].

#### 8. Mini Port Address:

This item disables or assigns the address of the Midi port. Available options are [300] and [330].

#### 9. Mini Port IRQ:

This item specifies an IRQ for the Midi port.

#### USB Controller:

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

#### USB Keyboard Support:

Select Enabled if your system has a USB keyboard installed on the system board. If your system has no USB keyboard, select Disabled in this field.

#### Init Display First:

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

### 3-5 Power Management Setup

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

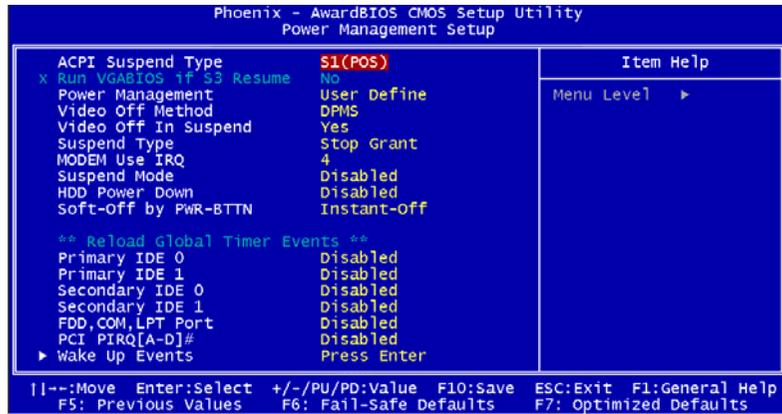


Figure 3-5 Power Management Setup

#### ACPI Suspend Type:

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

#### Power Management:

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

#### Video Off Method:

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

1. **Blank** - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.
2. **V/H SYNC+Blank** - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had

selected Blank. This function serves as both a screen saver and a power saver.

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

#### Video off in Suspend:

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

#### Modem Use IRQ:

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

#### Suspend Mode:

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

#### HDD Power Down:

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

#### Soft-Off by PBTN:

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

#### Wake up Events

##### 1. Power On PCI Card:

When enabled, a PCI interface that receives a signal will wake up the system from soft off and green mode.

##### 2. Power On by Modem:

When enabled, a Modem will be able to receive a signal and wake up the system from soft off and green mode. You should connect the modem to the COM port and call your PC to power on.

**3. Wake up on LAN:**

When enabled, a LAN that receives a signal will wake up the system from soft off and green mode.

**4. USB Resume from S3:**

Allows the activity of USB device to wake up the system from S3 power saving modes. Settings are [**Enabled**] and [**Disabled**].

**5. Power On by Alarm:**

When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day.

This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer.

**6. POWER ON FUNCTION:**

This control show the PS/2 mouse or keyboard can power on the system. Available settings are [**Password**], [**Hot KEY**], [**Mouse Move**], [**Mouse Click**], [**BUTTON ONLY**] and [**Keyboard 98**].

**3-6 PNP/PCI Configurations**

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

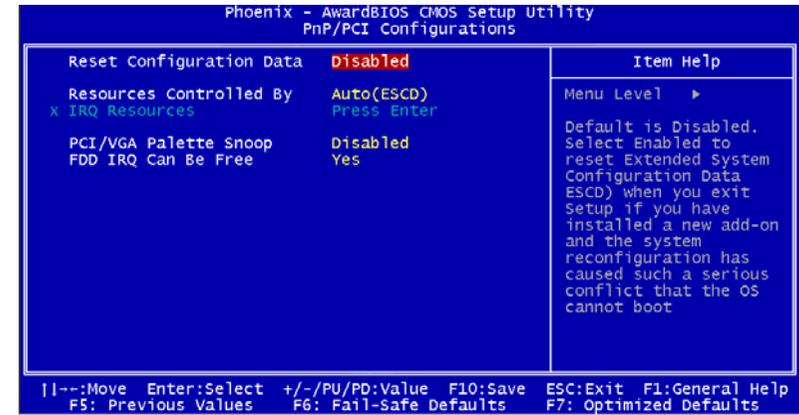


Figure 3-6 PNP/PCI Configurations

**Reset Configuration Data:**

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

**Resources Controlled By:**

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

**PCI/VGA Palette Snoop:**

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

**FDD IRQ Can Be Free:**

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

### 3-7 PC Health Status

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

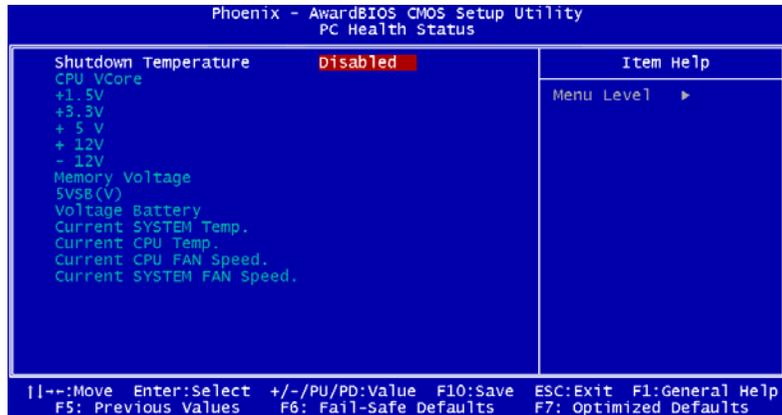


Figure 3-7 PC Health Status

#### Shutdown Temperature:

This item allows you to set the shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system. This function only works in ACPI-aware OS (such as Windows 98 / ME / 2000).

Available options are [70°C/158°F], [65°C/149°F] and [60°C/140°F]

### 3-8 Frequency/Voltage Control

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

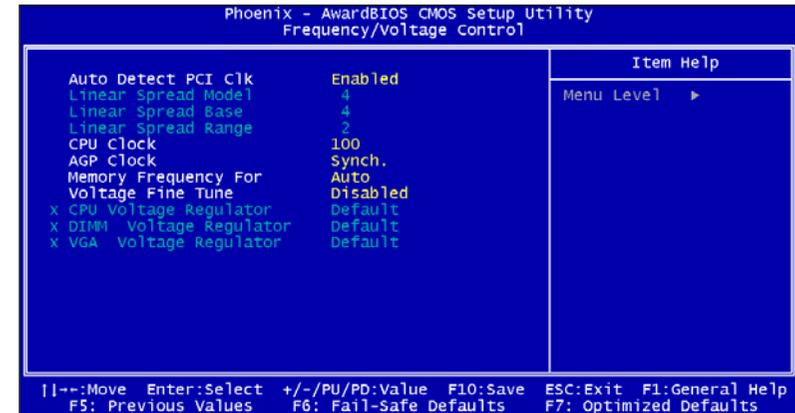


Figure 3-8 Frequency/Voltage Control

#### CPU Clock Ratio:

This feature allows user to manually configure your CPU clock ratio according to your processor's specifications.

#### CPU Clock:

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

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

#### Overclocking:



This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.**

### 3-9 Load Fail-Safe Defaults

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

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

### 3-10 Load Optimized Defaults

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

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

### 3-11 Supervisor Password & User Password Setting

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

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



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

Enter Password:

### 3-12 Save and Exit Setup

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

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

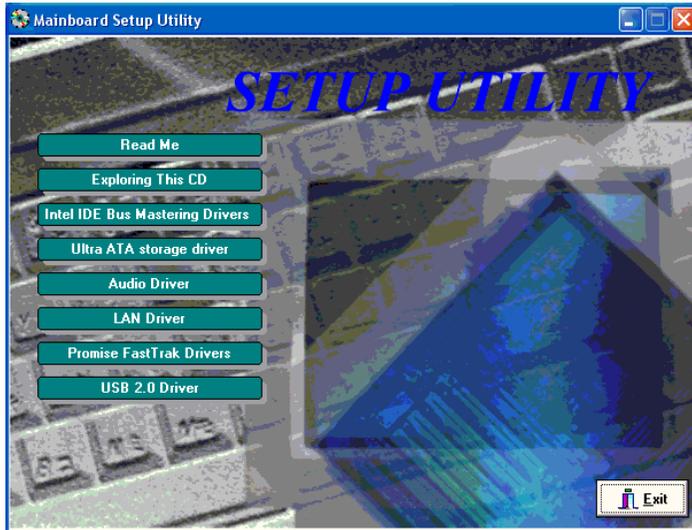
### 3-13 Exit Without Saving

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

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

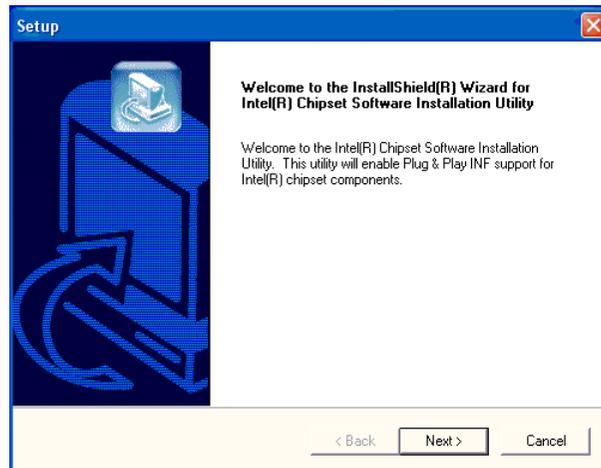
## Chapter 4 DRIVER Setup

Insert the support CD that come with your motherboard into your CD-ROM driver or double-click the CD drive icon in [ **My computer** ] to open the setup screen.

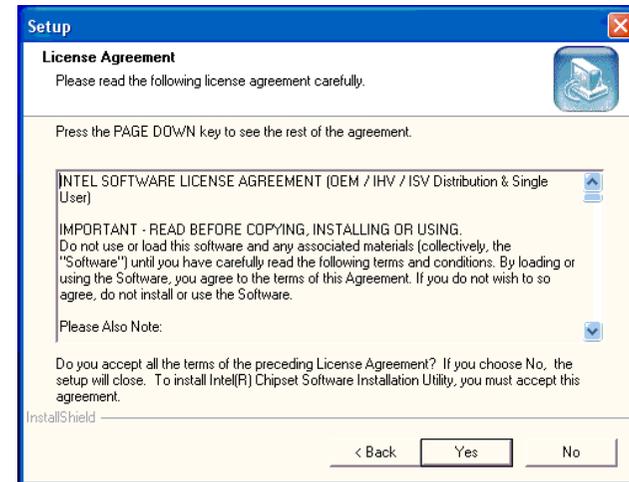


### 4-1 Intel® IDE Bus Mastering Drivers Setup

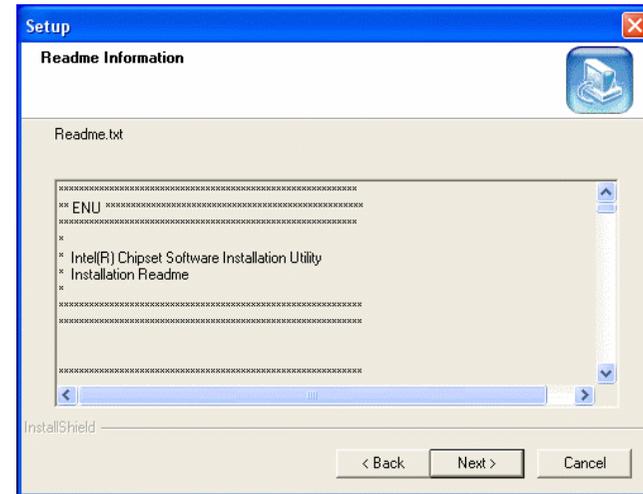
1. Click [Intel® IDE Bus Mastering Drivers]
2. Click [Next] to start software installation.



