Federal Communications Commission (FCC) Statement

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 and, if not installed and used in accordance with the instructions, 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 the receiver.
- ♦ Connect the equipment onto 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.

Shielded interconnect cables and shielded AC power cable must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

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

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

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TABLE OF CONTENTS

INTRODUCTION: ON YOUR MARKS!

Introduction

The P3BX-DS ATX motherboard can be used to create one of the most powerful computers on the market today. The P3BX-DS supports the installation of dual high-performance Pentium-II or Pentium-III processors from Intel. In addition, the board has an AGP (Accelerated Graphics Port) Professional slot that permits the use of the fastest and most powerful graphics cards available. Finally, the motherboard is pre-installed with an Ultra2 SCSI controller so that the system supports the fastest hard disks and CD-ROM/DVD drives. The P3BX-DS uses PC technology to challenge the performance of UNIX-based graphical workstations.

Using This Manual

This manual is designed to help you build a powerful graphics workstation based on the P3BX-DS platform.

Introduction: On Your Marks!

This chapter includes an introduction, a checklist of the items that ship with this motherboard, and a summary of the principal features and components.

Hardware: Get Ready!

This chapter explains how to prepare your motherboard for use, how to install it in a computer case, and how to make the various connections to other computer components and peripheral items.

Firmware: Get Set!

This chapter explains how to use the system setup utility that is stored in the motherboard' s firmware.

Software: Go!

This chapter explains how to install the utility software and drivers that ship with this motherboard.

Checklist

The P3BX-DS motherboard ships with the following components:

- ❑ P3BX-DS motherboard
- ❑ Two retention mechanisms for the slot-1 processor cartridge slots
- ❑ Slot-1 terminator card
- ❑ One floppy diskette drive ribbon cable
- ❑ Two IDE ribbon cables
- ❑ One Ultra-narrow SCSI ribbon cable
- ❑ One Ultra2 SCSI ribbon cable with terminator
- ❑ One Ultra-Wide SCSI ribbon cable
- ❑ One CD-ROM with support software
- ❑ One User Manual

If any item is missing, or any item appears damaged, contact your board vendor immediately.

P3BX-DS Motherboard Features

The P3BX-DS motherboard combines the most powerful technologies in the Intel architecture sector to create a platform that is ideally suited for demanding graphical applications such as 3D modeling and rendering, or for a high-traffic network server.

Supports Dual Processors

The P3BX-DS has two slots (slot1 type) which can be installed with either a Pentium-II processor cartridge or a Pentium-III processor cartridge. The Pentium II processor is one of Intel' s most powerful processors. It has 32K of internal cache memory and 512K of external cache memory. Current Pentium-II processors operate over a 100 MHz system bus and run at clock speeds of 350, 400, and 450 MHz. (Optionally, you can use legacy Pentium-II processors that operate over a 66 MHz bus and run at 233, 266 or 300 MHz)
Note: Celeron CPUs don' t support dual CPUs.

Pentium-III processors are identical to the Pentium-II processors except that they support over 70 new instructions which are designed to enhance multimedia and internet functionality by, for example, faster encoding and decoding of compressed audio and video files. The

2

Pentium-III operates over a 100 MHz system bus and ships with clock speeds of 450, 500, 550 MHz and upper.

Four SDRAM DIMM Slots

The motherboard has four DIMM (Dual In-line Memory Module) slots which support memory modules installed with 3.3V, PC-100 (100 MHz) SDRAM memory chips. Each memory module can support a maximum capacity of 256 MB so total maximum memory is 1 GB. The P3BX-DS motherboard supports memory with ECC (Error Checking and Correction) function, multiple-bit error detection and single-bit error correction. Furthermore, single-bit detection is available when multiple-bit is disables.

443BX AGPset

This Intel chipset is a superset of the 440BX chipset which is used to build the most powerful single processor PCs available today. The 443BX has all the features of the 440BX chipset plus it supports dual processors. The 440BX is the first Intel chipset designed to optimize the performance of the Pentium-III processor with its new instruction set. The 440BX also supports a full 1 GB of active memory and an AGP Professional slot that can be installed with the most powerful graphics adapters on the market.

Dual Channel Ultra2 SCSI

The mainboard is installed with a dual channel Ultra2 SCSI adapter. The board includes two Ultra2 connectors and one Ultra Fast connector that lets you build a SCSI chain of up to 30 devices, The Ultra2 SCSI specification calls for transfer rates of up to 80 MB/sec and a maximum cable length of 12 meters. Ultra2 SCSI is backward compatible with Ultra SCSI so you can continue using legacy SCSI devices. But, Ultra SCSI maximum cable length is down to 1.5 meters only.

AGP Professional Graphics Adapter Slot

The P3BX-DS motherboard has a Ver. 1.0 professional AGP slot. The AGP interface allows graphics applications to store texture rendering data in main memory thereby improving performance by freeing up Video memory for other operations. The professional version of the AGP slot successfully addresses the electrical and thermal problems created by high-speed graphics processing.
*Note: Although an AGP PRO Adapter may be available in the future, it has not been fully tested as of this writing.

System Input/Output

The motherboard features a full set of ATX I/O ports including:
- ♦ Two UDMA 33 PCI Enhanced IDE channels
- ♦ One floppy disk drive interface
- ♦ Two 16550-compatible serial ports
- ♦ One parallel port with support for ECP/EPP
- ♦ Two USB (Universal Serial Bus) ports Rev. 1.0
- ♦ One PS/2 mouse port
- ♦ One PS/2 keyboard port
- ♦ Optional Infrared port (includes SIR and CIR)

Expansion Slots

The full-sized ATX motherboard has a full complement of expansion slots including:
- ♦ One 32-bit AGP Professional slot
- ♦ Six 32-bit PCI slots
- ♦ One 8/16-bit legacy ISA slot

One PCI slot is shared with the ISA slot. This means that you can use either one of these slots but not both together at the same time.

System Firmware

The motherboard Phoenix BIOS features automatic configuration of the processor, ACPI power management, LAN and Alarm wake-up functions, and more. The firmware is stored on a Flash ROM and an updated BIOS can be flashed to the system using the support software.

Hardware Monitoring

The system supports hardware monitoring. The support software includes a desktop management application.

Power Specifications and Dimensions

The P3BX-DS is a full-sized ATX motherboard that requires a robust ATX power supply. The system supports Power button, Keyboard Power On, Mouse Power On, LAN/Modem/Alarm wake ups, etc.

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HARDWARE: GET READY!

Introduction

This chapter is a step-by-step guide that explains how to use your P3BX-DS motherboard to build a powerful network server or graphics workstation. At a minimum, you will need the following components in order to build a fully functioning system.

- ♦ Computer case with ATX power supply of 300W or up
- ♦ Intel Pentium-II processor or Pentium-III processor
- ♦ One SDRAM memory module 32MB
- ♦ One graphics adapter
- ♦ One audio adapter
- ♦ One floppy disk drive
- ♦ One IDE (or SCSI) hard disk drive
- ♦ One CD-ROM drive
- ♦ One display monitor
- ♦ One PS/2 mouse or USB mouse
- ♦ One PS/2 keyboard or USB keyboard
- ♦ One set of loudspeakers

Of course you can use the system I/O ports and expansion slots to add many more features and components to your system than the essential items listed above.

Safety Measures

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow the simple guidelines below to avoid damage to your computer or yourself.

❑ Always disconnect the motherboard from the ATX power supply, and disconnect the computer from the power outlet whenever you are working inside the computer case.

❑ If possible, wear a grounded wrist strap when you are installing the motherboard or working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis

of the computer case, or the bare metal body of any other grounded appliance.

❑ Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don' t flex or stress the circuit board.

❑ Leave all components inside the static-proof packaging that it ships with until you are ready to use the component for the installation.

Motherboard Layout

Use the following illustration and key to identify the major components on the motherboard.
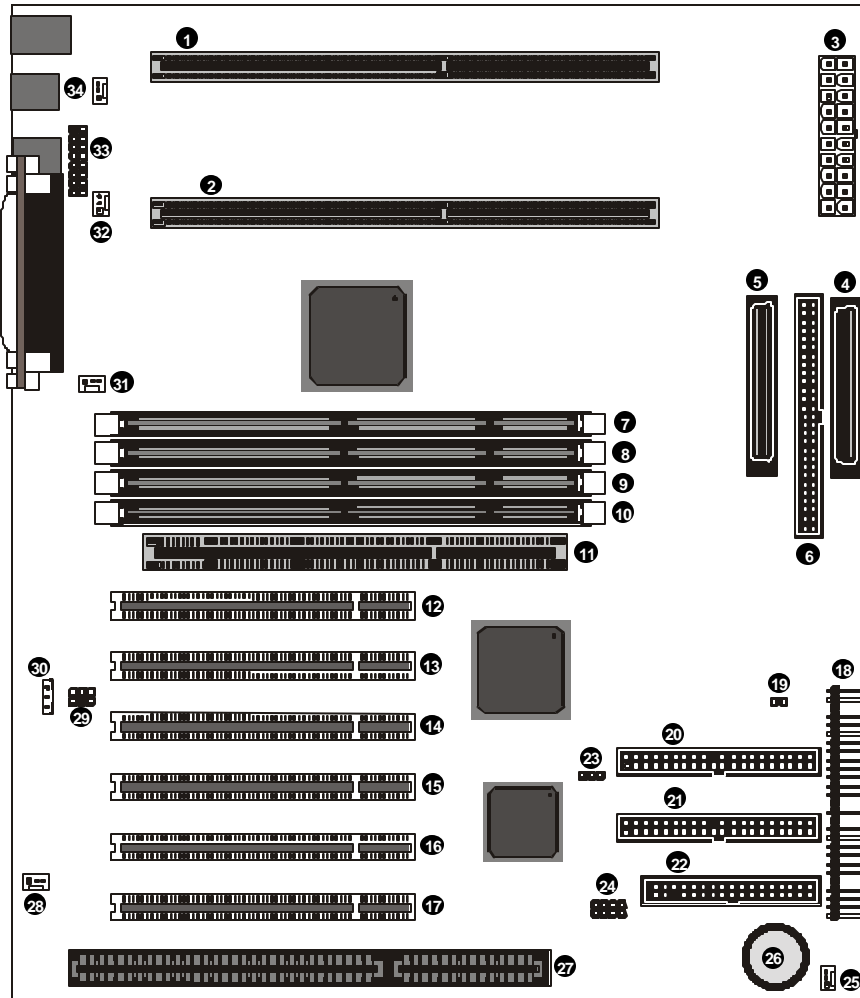
Key to Motherboard Components

Use the table below to identify the main components on the motherboard illustration.

No.	Name	Function
1	CPU2	Slot-1 for second Pentium-II/III processor cartridge
2	CPU1	Slot-1 for first Pentium-II/III processor cartridge
3	PWR	Socket for the ATX power supply cable
4	SCSI 2B	Ultra2 SCSI Connector
5	SCSI 2A	Ultra2 SCSI Connector
6	SCSI N	Ultra Fast SCSI Connector
7	DIMM1	Four DIMM slots for memory modules
8	DIMM2	
9	DIMM3	
10	DIMM4	
11	AGP PRO	Accelerated Graphics Port Professional slot
12	PCI1	Six 32-bit PCI slots
13	PCI2	
14	PCI3	
15	PCI4	
16	PCI5	
17	PCI6	
18	Panel	Case switches and indicators connector
19	CASE	Connector for Case Open Detect circuit
20	Secondary	Connector for secondary IDE channel
21	Primary	Connector for primary IDE channel
22	Floppy	Connector for floppy diskette drives
23	J2	Clear CMOS jumper
24	FREQ1	For manufacture testing only
25	FAN4	12V power supply for assistant cooling fan of chassis
26	BAT	Battery for CMOS memory
27	ISA1	Legacy 8/16-bit ISA expansion slot
28	WOM	Wake on Modem connector
29	SB LINK	SB-Link connector for PCI Sound Blaster audio cards
30	WOL	Wake on LAN connector
31	FAN1	12V power supply for cooling fan of CPU1
32	FAN3	12V power supply for cooling fan of chassis
33	LCDIN	Front panel I/O connector (PS/2 and USB ports)
34	FAN2	12V power supply for cooling fan of CPU2