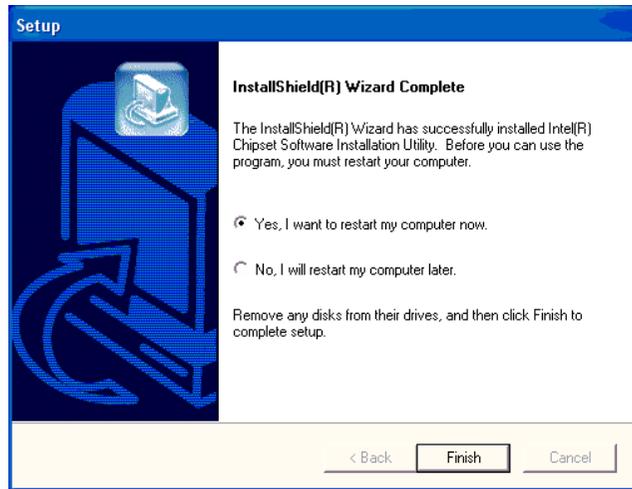
3. Click [Yes] to accept the license agreement



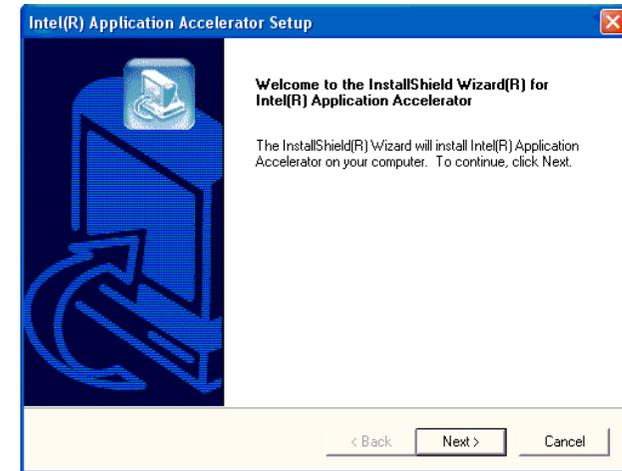
4. Please, select [Next]



5. Please, select [**Finish**] after restart

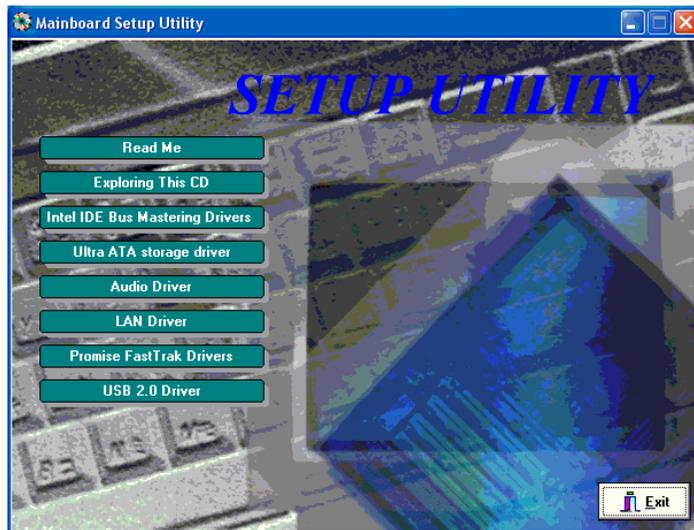


2. Click [**Next**] to start software installation

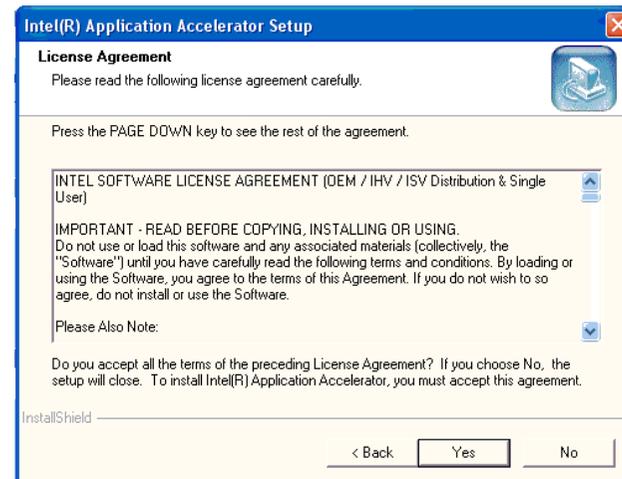


#### 4-2 Intel® Application Accelerator Setup

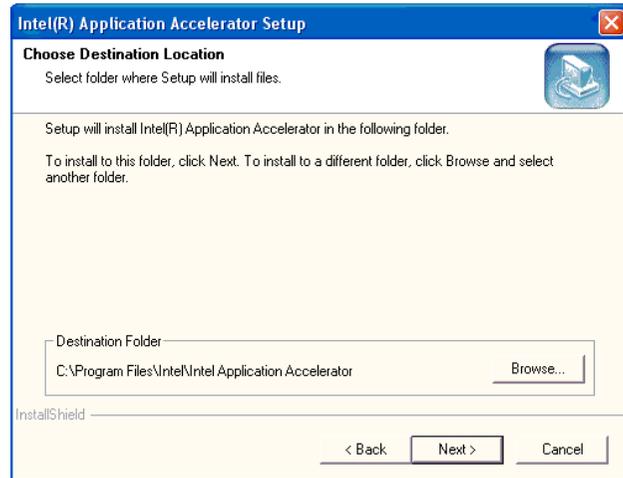
1. Click [**Ultra ATA storage driver**]



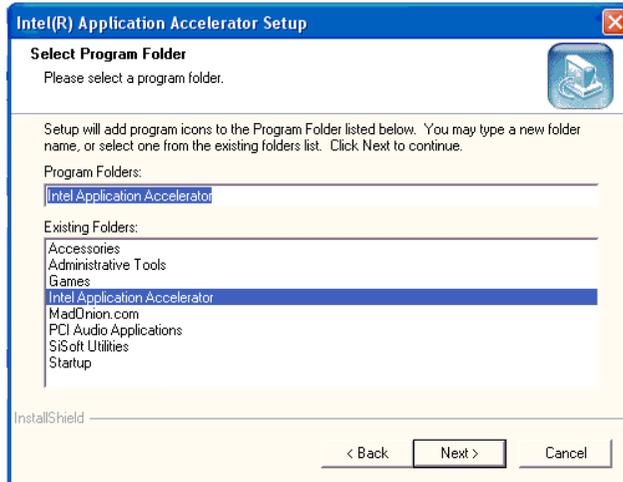
3. Click [**Yes**] to accept the license agreement



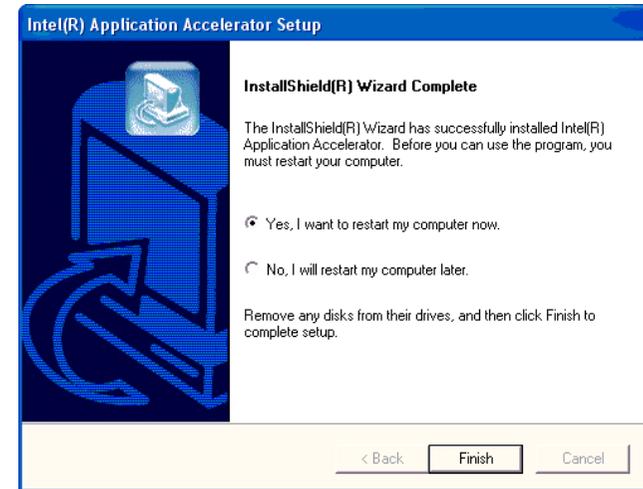
4. Click [Next] to continue installation



5. Click [Next] to continue installation

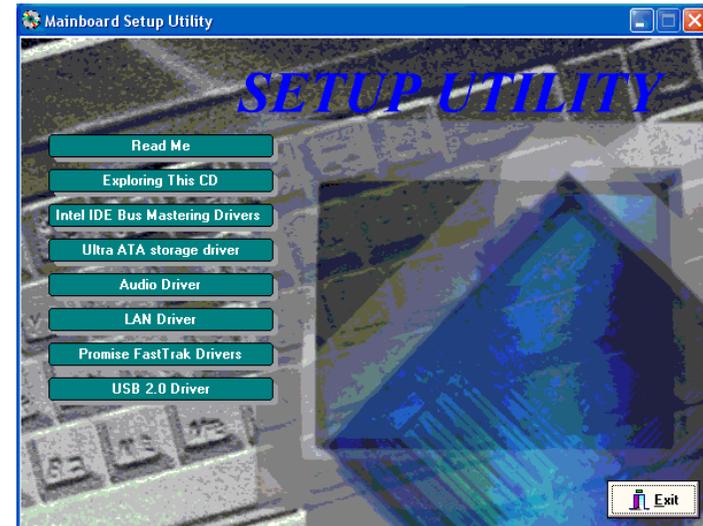


6. Select , click [Finish] to complete setup

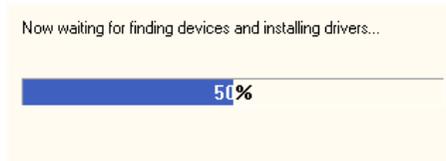


#### 4-3 Intel® LAN Driver Setup

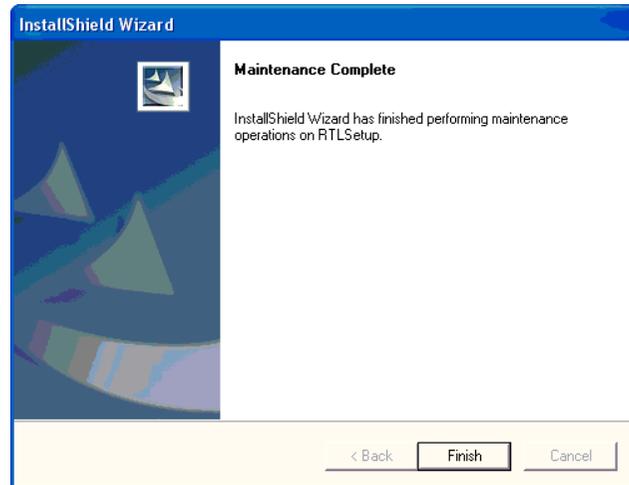
1. Click [LAN Driver]



- The program will automatically install itself.



- Click [**Finish**] to complete setup



#### 4-4 C-MEDIA Sound Driver Setup

This section provides information on installed audio devices by choosing [**Audio Drivers**] from the Setup Driver menu.

- Please select [**Audio Drivers**]



- Please select [**Install Device Driver and Application**]



## 3. Please select [OK]



## 4. Please select [Next]



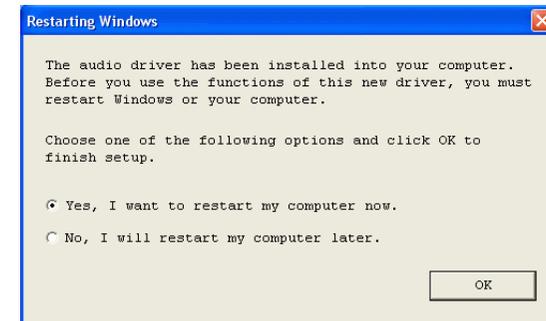
## 5. Please select [Next]



## 6. Please select [Next]



## 7. Please wait; select [OK], after restart.



## 8. Select different channels according to you speakers



## Chapter 5 Audio Device Application

This sound card supports Windows 95/98/ME/NT4.0/2000 operating systems. To start the Audio Application Program simply select the **[Start]→[Program Files]→[PCI Audio Applications]→[Audio Rack]**

It includes the following options:

1. Audio Rack:
  - Which includes Audio Rack, CD Player, MIDI Player, Mixer and Mp3 Player.
2. Multi-Channel Audio Demo: (Does not support Windows NT4.0)
  - This is a demonstration for the Multi-Channel Audio.
3. Uninstall Applications:
  - Which uninstalls the driver and all application programs for the Sound card.

### 5-2 Audio Rack

Audio Rack includes 4 control panels:

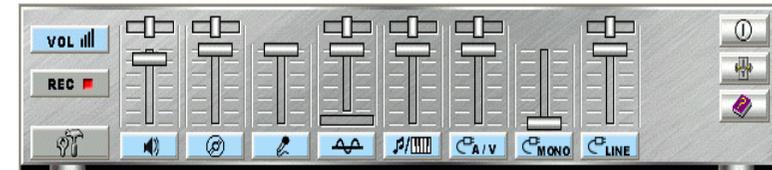
- C-Media Mixer Volume
- CD Player
- MIDI Player
- MP3 Wav Player

You can start the Audio Rack by selecting **[Start] → [Program] → [PCI Audio Applications] → [Audio Rack]**



## C-Media Mixer Volume

### 1. Volume Control

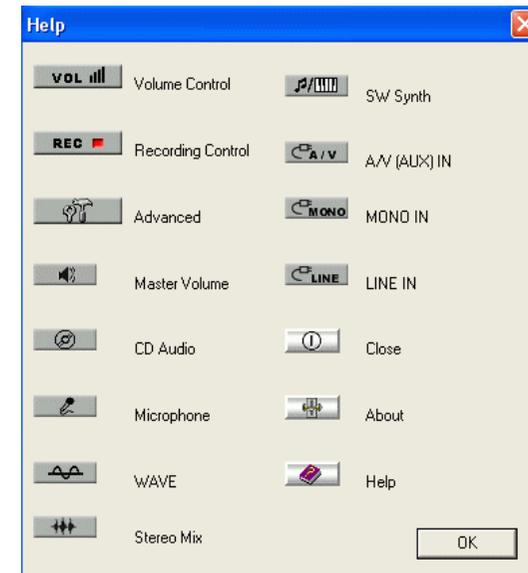


You can simply double click the icon  located at button right corner of Windows to open the C-Media Mixer volume control. This control panel includes Master Volume, CD Audio, Microphone, WAVE, SW Synth, A/V (AUX) In, MONO IN, and LINE IN.