I/O Ports

Like most ATX motherboards, this board is installed with a two-tier row of I/O ports. The illustration below shows a side-on view of the I/O ports.
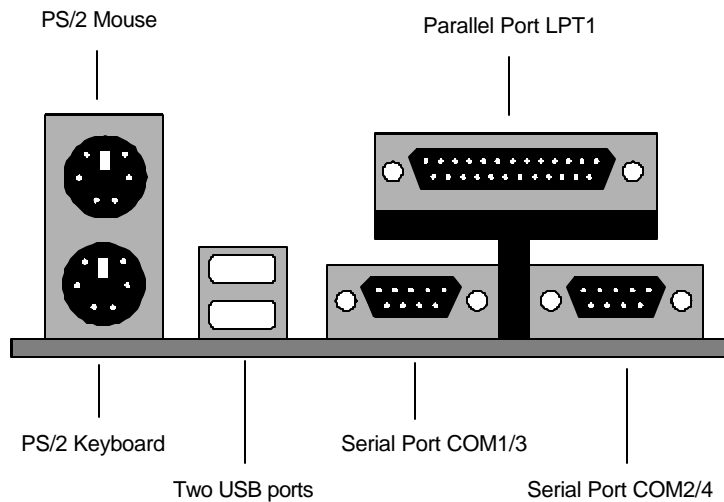
Pre-Installation Procedure

Before you install your motherboard into a computer case, it's convenient to install the processor(s), install the memory modules, and set all the jumpers to correct settings. Before you install the processor(s) you must install a retention mechanism (cartridge holder).

Dual Pentium-II/Pentium-III Processors

The motherboard has two slot1s (CPU1 and CPU2) for processor(s) installation. If you only install one processor cartridge, you can install it in either CPU1 or CPU2 and you must leave the terminator card plugged into another slot. However, we suggests user to install processor cartridge in CPU1.

If you install 2 processor cartridges, you must unplug the terminator card from CPU2. If you install two processor cartridges, you must install identical processor cartridges, that is, they must be both Pentium-IIs or Pentium-IIIs with the same clock speed and L2 cache size.
This mainboard supports legacy Pentium-II processors such as a Pentium-II running at 233 MHz over a 66 MHz system. However, since

this is a high-performance motherboard, we recommend that you install
current shipping versions of the Pentium-II/Pentium-III, for example;

- ✓ Pentium-II 350 MHz, 400 MHz, 450 MHz
- ✓ Pentium-III 450 MHz, 500 MHz, 550 MHz or up

Installing the Retention Mechanism and Processor Cartridge

If you are installing just one processor cartridge, install it in the slot1
named CPU1. If you are installing two processor cartridges, make sure
that the two processors are identical. And install the processors in
CPU1 and CPU2.

Processor Retention Mechanism

The slot1 processor slot must be installed with a retention mechanism
to support the processor cartridge and heatsink/cooling fan assembly.
The illustration below shows the retention mechanism that is pre-
installed on the motherboard. Two sets of retention mechanism
assemblies are shipped with this motherboard. Place the retention
mechanism over the slot1 cartridge slot. One end of slot1 has a notch,
and one end of the cartridge holder has a cut-out to ensure correct
installation. Push the four plastic pins through the holes in the cartridge
holder, and through the prepared holes in the motherboard, to secure
the cartridge holder in place. Pull the struts into the upright position
before proceeding with the installation.
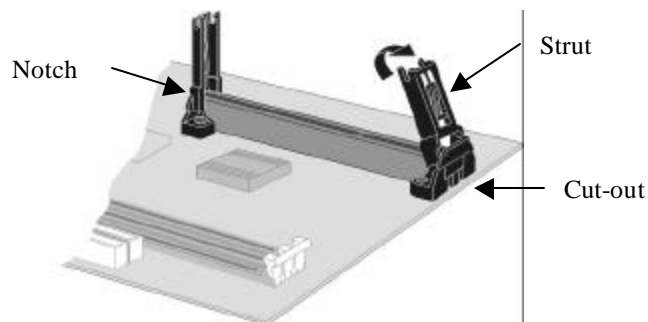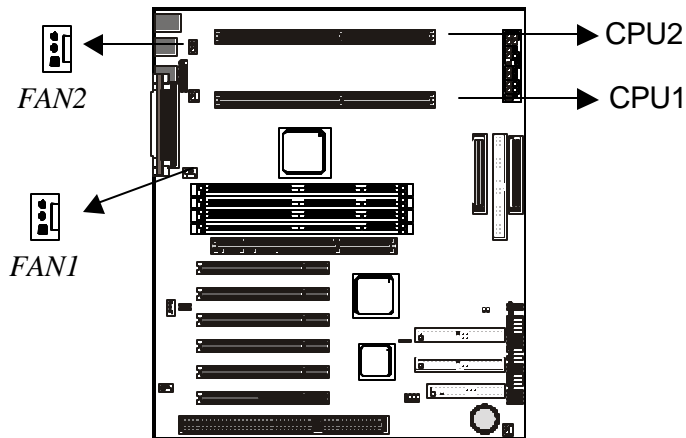
FAN2

FAN1

CPU2

CPU1

1. On the motherboard, identify the two Slot1s (CPU1 and CPU2) and the 12V power supplies for the processor cartridge's heatsink/cooling fan assemblies (FAN1 and FAN2).
2. Slide the processor cartridge/heatsink/cooling fan assembly into the retention mechanism.
3. Press the cartridge down quite firmly so that the edge connector on the cartridge seats properly into the Slot1. If you want to enable BIOS H/W Monitoring settings, plug CPU1 cooling fan to FAN1 and CPU2 cooling fan to FAN2.
4. Connect the cable from the processor's heatsink/cooling fan assembly to one of the 12V power supplies for cooling fans.
5. Configuration of the processor is carried out using the system setup utility as described in chapter three. Configure the processor the first time you turn on the assembled computer.