### 2. Mixer Recording Control

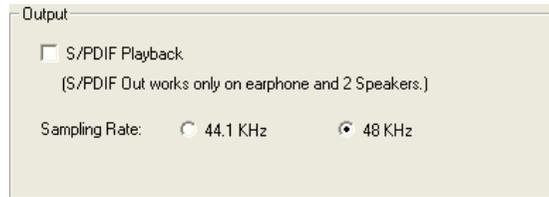
This control panel includes CD Audio, Microphone, WAVE, Stereo Mix, A/V(AUX IN), and LINE IN.

### 3. [ Help ]



4.  **Mixer Advance Setting:**

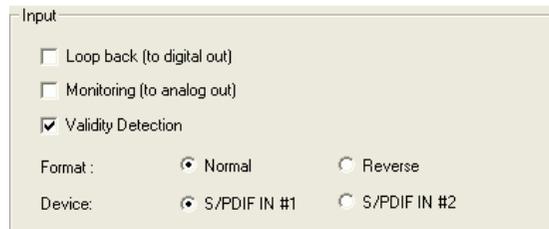
## a) SPDIF:

i) **Output:****S/PDIF Playback:**

To activate SPDIF OUT. (S/PDIF Out only on earphone and 2 speakers.)

**Sampling Rate:**

Transfer the Wave file from the computer through optical fiber out to any digital media devices, ex. MD or DAT Advanced media devices. (SPDIF-out only supports 44.1KHz and 48KHz High frequency rates.)

ii) **Input:****Loop back (to digital out):**

Transfer the Wave file from the computer through optical fiber out to any digital media devices, ex. MD or DAT Advanced media devices. (SPDIF-out only supports 44.1KHz and 48KHz High frequency rates.)

**Monitoring (to analog out):**

Monitors the SPDIF IN signal (Digital SPDIF signals use the analog output through LINE OUT to make sound.)

**Validity Detection:**

Select this option to detect and check the validity of the fiber signal.

**Format:**

Select between Normal and Reverse.

**Device:**

For device feature select between S/PDIF #1 and S/PDIF #2.

iii) **Copyright Protection:**

Audio files have copyrights. Please select this option to prevent

## b) Speakers:

i) **Headset & 2 channel speaker setup**ii) **4 channel speaker setup**iii) **6 channel speaker setup**

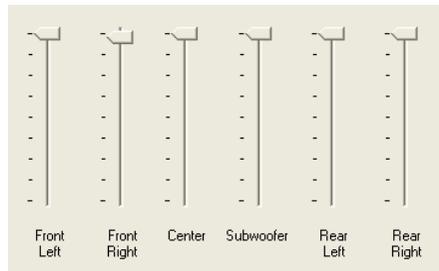
## iv) User 4ch XeaR mode setup



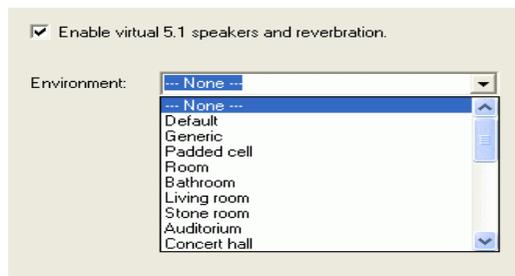
## v) User 6ch XeaR mode setup



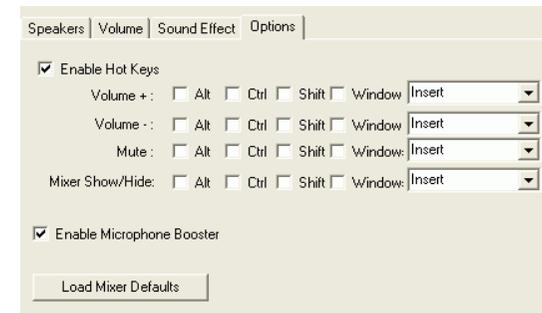
## c) Volume:



## d) Sound Effect:



## e) Option:

**【Enable Hot-Key Setting】**

This provides settings for Hot-Keys for Volume control, Mute, and Display.

**【Enable Microphone Booster】**

Enable the microphone's electrical circuit to increase the sensitivity of the microphone. When designing the audio chip, it limits the type of microphones that are available. The audio chip only supports Active or Capacitive types of Microphone. These microphones are those standard microphones we get on the market, or those earphones that come with a microphone. The one that Karaoke uses does not work on this chip.

**【Load Mixer Defaults】**

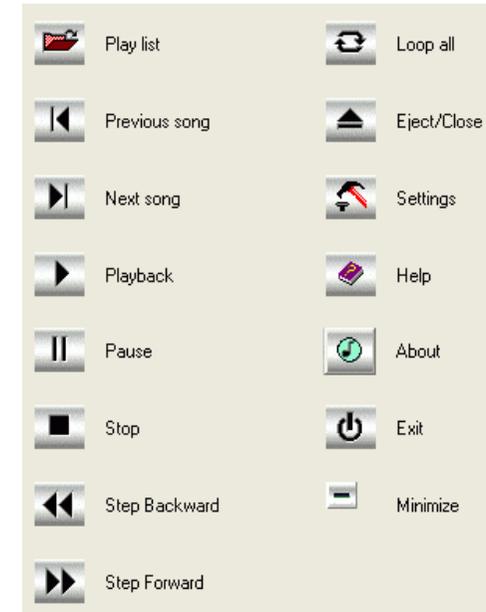
This loads the original factory setting for the Sound Effects. (It restores Volume, Wave, and MIDI.)

**CD Player Output Configuration:****Setup :**

1. Enable to choose the Audio CD drive of your system.
2. Enable to activate SPDIF signal output (only supports optical fiber under Windows 95/98).

**[Help]****MIDI Player Output Configuration:****Setup:**

1. **Under Win 95 / 98**  
3 options available for Output device: [Default MidOut Device], [MPU-401], [Microsoft GS Wavetable SW Synth].
2. **Under Windows NT4.0**  
Only CMPCI MIDI device is available.
3. **Under Windows 2000 / ME / XP**  
3 options available for Output device: [Default MidiOut Device], [Microsoft GS Wavetable SW Synth], [MPU-401]

**[Help]:**

**MP3 WAV Player Configuration:****Sound Effector Setting Button:****1. Reverberation:**

This is to setup the depth of the sound environment.

**2. Equalizer:**

This is to setup the high and low pitch of the sound frequency output.

**3. Surround:**

This is for setting up speaker output mode.

**4. Playback Mode**

To select the music playback mode provided.

**Configuration:****Playback:**

Playback delay time for Mini-Disk recording. Please use default setting.

**Recording Configuration:****1. Recording Format :**

Quality:

**Name:**

This is to setup the recording format. There are 3 selections: CD Quality, Radio Quality, and Telephone Quality. The default setting is CD Quality.

**Format:**

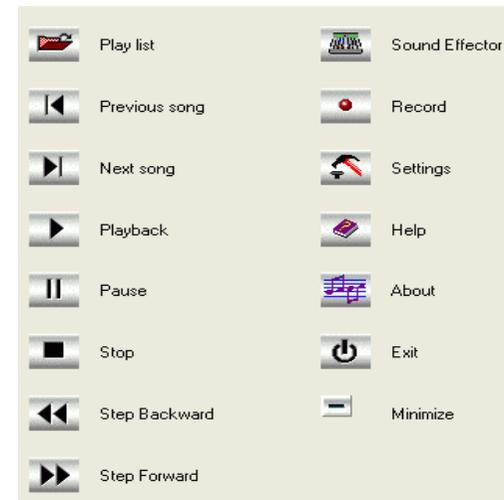
Only PCM format is available while recording with audio card.

**Attributes:**

Enabling to setup recording quality. The default is set at 44.100 kHz 16Bit Stereo 172 kb/sec

**File Name:**

Enable to setup the recording source. Type in the file name you plan to record or click on the [**BROWSE**] icon and select the desired file save destination.

**[Help]:**

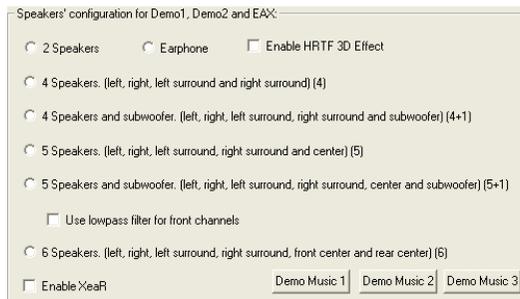
### 5-3 Multi- Channel Demo

[ STAR ] → [ Program ] → [ PCI Audio Applications ] → [ Multi-Channel Demo ]



Click on the **wide-screen TV** in the center to get into [Advance] screen

#### 1. Set speaker function for demo mode:



#### 2. Set EAX function for demo mode:



In Advance mode, here you can configure according to your system hardware or personal preference.

## Chapter 6 Thiz-Linux Desktop 6.0 Setup Steps

Thank you for selecting Thiz Linux Desktop 6.0, before you install please pay attention to the following requirements and specifications.

### 6-1 BEFORE YOU START

#### 1. System Requirements

Before you install Thiz Linux Desktop 6.0, you require:

- a PC with Intel® Pentium II or higher processor, or X86-compatible processor such as AMD Duron, Athlon, etc. (Pentium III 800 MHz or equivalent is recommended.)
- Minimum of 64 MB memory (128 MB or above is recommended.)
- Minimum of 1.6 GB free HDD space or above (2GB or more recommended.)
- CD-ROM drive.
- a VESA 2.0 standard display card.
- The actual requirements will vary with your system configuration and the selected installation packages.

#### 2. Before Installation

- Before installing Thiz Linux Desktop 6.0, you are advised to read through this manual. (Please pay special attention to this chapter INSTALLITION.)
- For any enquiries you are welcome to contact our technical support team. For the technical support services provided by Thiz Linux, please pay attention to our latest news release.
- To install Thiz Linux Desktop 6.0, please insert the CD-ROM inside the box set to your computer's CD-ROM drive to start the installation.
- Thiz Linux Desktop 6.0 installation program will run automatically and detect the hardware configurations on your computer then install all the hardware drivers. The process is straightforward and convenient.
- Please refer to this chapter for the steps to start the installation.
- Thiz Linux can be installed as a stand-alone system which becomes the sole operating system platform, or co-exist with other operating systems.
- If you need to install more than one operating system on your computer, we suggest you to install other systems before Thiz Linux, as Thiz Linux will use up all free disk space as default in automatic partitioning with no space left for other operating systems.
- Since installing Thiz Linux Desktop 6.0 may require hard disk partitioning, which may affect existing data on the hard disk, please be very careful about the installation, configuration and hard disk partitioning.

## 6-2 HOW TO INSTALL

To start installations set up your CD-ROM device. Then insert the Thiz Linux 6.0 CD-ROM into the CD-ROM driver and switch on the computer. After turning on the computer, select the required installation mode from the screen as shown below:

```

Welcome to Thiz Linux 6.0(EURO)!

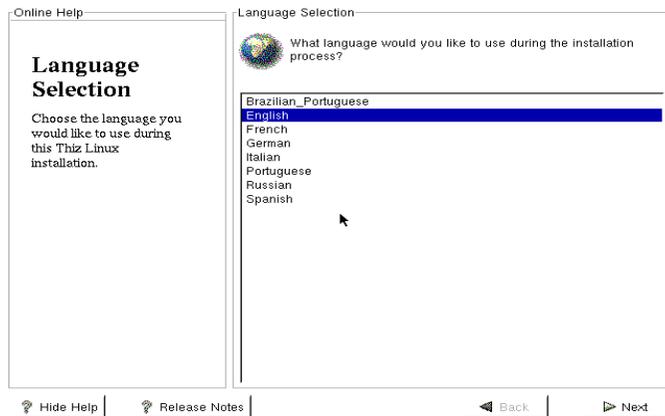
- To install Thiz Linux in graphical mode, type: linux <ENTER>.
- To enter special mode, type: special <ENTER>.
- Simple mode for English, type: en <ENTER>.
- Simple mode for French, type: fr <ENTER>.
- Simple mode for German, type: de <ENTER>.
- Simple mode for Italian, type: it <ENTER>.
- Simple mode for Portuguese, type: pt_PT <ENTER>.
- Simple mode for Brazilian_Portuguese, type: pt_BR <ENTER>.
- Simple mode for Russian, type: ru <ENTER>.
- Simple mode for Spanish, type: es <ENTER>.
- All modes except special mode by default will use graphical mode,
  append text to use text mode installation.

[F1-Main] [F2-General] [F3-Expert] [F4-Kernel] [F5-Rescue]
boot: _

```

### 1. Graphical Mode

To select the [Graphical Mode] installation, please type [linux] and press [Enter], or press [Enter] directly. The manual installation mode requires more user configuration. Users can type [linux] and press [Enter] on the Boot-up Screen to enter the [Graphical Mode] installation as shown below:



On the left hand side of the screen, you will find the [Online Help] frame for various steps during installation. If you want to hide it to free more space in the main frame, you can click on the [Hide Help] button at the bottom left hand corner. You can call back the [Online Help] frame by clicking on the " Show Help " button.