Install Memory Modules

This motherboard has four DIMM (Dual In-line Memory Modules) slots for the installation of memory modules. The memory modules must use 3.3V SDRAM memory chips. This board supports memory modules that use ECC (Error checking and Correction) function.

The memory modules must adhere to the PC-100 specification (operating over a 100 MHz memory bus). In addition, this board requires memory with an access time of 8ns or better. Each memory module can be populated with no less than 16 MB and no more than 256 MB. Total maximum memory is 1 GB. The motherboard cannot

function with less than 32 MB memory. If you are installing less than four memory modules, it makes no difference into which slot you install the modules.

1. On the motherboard, locate the four DIMM slots.

DIMM1 *DIMM2*

DIMM4 *DIMM3*
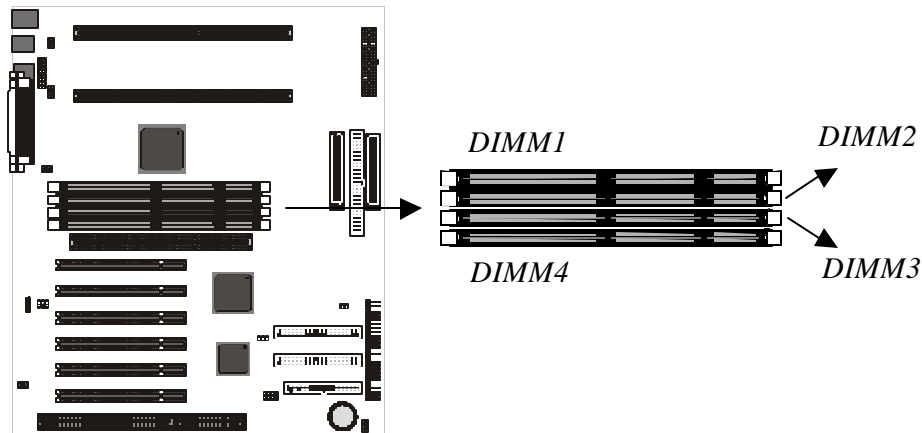
2. Pull the locking latches of the DIMM slot outwards.
3. Align the memory module correctly. The edge connector of the memory module has notches that match obstructions in the slot. You must match the notches with the obstructions in order to install the module.

Memory module

Locking latch

Notches

Obstructions
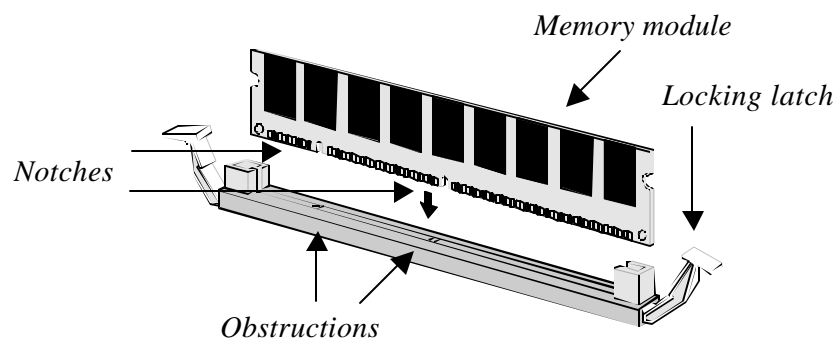
4. Press the edge connector of the memory module into the slot. Press down quite firmly so that the locking latches of the DIMM slot are levered upwards to secure the memory module in place.
5. Repeat the process with any other memory modules that you want to install.

Set the Jumpers

This motherboard has jumpers that need to be set correctly. Jumpers are sets of two, three or more pins. You can use a jumper cap to connect two adjacent pins. When a jumper cap connects two pins, we say that the pins are SHORT. If you remove a jumper cap from two pins, we say that the pins are OPEN. The examples and illustrations below show the different positions of a jumper cap on a typical 3-pin jumper. By changing the jumper cap, you change the circuits of the motherboard and enable or disable certain features or properties of the board.
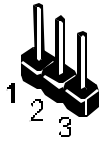
3-pin jumper with no jumper cap
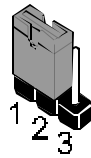
3-pin jumper with pins 1-2 SHORT
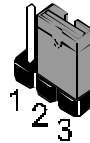
3-pin jumper with pins 2-3 SHORT

Locate the jumpers on the motherboard.

J2

12
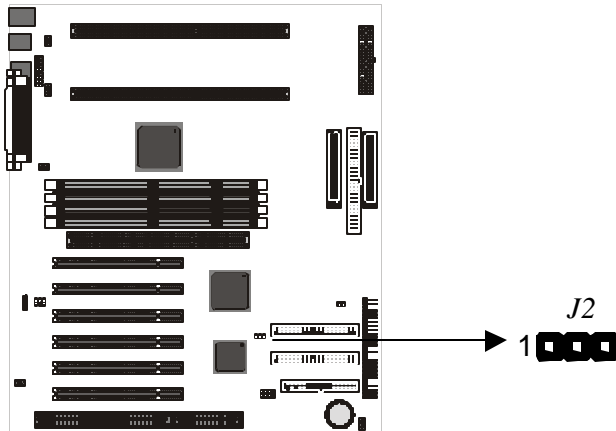
J2: Clear CMOS Memory

Use this jumper to clear the contents of CMOS memory. The setup utility is stored in CMOS, so you might need to clear this memory if incorrect setup data is stopping your system from starting. To clear the CMOS, disconnect the ATX power cable from the motherboard. Move the jumper cap to the Clear setting and leave it for a few seconds. Then return the jumper cap to the normal setting and reconnect the power cable.

Function	Jumper Setting
Normal operation	Short pins 1-2
Clear CMOS	Short pins 2-3

Install the Motherboard in a Computer Case

After you have prepared the motherboard by installing one or two processors, one or more memory modules, and have set the jumpers correctly, install the board into a computer case and begin connecting essential peripheral items to the connectors on the motherboard.

Choosing a Computer Case

This is a full-sized ATX motherboard, so you must use a computer case that is installed with an ATX power supply unit. The case should have openings in the rear edge for all the seven expansion slots that are available on this board. Make sure that the computer case has a two-tier I/O template on the rear side that matches the two-tier I/O port array on this board.

This board can support two floppy diskette drives and four IDE devices, so you might want to choose a case that allows you to install a full complement of six devices. Make sure that the case power supply unit has enough capacity to power all the drives that you plan to install.

Follow the instructions given with the computer case to install the board onto the mounting brackets inside the case. The motherboard has several holes drilled through it, and you should be able to drive a screw through some of these holes into the mounting brackets in the case. Don' t overtighten the screws as this can stress the motherboard.

Connecting the Case Components

Most computer cases include a power supply unit, power and reset switches and indicators, and frequently a chassis cooling fan. This section explains how to connect these and other components.

***Note:** Make sure that the power supply unit in the case is not connected to a power outlet while you are carrying out the installation procedure.*

1. On the motherboard, locate the power connector PWR, the PANEL connector, the cooling fan power connectors FAN3 and FAN4, and the CASE case open detect connector.
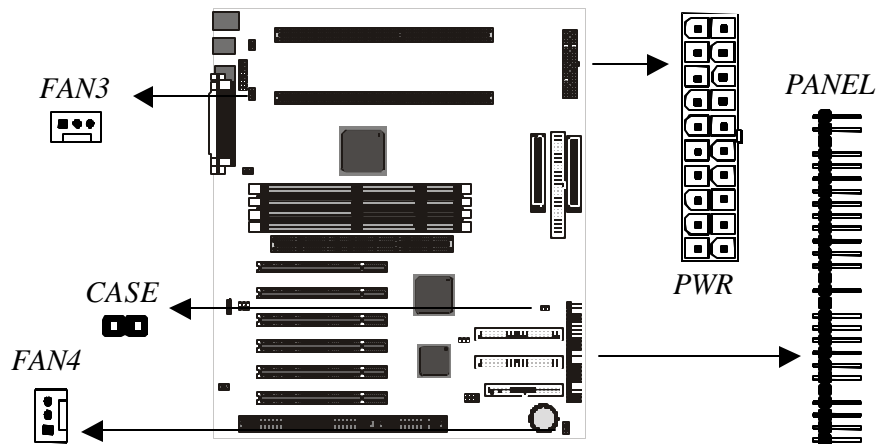
2. Plug the main power supply cable from the case power supply unit into the PWR connector on the motherboard.
3. If your computer case has a chassis cooling fan or fans, plug the power cable of the cooling fans into either of the two 12V cooling fan power connectors FAN3 or FAN4. If you want to enable BIOS H/W Monitoring Setting, connects chassis cooling fan to FAN3.
4. If your computer case has a case open detect alarm circuit, connect the cable from the circuit to the CASE connector on the motherboard.
5. Locate the PANEL connector on the motherboard. Begin connecting the case switches and indicators to the appropriate pins on the PANEL connector. Use the illustration and tables below to make the correct connections.

14

```
27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1
```
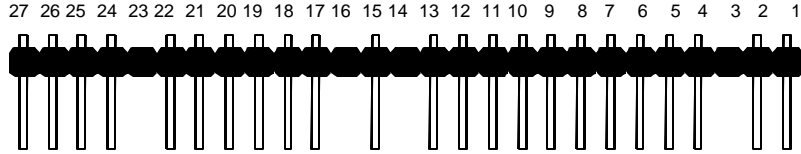
PIN	Assign.	Function	PIN	Assign.	Function
1	Data Out	Speaker	16	No Function	Infrared Port
2	NC		17	CIR rcvr	
3	NC		18	SIR transcvr	
4	+5V		19	Ground	
5	Reset Switch		20	SIR rcvr	
6			21	NC	
7	Pwr Data Out	Power LED and Suspend LED	22	+5V	
8	Pwr Data Out		23	No Function	
9	Ground		24	Suspend Switch	
10	Susp Data Out		25		
11	Ground		26	Power Switch	
12	+5V	Hard Disk LED	27		
13	Active Low				
14	NC				
15	+5V				

Use the Hard Disk LED pins according to the table below:

Single color LED 2-pins	Connect to pins 12-13
Single color LED 3-pins	Connect to pins 13-14-15

Use the Power LED and Suspend LED pins as follows:

One 3-pin cable with dual colors for Power & Suspend (*2)	Connect to pins 8-9-10
One 3-pin cable with single color for Power only (*1)	Connect to pins 8-9-10
One 2-pin cable for Power LED & one 2-pin cable for Suspend LED (*1)(*2)	Connect Power to pins 8-9, connect Suspend to pins 10-11
One 3-pin cable for Power LED & one 2-pin cable for Suspend LED (*1)(*2)	Connect Power to pins 7-8-9, connect Suspend to pins 10-11

Note: *1 BIOS Menu setting "Power LED State" selects "Always On", the others
should have "Suspend Off" selected.
*2 BIOS Menu setting "Suspend LED State" selects "Always On", the others
should have "Pulse Trigger" selected.