### Step 1. Language Selection (for installation program)

The first step of installation is to select the language for the installation program.

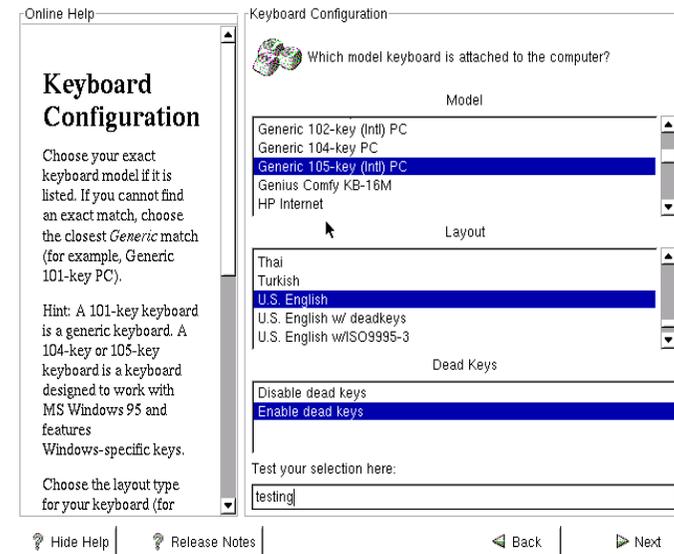
Options include the following:

- Brazilian\_Portuguese
- English
- French
- German
- Italian
- Portuguese
- Russian
- Spanish

To select the language, click the language required to highlight it, then press the [Next] button.

### Step 2. Keyboard Configuration

The next step is to configure the keyboard. Users can use the default value under normal situation.



Keyboard configuration includes:

Items	Descriptions
Model	The system has already detected the model of keyboard you are using, please check clearly; if there is any mistake, please select your own model here.
Layout	Select the key layout of the keyboard here.
Dead Keys	Enable or disable dead keys here.

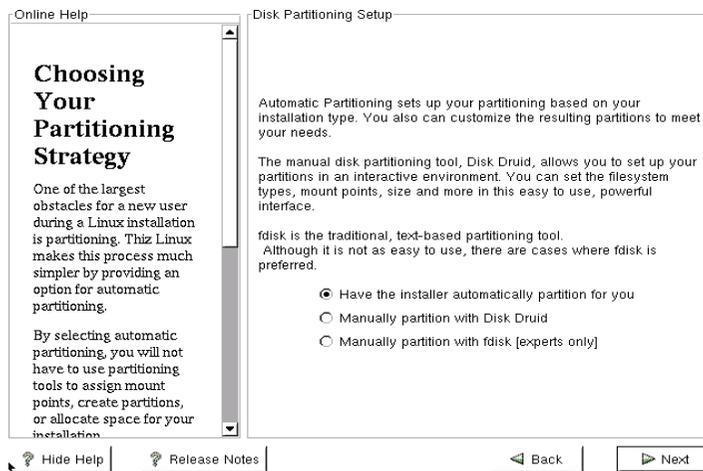
### Step 3. Welcome

This is the greeting page of the installation program; press “OK” to proceed.

### Step 4. Disk Partitioning Setup

Select the suitable disk partitioning strategy for your Hard Disk.

**Note:** Please select carefully since disk partitioning may delete existing data.

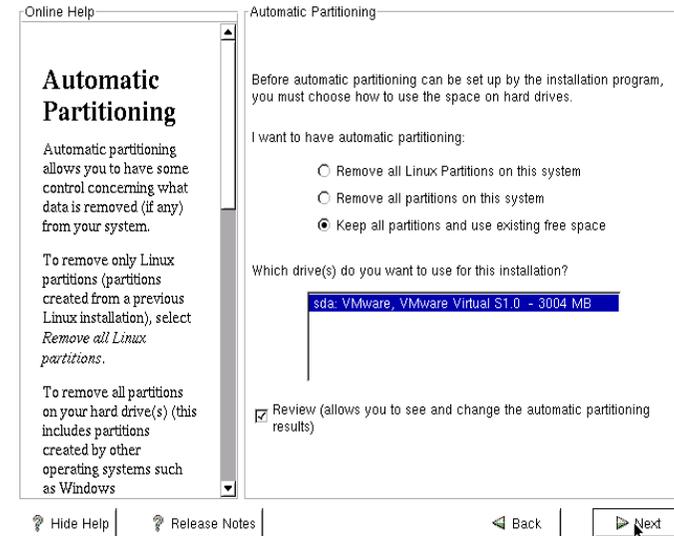


The system provides three ways of partitioning:

- 1) Have the installer automatically partition for you.
- 2) Manually partition with Disk Druid.
- 3) Manually partition with fdisk [experts only].

Select the type of partitioning that you want then press [Next] to proceed.

If you select “Have the installer automatically partition for you” the following window will appear.

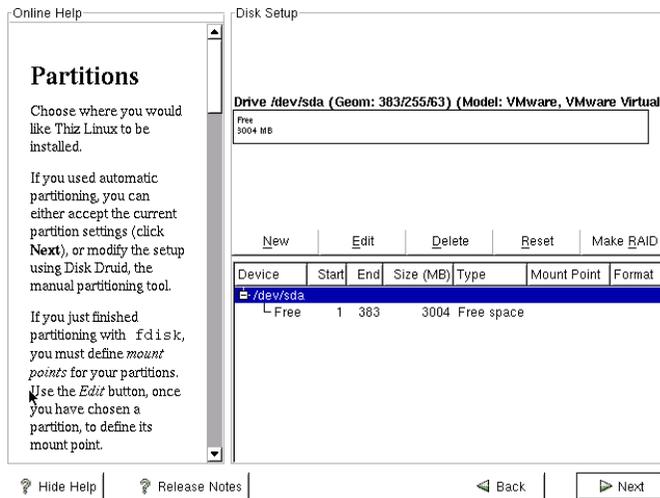


Please select how to allocate hard disk space. Select one of the following items:

Disk Partitioning Ways	Descriptions
Remove all Linux Partitions on this system	Installer will remove all Linux partitions on the system, while retaining partitions with other operating systems.
Remove all partitions on this system	Installer will remove all partitions on the system that means there will only be This Linux Desktop 6.0 in the hard disk.
Keep all partitions and use existing free space	Installer will install This Linux in any free space on the hard disk, which has not yet been used by any partitions. If there is no space available on the hard disk, the system will reboot.

After you have selected the options that you want press [Next] to proceed to Setp5

If you select “Manually partition with Disk Druid” the following window will appear.

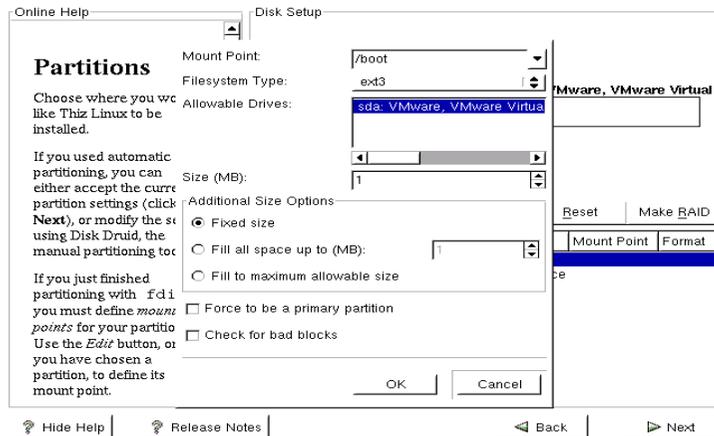


On the top of the screen shows the present disk-partitioning situation.

You can, at this step, use [New], [Edit], [Delete] and [Reset] to change the hard disk partitions.

#### I. New:

Press [New] to enter information of the new partitions:



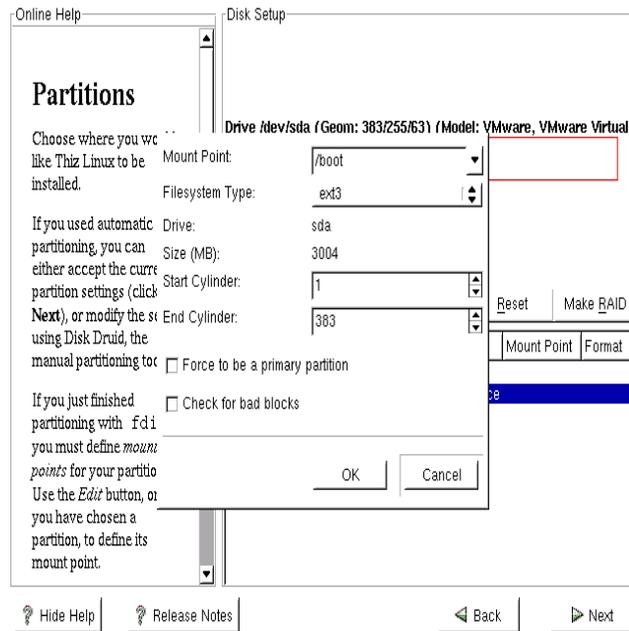
Information	Description
Mount Point	Select to which system directory will this partition be mounted.
File system Type	There are many file types available: File types which will be used in Linux include ext2, ext3, reiserfs, software RAID, vfat and swap.ext2 has long been used as a Linux file system. ext3 and reiserfs are journaling file system. Even if the computer is shut down improperly, the journaling file system can resume the file system quickly. There is no more waiting for hard disk scanning
Allowable Drives	Select in which hard disk will this partition be put.
Size (MB)	Set the size of this partition.
Fixed size	Fix the size of this partition.
Fill all space up to (MB)	Ignore the value of [ Size ]. The size of this partition will be the entered value minus all free space on the hard disk.
Fill to maximum allowable size	Ignore the value of [ Size ] The size of this partition will be all free space on the hard disk.
Force to be a primary partition	Set this partition as the primary partition. This option is for experts only, for the number of primary partitions on one hard disk should not exceed four.
Check for bad blocks	Check whether there are any bad blocks on the hard disk during formatting. Choosing this option will greatly increase the time for hard disk formatting.

**Note:** Under normal situation, there should be at least three partitions for This Linux Desktop:

- 1) The size of [/boot] should be at least 20MB.
- 2) The size of [/] should be at least 1600MB.
- 3) swap - this is a partition for virtual memory. The suggested size is 256 MB.

## II. Edit:

Users can use **[Edit]** to change the settings for the required partitions. This includes changing the partition's mount point and changing the file format from ext2 to ext3.



## III. Delete:

Select a partition and press **[Delete]** to remove it.

## VI. Reset:

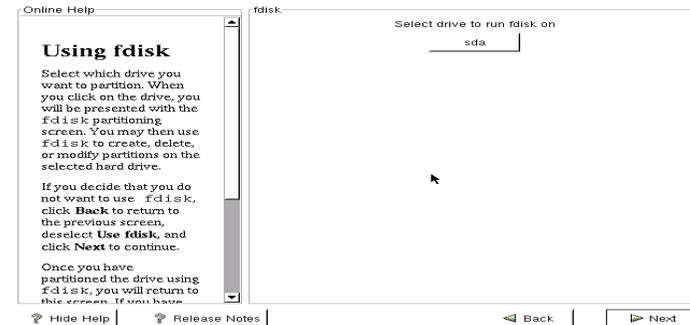
Return the partition settings to its original state.

## V. Make Raid:

This is to create software RAID. **[experts only]**

After you have selected the options that you want press **[Next]** to proceed to Step 5

If you select “ **Manually partition with fdisk** “ the following windows will appear.