Install a Floppy Diskette Drive

The motherboard has a floppy diskette drive interface that will support one or two floppy disk drives. The floppy diskette drive ribbon cable has connectors for two 3.5" wide diskette drives.

Note: The pin-1 side of the floppy diskette drive ribbon cable is marked with a red stripe.

1. Install the floppy diskette drive into a suitable drive bay in your computer case.
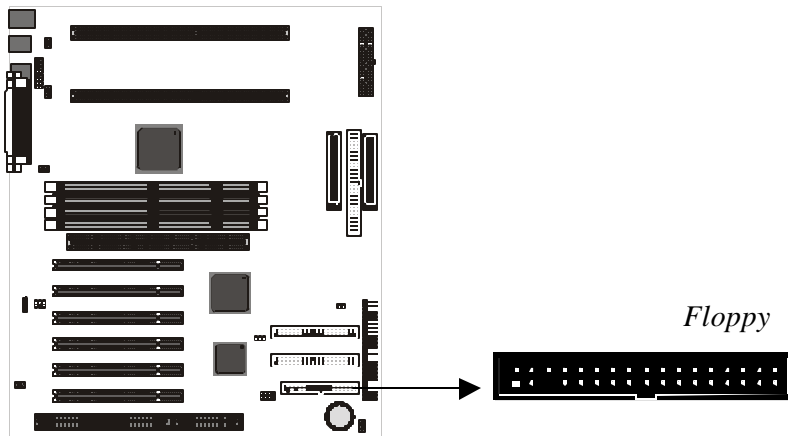
Floppy

2. Locate the floppy diskette drive connector on the motherboard. The connector is named FLOPPY. Plug one end of the floppy diskette drive ribbon cable into FLOPPY. Plug one of the other connectors into the data connector on the rear edge of the floppy diskette drive.
3. Plug a free power supply cable from the case power supply unit into the power connector on the rear edge of the floppy diskette drive.
4. When you start up your assembled computer, the floppy diskette drive is identified as drive A. If you have installed two drives on the cable, they are identified as drives A and B.

Install IDE Devices

The motherboard has two IDE channel connectors, the Primary IDE channel and the Secondary IDE channel. Each IDE channel can support two devices. IDE devices include hard disk drives, CD-ROM drives and removable media drives such as ZIP drives and LS-120 drives. This motherboard ships with two IDE cables.

> **Note:** *The pin-1 side of the IDE ribbon cable is marked with a red stripe.*

Master & Slave

When you install two devices on a single IDE channel, you must configure one of the devices as a MASTER device and one of the devices as a SLAVE device. These configurations have no effect on performance and are just a naming convention so that your computer system can distinguish between the two devices on the same channel.

All IDE devices have documentation that tells you how to set the device as MASTER or SLAVE. Normally you do this by changing a jumper on the rear edge of the device. If you are installing two devices on the IDE ribbon cable, configure one device as MASTER and one device as SLAVE before you begin.

Installing the Device

1. Install the IDE device(s) into a suitable drive bay in your computer case.

SECONDARY
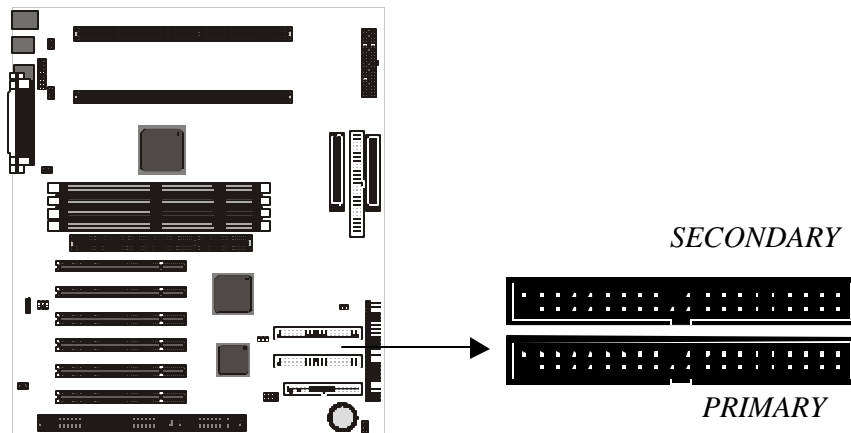
PRIMARY

2. Locate the Primary IDE channel connector on the motherboard. The connector is named PRIMARY. Plug one end of the IDE cable into PRIMARY. Plug one of the other connectors into the data connector on the rear edge of the IDE device. If you are installing two devices, plug the other connector into the data connector on the rear edge of the second device.
3. Plug a free power supply cable from the case power supply unit into the power connector on the rear edge of the IDE device(s).
4. When you start up your assembled computer, an IDE hard disk drive on the primary IDE channel is identified as drive C. A second IDE drive on the primary IDE channel is identified as drive D.

Installing SCSI Devices

This motherboard has an Integrated Ultra2 SCSI host controller. The SCSI controller has three interfaces on the motherboard; two Ultra2 68-pin connectors and one Ultra narrow 50-pin connector. One SCSI2 cable and one SCSI-Wide cable are provided for the 68-pin connectors and one SCSI-Narrow cable is provided for the 50-pin connector. You can connect up to 15 devices to each of the SCSI2 or SCSI-Wide cables.

Ultra2 68-pin

Ultra2 68-pin

Ultra Narrow 50-pin
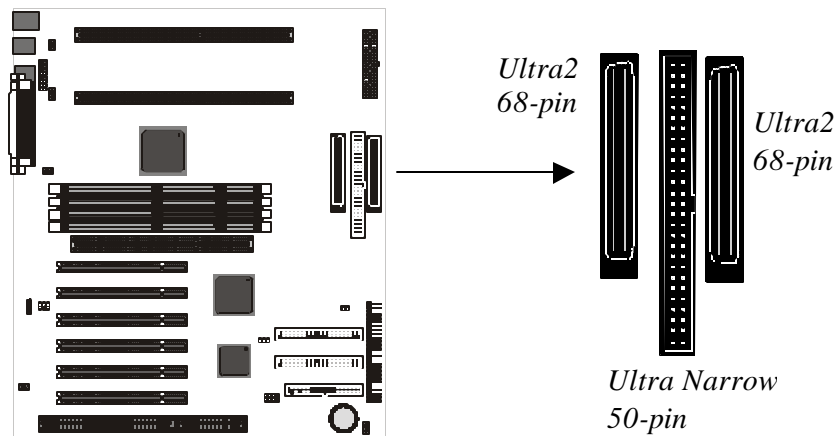
About SCSI devices

When you create a chain of SCSI devices, you must follow some simple rules. Every SCSI device must be assigned a unique SCSI ID number. The documentation of the device has information on changing the SCSI ID numbers. The onboard SCSI controller also has a unique

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ID number. You can check the controller ID by running the SCSI BIOS (a prompt appears each time you start the system).

When you create a chain of SCSI devices, each end of the chain must be terminated. How you terminate the chain depends on your SCSI setup

SCSI Connection

Configuration 1

Run the setup utility (a prompt appears each time you start the system) and go to SCSI Control on the Advanced Screen. You can enable termination on the M/B terminators here.
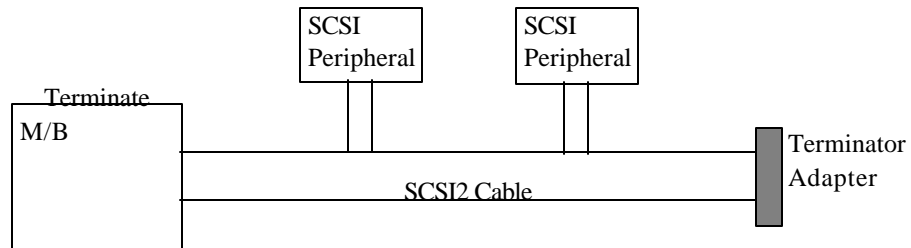
Configuration 2

Run the setup utility (a prompt appears each time you start the system) and go to SCSI Control on the Advanced Screen. You can disable termination on the M/B terminators here.
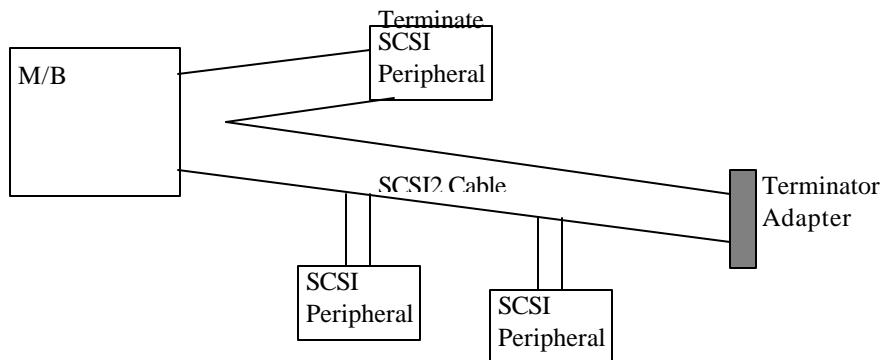
Configuration 3

Run the setup utility (a prompt appears each time you start the system) and go to SCSI Control on the Advanced Screen. You can enable termination on the M/B terminators here.

```
                              ┌──────────┐
                              │ SCSI     │
                              │ Peripheral│
     Terminate                └──────────┘
    ┌──────────┐                          Terminate
    │ M/B      │                          ┌──────────┐
    │          │                          │ SCSI     │
    │          │   SCSI-Wide / SCSI-Narrow Cable  │ Peripheral│
    │          │                          └──────────┘
    └──────────┘
```
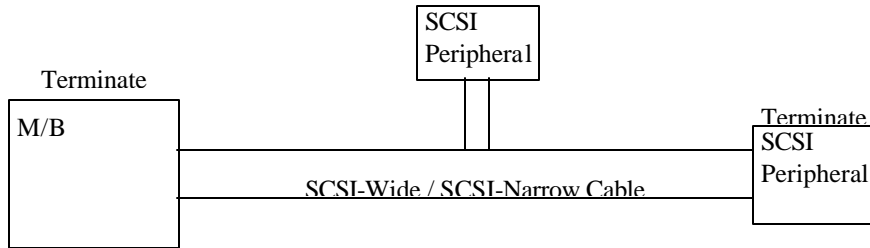
Configuration 4

Run the setup utility (a prompt appears each time you start the system) and go to SCSI Control on the Advanced Screen. You can disable termination on the M/B terminators here.

```
                         Terminate
    ┌──────────┐         ┌──────────┐
    │ M/B      │         │ SCSI     │
    │          │         │ Peripheral│
    │          │         └──────────┘
    │          │   SCSI-Wide              Terminate
    │          │        / SCSI-Narrow Cable  ┌──────────┐
    └──────────┘                          │ SCSI     │
                                          │ Peripheral│
                    ┌──────────┐          └──────────┘
                    │ SCSI     │
                    │ Peripheral│
                    └──────────┘
```

20
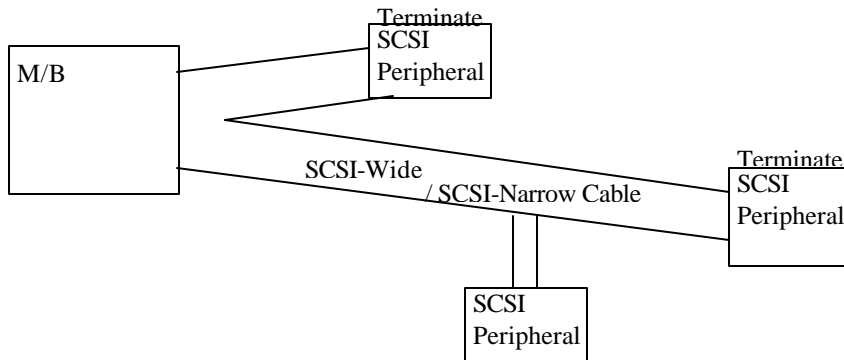
Installing Expansion Cards

This motherboard has one AGP Professional slot, six 32-bit PCI slots and one 8/16-bit ISA slots .The PCI slot and the ISA slot that are side by side (PCI6 and ISA1) are shared. This means that you can use either of these slots but you cannot use them both at the same time.