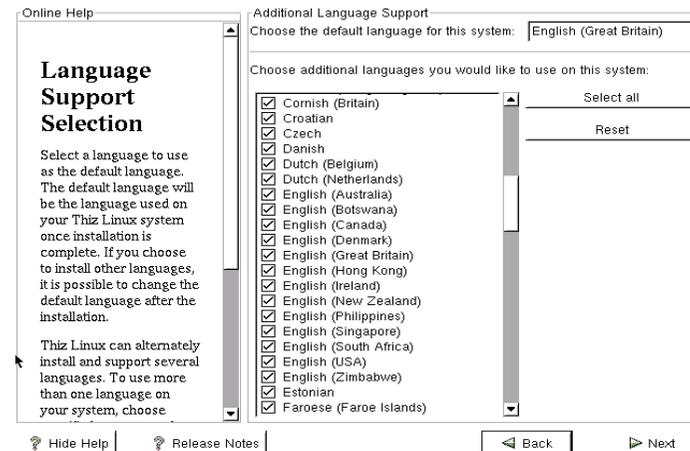
Select the hard disk to be partitioned.

**Note:** fdisk is a hard disk partitioning tool in Text Mode. Its functions are stronger than that of Disk Druid. Don't select this option unless you are already familiar with fdisk.

After you have selected the options that you want press **[Next]** to proceed to Step 5.

## Step 5. Language Selection (for the system)

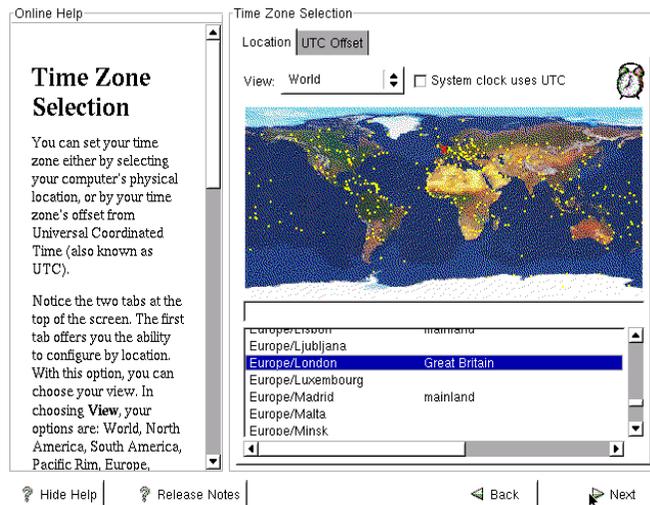
After entering this step, you will see the following screen:



In this step, you can select which languages the system will support. You can select the required languages in the list with your mouse (multiple options possible), or click on **[Select All]** to select all languages. Then select the default language for the system from the **[Select default language for the system]** pull-down menu on the right. Selection of all languages recommended.

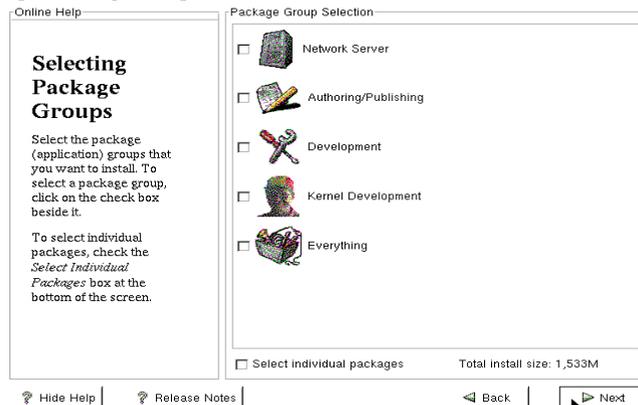
After selecting the language, press [Next] to continue.

### Step 6. Time Zone Selection



Select the time zone you are currently located in. Then press [Next] to continue.

### Step 7. Package Group Selection

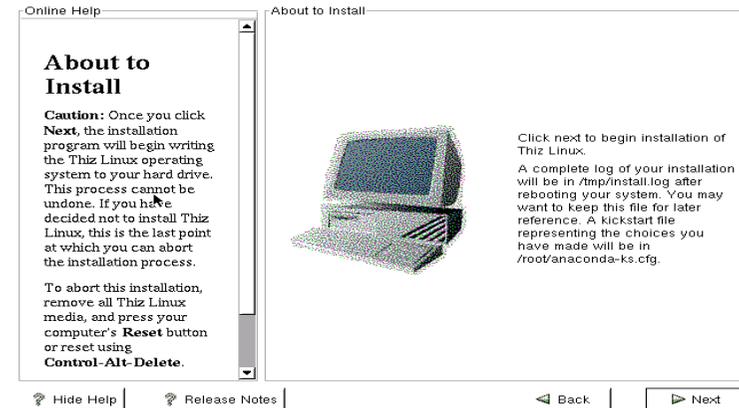


Select the additional packages to be installed on your system. If you want to select or deselect individual package, you can check [Select Individual Package]. Since increasing or reducing the number of packages to be installed may lead to the problem of compatibility, we don't recommend users to select these options; therefore, normal users can press [Next] directly.

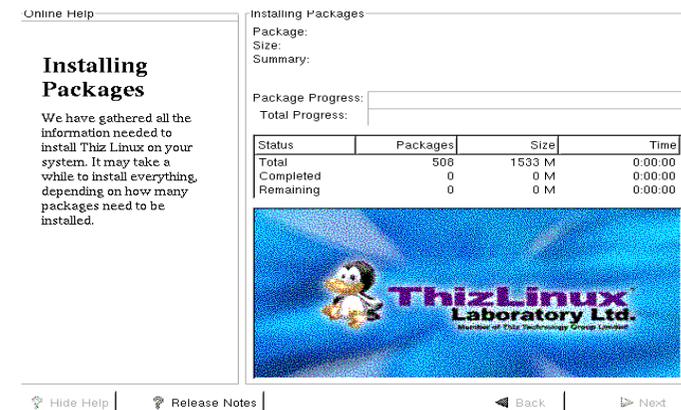
**Note:** The more packages you select, the more hard disk space is required. Please check the size of system space occupied by the selected packages at the bottom of

the screen.

### Step 8. About to Install



Now everything is ready. You can actually start the installation. Once you press [Next], the installation program of Thiz Linux Desktop will start. If you want to give up, this is the last chance.



The screen will show the progress of formatting and installation, and the time left. Please wait for the installation program to complete.

**Step 9. Installation Completed**

Congratulations. Thiz Linux Desktop 6.0 has been successfully installed. Now, please press **[Exit]** to leave the installation program, and withdraw the installation disk from the CD-ROM driver. Then restart the computer.

The system will carry out the first login configuration. Then you will see the login page; please type in the default login data:

**Login name: root**

**Password: thiz**

Click on "Begin" to enter Thiz Linux desktop environment.

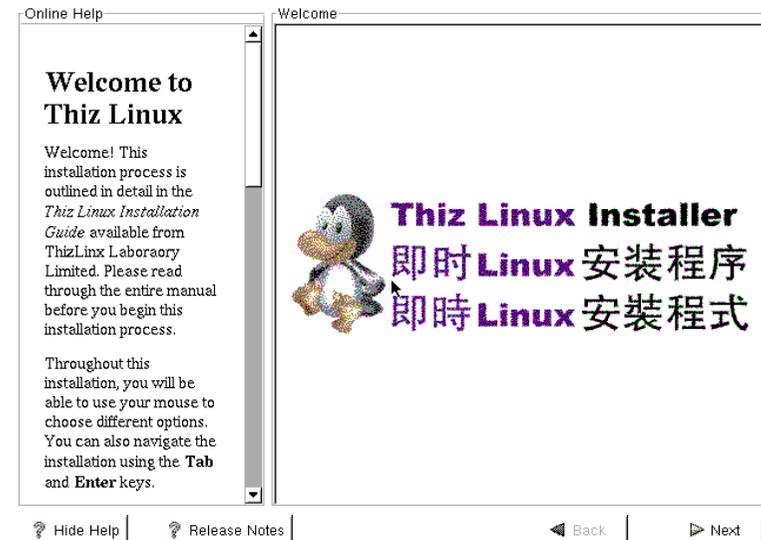
**2. Simple Mode**

To install Thiz Linux Desktop 6.0 by Simple Mode, please enter any of the commands below and select the system language to be used in your desktop environment.

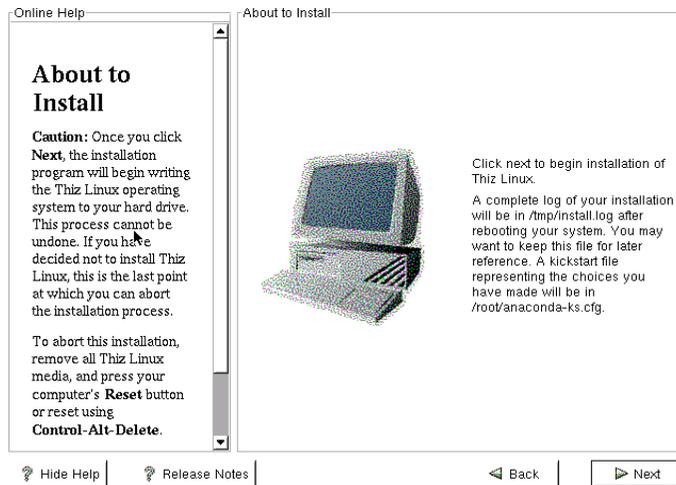
Command entered	Language version to be installed
en	Thiz Linux Desktop in English
fr	Thiz Linux Desktop in French
de	Thiz Linux Desktop in German
it	Thiz Linux Desktop in Italian
pt_PT	Thiz Linux Desktop in Portuguese
pt_BR	Thiz Linux Desktop in Brazillian Portuguese
ru	Thiz Linux Desktop in Russian
es	Thiz Linux Desktop in Spanish

**Note:** If you select the **[Simple Mode]** installation, all Linux partitions on the hard disk and the data on these partitions will be removed.

Select **[Simple Mode]** in any language in the boot-up screen, you will see the following screen:



Press [Next] to proceed, you will see the following screen:



Press [Next] to proceed, then Thiz Linux Desktop will be installed onto the hard disk immediately.

After the installation, you will see the screen showing installation completed. Press [Exit] to finish the installation.

Now, withdraw the installation disk from the CD-ROM driver. Then restart the computer. The system will carry out the first login configuration.

Then, you will see the login page, type in the default login data:

**Login name: root**

**Password: thiz**

Press [Begin] to enter Thiz Linux desktop environment.

### 3. Text Mode

There are two ways to install Thiz Linux Desktop 6.0 by "Text Mode" installation. They are:

#### a) Manual installation and configuration

Enter any command below to install and configure Thiz Linux Desktop manually. Hard disk partitioning mode can be selected as user desires.

Command entered	Language shown in installation program
linux text	English
linux text lang=fr	French
linux text lang=de	German
linux text lang=it	Italian
linux text lang=pt_PT	Portuguese
linux text lang=pt_BR	Brazilian Portuguese
linux text lang=ru	Russian
linux text lang=es	Spanish

#### b) Automatic Installation

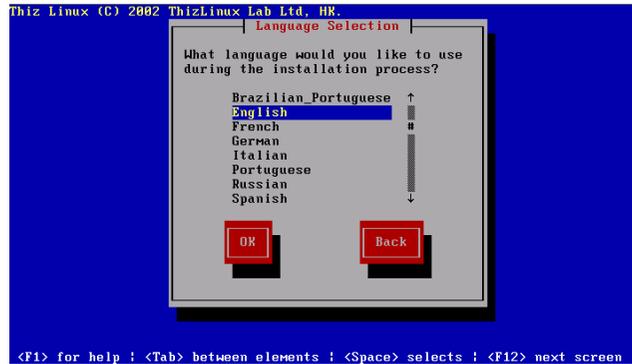
Command entered	Language shown in installation program
en text	English
fr text	French
de text	German
it text	Italian
pt_PT text	Portuguese
pt_BR text	Brazilian Portuguese
ru	Russian
es	Spanish

There are two types of Text Mode Installation i. [Manual Installation] in which users set their own installation contents; and ii. [Automatic Installation] in which the system set up the configuration automatically.

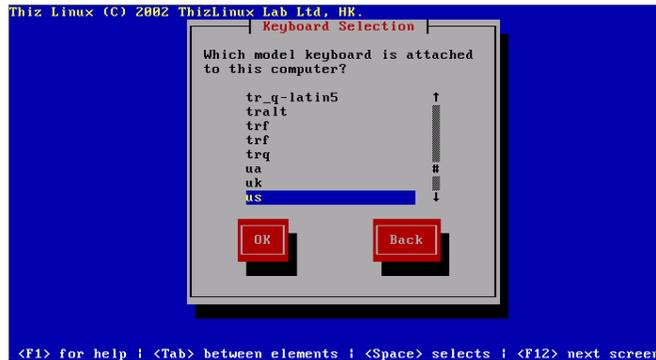
## i) [Manual Installation]

**Step 1. Selecting the interface language**

After entering the Text Mode manual installation, you will see the following screen. The system will ask users to select the language displayed for the installation program.

**Step 2. Keyboard Selection**

Then users have to select keyboard type for the computer.



Select the type of keyboard you are using. Since the system will auto-detect the keyboard in use, users only need to press [Next] in normal situation.

**Step 3. Welcome**

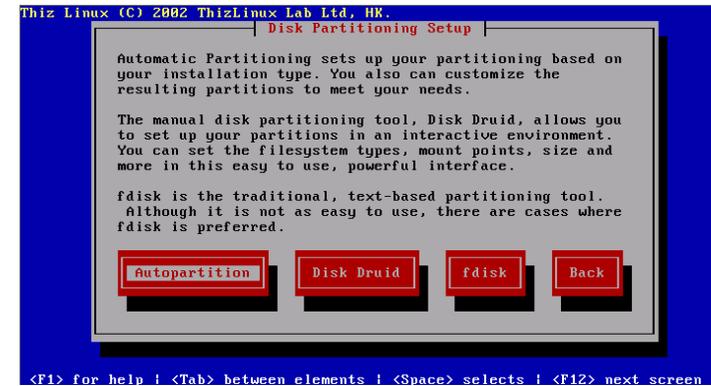
When Thiz Linux installation program are being in use, the screen will show this welcome address. Press [OK] to proceed.

(Fig: text-welcome.gif)

**Step 4. Disk Partitioning Setup**

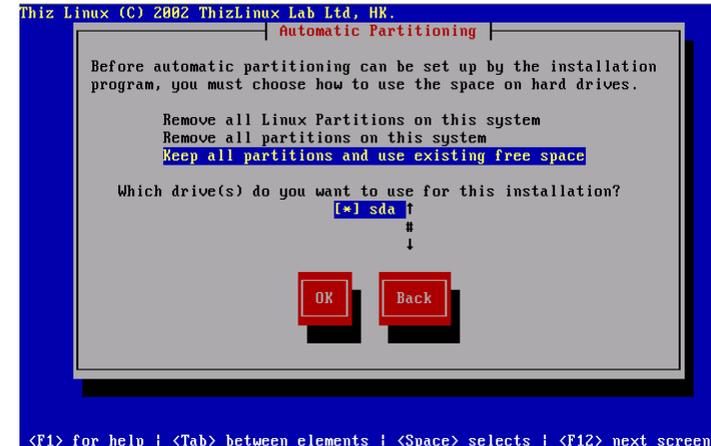
The system provides three ways of partitioning. They are:

- Autopartition
- Disk Druid
- fdisk



- Autopartition

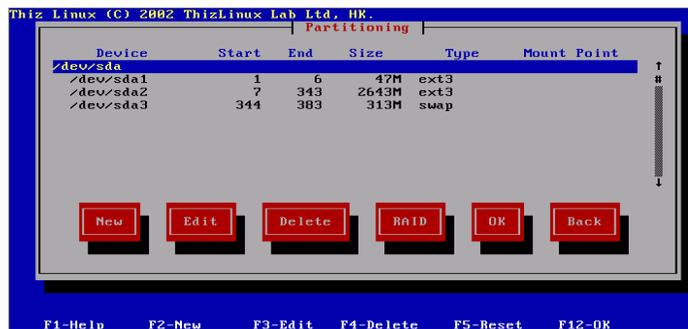
If selecting [Autopartition], you will see the following screen:



Items	Descriptions
Remove all linux Partitions on this system	The installation program will remove all Linux partitions on the system, but partitions with other operating system will be kept.
Remove all partitions on this system	The installation program will remove all partitions on the system that means there will be only Thiz Linux on the hard disk.
Keep all partitions and use existing free space	If there is any space which has not yet been used by any partitions, the installation program will install Thiz Linux onto this free space. If there is no free space available, the system will reboot.

#### - Disk Druid

If selecting [ **Disk Druid** ], you will see the following screen:



On the top of the screen shows the present hard disk partitioning situation. You can select [**New**], [**Edit**] or [**Delete**] to change the partitioning.

#### I. New

If pressing [**New**], the following screen will be shown. Please enter data for the new partition.

Information	Description
Mount Point	Select to which system directory will this partition be mounted.
File system Type	There are many file types available: File types which will be used in Linux include ext2, ext3, reiserfs, software RAID, vfat and swap.ext2 has long been used as a Linux file system. ext3 and reiserfs are journaling file system. Even if the computer is shut down improperly, the journaling file system can resume

	the file system quickly. There is no more waiting for hard disk scanning
Allowable Drives	Select in which hard disk will this partition be put.
Size (MB)	Set the size of this partition.
Fixed size	Fix the size of this partition.
Fill all space up to (MB)	Ignore the value of [ <b>Size</b> ]. The size of this partition will be the entered value minus all free space on the hard disk.
Fill to maximum allowable size	Ignore the value of [ <b>Size</b> ] The size of this partition will be all free space on the hard disk.
Force to be a primary partition	Set this partition as the primary partition. This option is for experts only, for the number of primary partitions on one hard disk should not exceed four.
Check for bad blocks	Check whether there are any bad blocks on the hard disk during formatting. Choosing this option will greatly increase the time for hard disk formatting.

**Note:** Under normal situation, there should be at least three partitions for Thiz Linux Desktop:

- 1) The size of [ **/boot** ] should be at least 20MB.
- 2) The size of [ **/** ] should be at least 1600MB.
- 3) swap - this is a partition for virtual memory. The suggested size is 256 MB.

#### II. [Edit]

Users can use the [ **Edit** ] function to change the required partition settings, including the mount point and the changing from ext2 to ext3.



### III. [Delete]

If you want to delete a partition, select the target partition and press [ **Delete** ].

### VI. [RAID]

[RAID] is for the creation of software RAID. This is not recommended for normal users.

\end {enumerate}

#### - fdisk

Select [**fdisk**] to select the hard disk to be partitioned according to your need.

**Note:** fdisk is a hard disk partitioning tool in Text Mode. Its function is stronger than that of Disk Druid. We don't recommend it to normal users, unless you are familiar with fdisk. Press [**OK**] to proceed when finished.

### Step 5. Language Support



Select which languages the system will support. You can use [**Space**] to select the required languages (Multiple options permitted), or press [**Select All**] to select all the languages. Press [**OK**] to proceed.

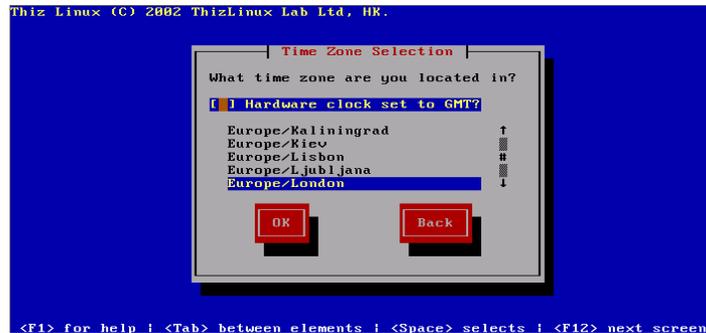
**Note:** We recommend users to select all languages.

### Step 6. Default Language

Select in this page the default language for the system. Press [**OK**] to proceed.



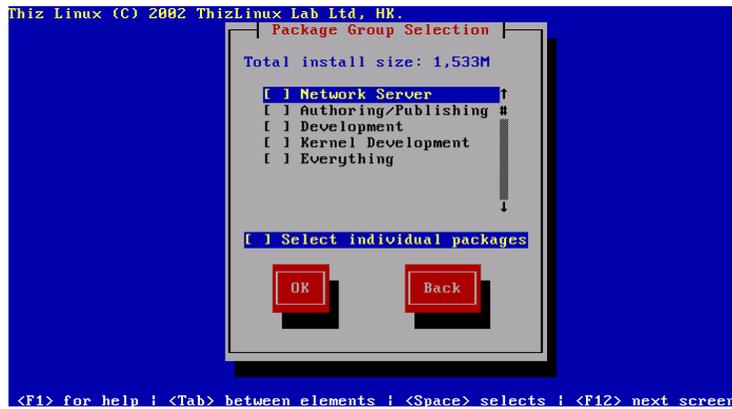
## Step 7. Time Zone Selection



Then select the time zone you are currently located in. Please select the suitable option according to your location:

Location	Time Zone
Great Britain	Europe/London
France	Europe/Paris
Germany	Europe/Berlin
Italy	Europe/Rome

## Step 8. Package Group Selection

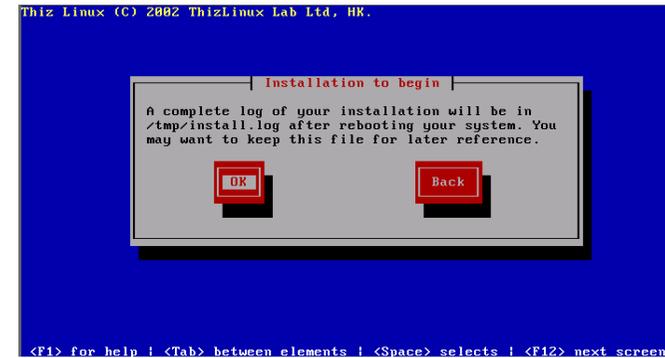


Besides basic program packages, users can install here other packages, including Network Server, etc.

The software may not be necessary to normal desktop computers, therefore, users can press [OK] directly to proceed.

**Note:** The more packages you select, the hard disk space is required. If need be, you can check for the size of the selected packages at the bottom of the screen.

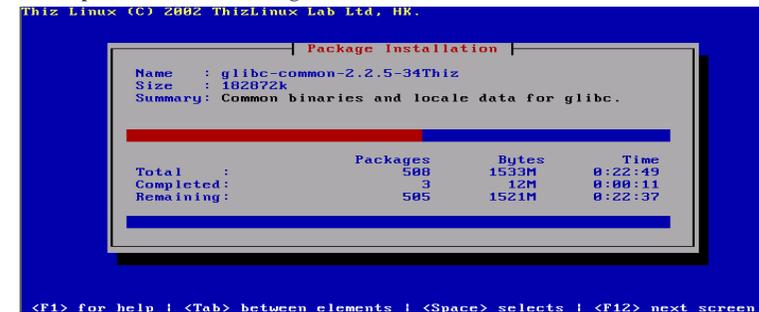
## Step 9. Installation to Begin



After all installation settings are done, users will see the above screen indicating that installation can begin.

Press [OK] to begin copying and installing software.

## Step 10. Installation in Progress



The screen is showing the installation progress, the time left and software package under installation.

After the installation is completed, the system is ready to start, and carry out some basic settings. This facilitates the immediate entrance into Thiz Linux Desktop after the computer is rebooted.

**Step 11. Installation Completed**

After the installation is completed, please press **[OK]** to reboot the system and withdraw the installation CD-ROM. The system will carry out the first login settings. Then you will see the login page, type in the default login data:

**Login: root**

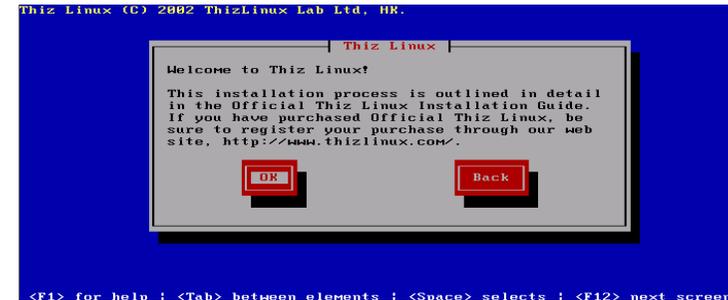
**Password: thiz**

Click on **[Start]** to enter Thiz Linux desktop environment.

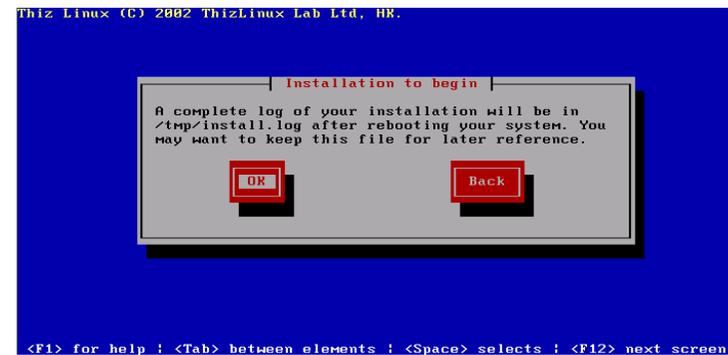
ii) **[Automatic Installation]**

**Note:** If using the Simple Mode installation, all Linux partitions on the hard disk and the data on them will be removed.

If selecting the Simple Mode installation, you will see the following screen.



Press **[OK]**, and you will see the following screen.



After pressing **[OK]**, Thiz Linux will be installed onto the hard disk immediately. After the installation, you will see the screen showing the installation is completed. Now, withdraw the CD-ROM from the CD-ROM driver, and then restart the computer.

Then the computer will carry out the first login settings.

Enter the default login data in the login page:

**Login: root**

**Password: thiz**

Click on **[Start]** to enter Thiz Linux desktop environment.

#### 4. Special Mode

This mode is for System Recovery, Uninstallation, Reboot and Rescue Shell. If you need to use the Recovery Mode in order to use the computer before Thiz Linux is booted up, you can recover the boot-up program after installing the other operating systems.

To enter the special mode, please type **[special]** in the boot-up screen, select the language interface (the English interface is recommended) and keyboard (normally set as **[us]**), and then press **[OK]** to proceed.

After entering the Special Mode, please select one of the four modes, including: Recover, Uninstall, Rescue Shell or Reboot mode.



##### a) Recover:

If you install other operating systems after Thiz Linux, and find that Thiz Linux Desktop cannot be boot up, you can use **[Recover]** to reboot Thiz Linux Desktop again. After the recovering process completed, users can see the following notices:

**[Recover Completed! Please press OK to Reboot.]**

Press **[OK]** to reboot your machine.

##### b) Uninstall:

System uninstallation means to remove Thiz Linux Desktop from the boot-up system, but at the same time retain all data on partitions. If you want to remove partitions and the data on them, you need to use fdisk to remove partitions and data with the Rescue Shell.

##### c) Rescue Shell:

With the **[Rescue Shell]** mode, users can change any items in the system before logging in to Thiz Linux Desktop. If you cannot reboot Thiz Linux Desktop with **[Recover]**, you can use this mode.

##### d) Reboot:

Press this to reboot the computer. Users can use the shortcut **[Ctrl-Alt-Delete]** to do the same action.

##### \*Note:

For the latest driver updates, you can download these new drivers at:

<http://www.chaintech.thizlinux.com>

Technical Support E-Mail :

[support@chaintech.thizlinux.com](mailto:support@chaintech.thizlinux.com)

## Appendix

### Digidoc 80-Port POST Error Code List

POST (hex)	Description
<b>CF</b>	Test CMOS R/W functionality.
<b>C0</b>	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers.
<b>C1</b>	Detect memory: -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
<b>C3</b>	Expand compressed BIOS code to DRAM.
<b>C5</b>	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
<b>01</b>	Expand the Xgroup codes locating in physical address 1000:0
<b>03</b>	Initial Superio_Early_Init switch.
<b>05</b>	Blank out screen. Clear CMOS error flag.
<b>07</b>	Clear 8042 interface. Initialize 8042 self-test.
<b>08</b>	Test special keyboard controller for Winbond 977 series Super I/O chips. Enable keyboard interface.
<b>0A</b>	Disable PS/2 mouse interface (optional). Auto detects ports for keyboard & mouse followed by a port & interface swap (optional). Reset keyboard for Winbond 977 series Super I/O chips.
<b>0E</b>	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
<b>10</b>	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
<b>12</b>	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
<b>14</b>	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.

<b>16</b>	Initial Early_Init_Onboard_Generator switch.
<b>18</b>	Detect CPU information including brand, SMI type (Cyrix or Intel®) and CPU level (586 or 686).
<b>1B</b>	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
<b>1D</b>	Initial EARLY_PM_INIT switch.
<b>1F</b>	Load keyboard matrix (notebook platform).
<b>21</b>	HPM initialization (notebook platform)
<b>23</b>	<ol style="list-style-type: none"> <li>1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute.</li> <li>2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.</li> <li>3. Prepare BIOS resource map for PCI &amp; PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.</li> <li>4. Onboard clock generator initialization. Disable respective clock resource to empty PCI &amp; DIMM slots.</li> <li>5. Early PCI initialization: - Enumerate PCI bus number. - Assign memory &amp; I/O resource. - Search for a valid VGA device &amp; VGA BIOS, and put it into C000:0.</li> </ol>
<b>27</b>	Initialize INT 09 buffer.
<b>29</b>	<ol style="list-style-type: none"> <li>1. Program CPU internal MTRR (P6 &amp; PII) for 0-640K memory address.</li> <li>2. Initialize the APIC for Pentium class CPU.</li> <li>3. Program early chipset according to CMOS setup. Example: onboard IDE controller.</li> <li>4. Measure CPU speed.</li> <li>5. Invoke video BIOS.</li> </ol>
<b>2D</b>	<ol style="list-style-type: none"> <li>1. Initialize multi-language.</li> <li>2. Put information on screen display, including Award title, CPU type, and CPU speed.</li> </ol>
<b>33</b>	Reset keyboard except Winbond 977 series Super I/O chips.
<b>3C</b>	Test 8254
<b>3E</b>	Test 8259 interrupt mask bits for channel 1.

<b>40</b>	Test 8259 interrupt mask bits for channel 2.
<b>43</b>	Test 8259 functionality.
<b>47</b>	Initialize EISA slot
<b>49</b>	<ol style="list-style-type: none"> <li>1. Calculate total memory by testing the last double word of each 64K page.</li> <li>2. Program writes allocation for AMD K5 CPU.</li> </ol>
<b>4E</b>	<ol style="list-style-type: none"> <li>1. Program MTRR of M1 CPU</li> <li>2. Initialize L2 cache for P6 class CPU &amp; program CPU with proper cacheable range.</li> <li>3. Initialize the APIC for P6 class CPU.</li> <li>4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.</li> </ol>
<b>50</b>	Initialize USB
<b>52</b>	Test all memory (clear all extended memory to 0)
<b>55</b>	Display number of processors (multi-processor platform)
<b>57</b>	<ol style="list-style-type: none"> <li>1. Display PnP logo.</li> <li>2. Early ISA PnP initialization</li> </ol> <p>- Assign CSN to every ISA PnP device.</p>
<b>59</b>	Initialize the combined Trend Anti-Virus code.
<b>5B</b>	(Optional Feature) Show message for entering AwdFlash.EXE from FDD (optional)
<b>5D</b>	<ol style="list-style-type: none"> <li>1. Initialize Init_Onboard_Super_IO switch.</li> <li>2. Initialize Init_Onboard_AUDIO switch.</li> </ol>
<b>60</b>	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
<b>65</b>	Initialize PS/2 Mouse
<b>67</b>	Prepare memory size information for function call: INT 15h ax=E820h
<b>69</b>	Turn on L2 cache
<b>6B</b>	Program chipset registers according to items described in Setup & Auto-configuration table.
<b>6D</b>	<ol style="list-style-type: none"> <li>1. Assign resources to all ISA PnP devices.</li> <li>2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".</li> </ol>
<b>6F</b>	<ol style="list-style-type: none"> <li>1. Initialize floppy controller.</li> </ol>

	<ol style="list-style-type: none"> <li>2. Set up floppy related fields in 40:hardware.</li> </ol>
<b>73</b>	(Optional Feature) Enter AWDFLASH.EXE if: <ul style="list-style-type: none"> <li>- AwdFlash is found in floppy drive.</li> <li>- ALT+F2 is pressed.</li> </ul>
<b>75</b>	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM
<b>77</b>	Detect serial ports & parallel ports.
<b>7A</b>	Detect & install co-processor
<b>7F</b>	<ol style="list-style-type: none"> <li>1. Switch back to text mode if full screen logo is supported</li> </ol> <ul style="list-style-type: none"> <li>- If errors occur, report errors &amp; wait for keys.</li> <li>- If no errors occur or F1 key is pressed to continue: w/Clear EPA or customization logo.</li> </ul>
<b>82</b>	<ol style="list-style-type: none"> <li>1. Call chipset power management hook.</li> <li>2. Recover the text font used by EPA logo (not for full screen logo)</li> <li>3. If password is set, ask for password.</li> </ol>
<b>83</b>	Save all data in stack back to CMOS
<b>84</b>	Initialize ISA PnP boot devices.
<b>85</b>	<ol style="list-style-type: none"> <li>1. USB final Initialization.</li> <li>2. NET PC: Build SYSID structure.</li> <li>3. Switch screen back to text mode</li> <li>4. Set up ACPI table at top of memory.</li> <li>5. Invoke ISA adapter ROMs.</li> <li>6. Assign IRQs to PCI devices</li> <li>7. Initialize APM</li> <li>8. Clear noise of IRQs.</li> </ol>
<b>93</b>	Read HDD boot sector information for Trend Anti-Virus code
<b>94</b>	<ol style="list-style-type: none"> <li>1. Enable L2 cache</li> <li>2. Program boot up speed</li> <li>3. Chipset final initialization.</li> <li>4. Power management final initialization.</li> <li>5. Clear screen &amp; display summary table.</li> <li>6. Program K6 write allocation.</li> <li>7. Program P6 class write combining.</li> </ol>
<b>95</b>	<ol style="list-style-type: none"> <li>1. Program daylight saving.</li> <li>2. Update keyboard LED &amp; typematic rate.</li> </ol>

<b>96</b>	<ol style="list-style-type: none"> <li>1. Build MP table</li> <li>2. Build &amp; update ESCD.</li> <li>3. Set CMOS century to 20h or 19h</li> <li>4. Load CMOS time into DOS timer tick.</li> <li>5. Build MSIRQ routing table.</li> </ol>
<b>FF</b>	Boot attempt (INT 19h)

## IDE RAID Installation

### Introduction

The motherboard includes a high-end Ultra ATA/133 RAID (0 or 1) hard drive interface specifications supported through Promise® PDC20276 controller.

The Ultra ATA/133 interface boosts data transfer rates between the computer and the hard drive up to 133 megabytes (MB) per second. The new interface is one-third faster than earlier record-breaking Ultra ATA/100 technology and is backwards compatible with Ultra ATA100/66/33 interface drives.

The low-cost RAID (Redundant Array of Independent Disks) solution integrates two IDE RAID connectors that support PIO mode 0-4, Bus Master, and Ultra DMA 33/66/100/133 modes. The IDE RAID connectors allow you to connect Ultra ATA/DMA hard disks and use RAID technology (RAID 0 striping or RAID 1 mirroring) for high performance, data security and fault tolerance.

**RAID 0 (Data striping)** this will optimize two identical hard disk drivers to read and write data in parallel, interleaved stacks. Identical drives can read and write data in parallel to increase performance and storage.

**RAID 1 (Data mirroring)** this will copy and maintain an identical image of data from one drive to another. It will increase read performance through load balancing and elevator sorting while creating a complete backup of your files. It provides data protection and increases fault tolerance to the whole system.

### Steps for Installing your IDE RAID

The Promise PDC20276 Chip supports Ultra ATA 133/100/66/33 hard disk. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

#### RAID 0 (Data striping)

**For performance use two new drives when creating a RAID 0 array.**



#### RAID 1 (Data mirroring)

**For protection use two new drives or use an existing drive and a new drives (The new drive must be larger or the same as the existing drive) when creating a RAID 1 array.**

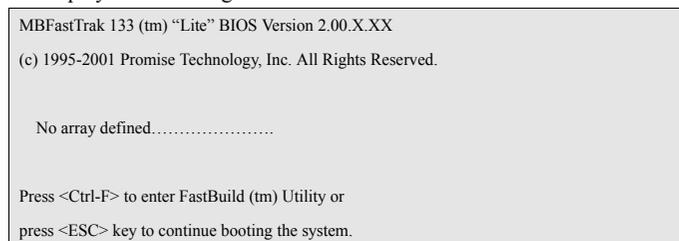
### 1. Installing the Hard Drives

To install the hard disks for RAID configuration please follow the following steps.

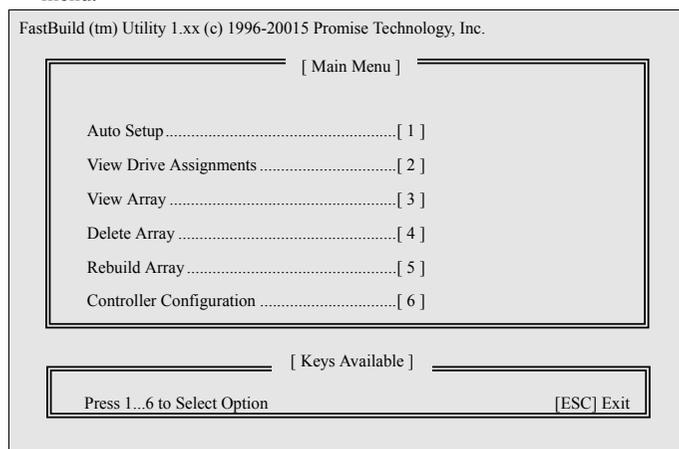
- 1) Make sure the jumper on each hard disk is set as Master
- 2) Install the hard disk into the drive bays.
- 3) Connect the Hard disk cables.
- 4) Connect the power cables for each hard drives to the appropriate power connector.
- 5) Boot the system and enter the BIOS Setup Utility.
- 6) Go to Integrated Peripherals menu and setup your IDE RAID devices.
- 7) Save changes and Exit Setup

### 2. Enter the MBFastBuild™ utility

- 1) Boot up the system. If this is the first time you have booted with the FastTrak 20276 and drives installed, the Promise onboard BIOS will display the following screen.

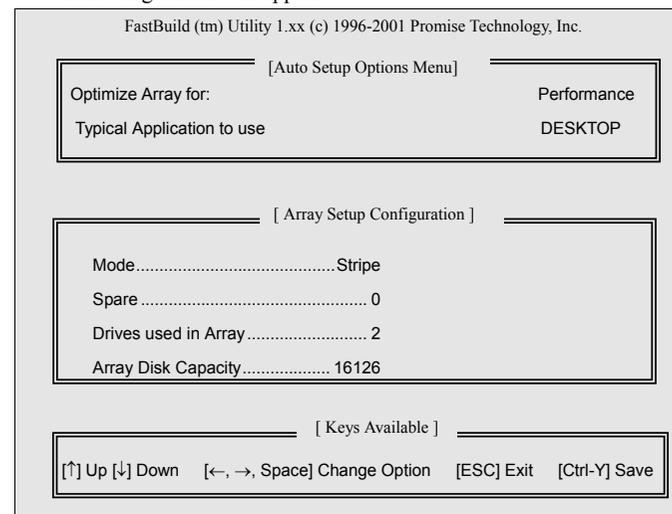


- 2) Press <Ctrl-F> simultaneously to display the FastBuild™ utility main menu.



### 3. Creating a RAID 0 array (Performance)

- 1) In the FastBuild™ utility main menu, press [1] to select Auto Setup. The following screen will appear.



- 2) Use the arrow keys to go to the field **Optimize Array for** and select [**Performance**] with the space bar. The mode field will display [**Stripe**].
- 3) After making a selection, press <Ctrl-Y> to save and create a RAID 0 array.

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

- 4) Reboot your system by pressing any key. During the boot process, the MBFasTrack20276 BIOS will check and display the disk array information.
- 5) Once the array is created, Use the FDISK utility to format the array as a single hard drive.
- 6) After you have formatted the arrayed drivers, install an operating system. The operating system will treat the RAID 0 array as a single drive unit.
- 7) Install the appropriate RAID driver.



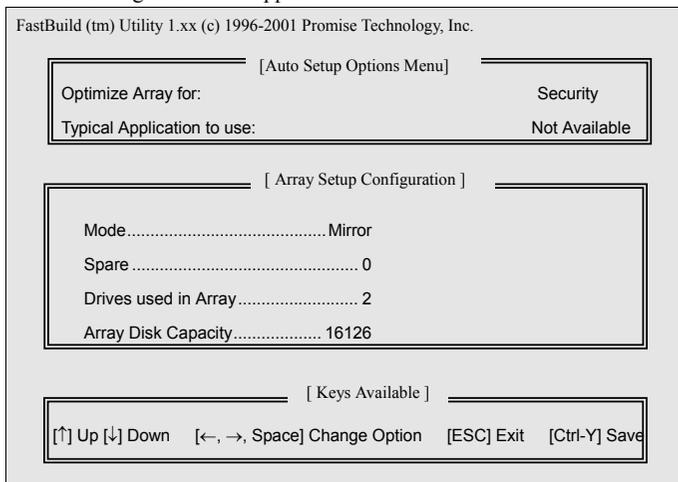
**Depending on the operating system that you install, you might have to install the RAID drivers during or after the Operating System installation.**

#### 4. Creating a RAID 1 array (Security)

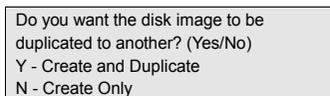
##### a) Creating a Security Array with New Drives

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

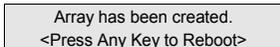
- 1) In the FastBuild™ utility main menu, press [1] to select Auto Setup. The following screen will appear.



- 2) Use the arrow keys to go to the field **Optimize Array for** and select [Security] with the space bar. The mode field will display [Mirror].
- 3) After making a selection, press <Ctrl-Y> to save and create a RAID 1 array.
- 4) The window below will appear.



- 5) Press [N] for the Create Only option. A message will appear to confirm that your Security array has been created.



- 6) Reboot your system by pressing any key. During the boot process, the MBFasTrack20276 BIOS will check and display the disk array information.
- 7) Once the array is created, Use the FDISK utility to format the array as a single hard drive.
- 8) After you have formatted the arrayed drives, install an operating system. The operating system will treat the RAID 0 array as a single drive unit.

- 9) Install the appropriate RAID driver.



**Depending on the operating system that you install, you might have to install the RAID drivers during or after the Operating System installation.**

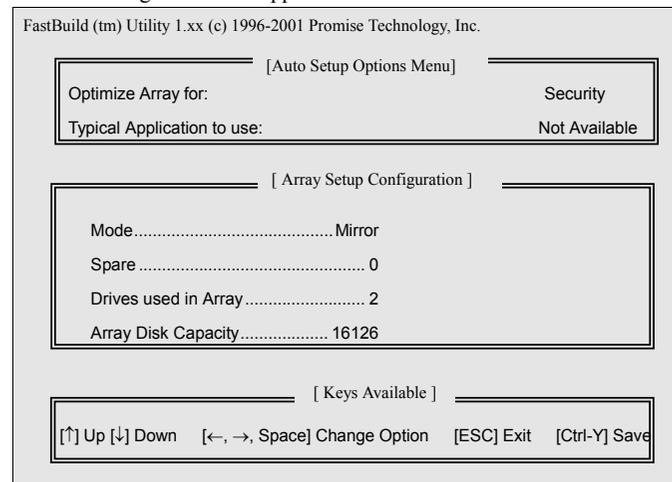
##### b) Creating a Security Array With An Existing Data Drive

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. Please follow these steps:

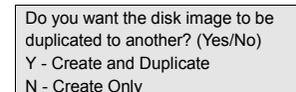


**Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.**

- 1) In the FastBuild™ utility main menu, press [1] to select Auto Setup. The following screen will appear.



- 2) Use the arrow keys to go to the field **Optimize Array for** and select [Security] with the space bar. The mode field will display [Mirror].
- 3) After making a selection, press <Ctrl-Y> to save and create a RAID 1 array.
- 4) The window below will appear.



- 5) Press [Y] for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use.

FastBuild (tm) Utility 1.xx (c) 1996-2001 Promise Technology, Inc.

[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

[ Keys Available ]

[↑] Up [↓] [ESC] Exit [Enter] Select

- 6) Use the arrow keys to choose which drive contains the existing data to be copied. FastBuild™ will copy all data from the Source drive to the Target drive.
- 7) Press <Enter> to save the selection and start the duplication. The following progress screen will appear.

Start to duplicate the image . . .

Do you want to continue? (Yes/No)

Y – Continue N – Abort

- 8) Select [Y] to continue. If you choose [N], you will be returned to the main menu.
- 9) When the duplication is complete, the following screen will appear confirming that your Security array has been created.

Array has been created.

<Press Any Key to Reboot>

- 10) Press any key to reboot the system.
- 11) Install the appropriate RAID driver.



**Depending on the operating system that you install, you might have to install the RAID drivers during or after the Operating System installation.**

## 5. Other FastBuild™ Utility Commands

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.

Command options 2-6 on the FastBuild™ Utility's main menu are not required for setting up an array, but they are useful for reconfiguring an array.

### a) 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.

This menu also displays the data transfer mode that relates to speed used by each drive (U6 refers to 133MB/sec transfers, U5 refers to 100MB/sec transfers, U4 refers to 66MB/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 [↓] Down [ESC] Exit Mode (D=DMA, U=UDMA)

### b) View Array

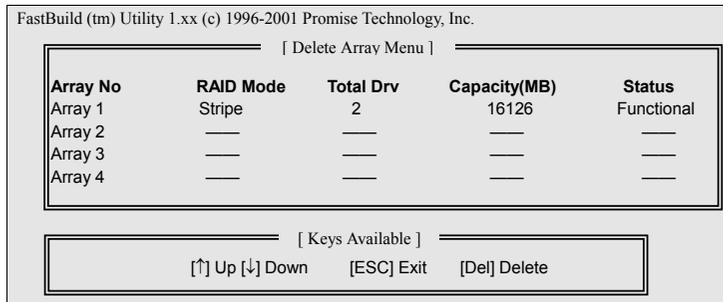
The View array [3] allows you to view the drive assignments of hard disks in an array.

### c) Deleting An Array

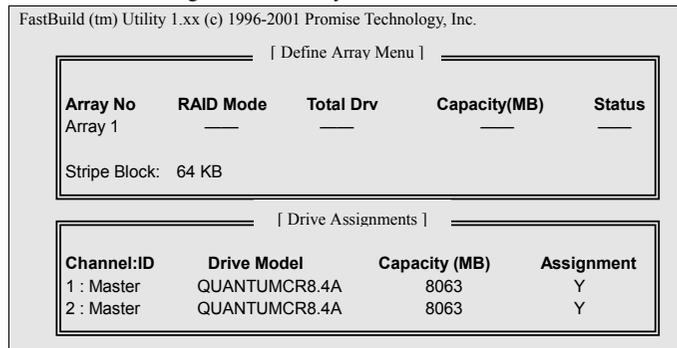
The Delete Array [4] Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted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



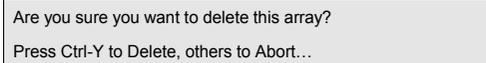
**Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.**



- 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 (see below) 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:



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

#### d) Rebuilding Array

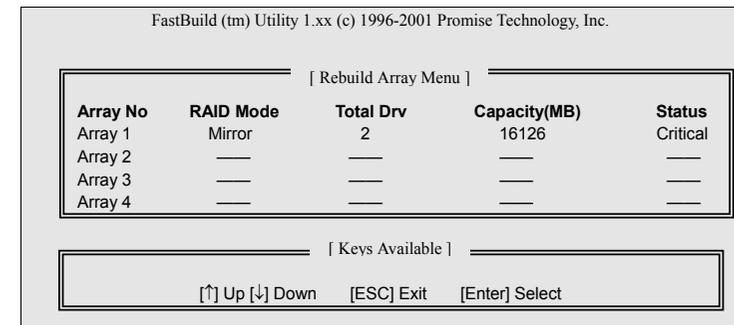
The Rebuild Array **[5]** Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the FastTrak BIOS.



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

Follow these steps BEFORE using the Rebuild Array menu option:

- 1) On bootup, the FastTrak20276 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.



- 9) Highlight the array whose Status is **[Critical]**.
- 10) Press **[Enter]**. The following screen will then appear.

FastBuild (tm) Utility 1.xx (c) 1996-2001 Promise Technology, Inc.

[ Rebuild Array Menu ]

Array No	RAID Mode	Total Drv	Status
Array 2	Mirror	2	Critical

Stripe Block: Not Available

[ Select Drive for Rebuild ]

Channel:ID	Drive Model	Capacity (MB)
1 : Slave	QUANTUMCR8.4A	8063

[ Keys Available ]

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

- 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.

#### e) Controller Configuration

The Controller Configuration [6] Menu option will allow you to Disable/Enable the Halt On Error option. The default value for Controller Configuration is [Enable].

FastBuild (tm) Utility 1.xx (c) 1996-2001 Promise Technology, Inc.

[ Adapter Configuration - Options ]

Halt On Error: Enable

[ System Resources Configuration ]

Channel 1	Interrupt : B	I/O Port : 9800
Channel 2	Interrupt : B	I/O Port : A000

[ Keys Available ]

[←, →, Space] Change Option [ESC] Exit

## How To Contact CHAINTECH

Please do not hesitate to contact us if you have any problem about our products. Any opinion will be appreciated.

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