❑ The AGP Professional slot (*1) supports an add-in graphics adapter which has an AGP (Accelerated Graphics Port) or AGP Professional edge connector.

❑ The PCI slots support current add-in cards which have a 32-bit PCI (Peripheral Components Interface) edge connector.

❑ The ISA slot supports legacy add-in cards which have an 8/16-bit ISA (Industry Standard Architecture) edge connector.

Note: *1. Although an AGP PRO Adapter may be available in the future, it has not been fully tested as of this writing.

Locate the expansion slots on the motherboard.
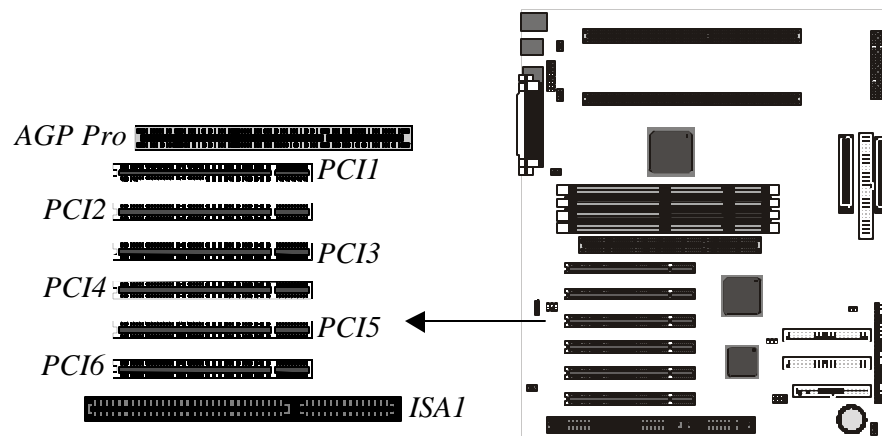
1. Select which slot you plan to use according to the kind of add-in card you are going to install.
2. In the computer case, remove the blanking plate from the opening in the case adjacent to the slot you are going to use.

3. Hold the edge connector of the add-in card directly over the slot that you are going to use. The metal bracket on one edge of the add-in card fits into the opening from which you removed the blanking plate.
4. Carefully press the card down so that the edge connector installs into the expansion slot. You might need to rock the card slightly to make sure that the edge connector is seated properly into the slot.
5. Drive a screw through the metal bracket on the edge of the card to secure it in place. The opening in the case has a screw available on the top of the opening.

Add-in Card Options

This motherboard has some special features to support certain kinds of add-in cards. If you have installed a network adapter or a fax/modem, you can connect them to the wake-up connectors. If you have installed a PCI Sound Blaster, you can connect it to the SB-link connector.

WOL

SB Link

WOM
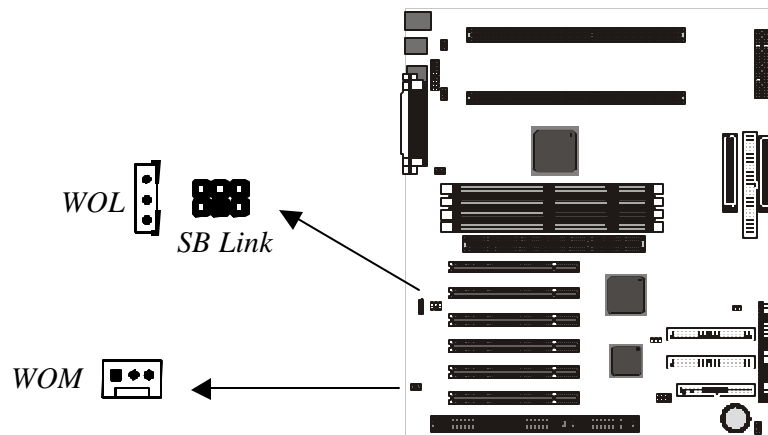
WOM: Wake On Modem

If you install a fax/modem add-in card, you can cable the card to the WOM connector. If you enable the wake on modem setting in the setup utility, incoming calls can resume the system from a power-saving mode or a software power down.

WOL: Wake On LAN

If you install a network adapter add-in card, you can cable the card to the WOL connector. If you enable the wake on LAN setting in the setup utility, an incoming wake-up event can resume the system from a power-saving mode or a software power down.

SB-Link Connector

If you have installed a PCI Sound Blaster add-in card, you can cable the card to the SB-Link connector. The SB-Link circuit solves some problems that can occur when you play old computer games that run the DOS real-mode environment.

Front-Panel I/O Connectors (optional)

On this motherboard, the PS/2 ports for keyboard and mouse, and the USB (Universal Serial BUS) ports are all installed on the back-edge of the motherboard so that they appear in the back side of a computer case.

Some computer cases now locate these ports on the front panel of the case. (Some motherboards ship with a I/O module that can be installed in a floppy diskette drive bay.) If you are using this type of computer case, or this kind of I/O module, you can use the connectors LCDIN to relocate the PS/2 ports and USB ports to the front panel.

Note: *If you use the LCDIN connector to relocate the PS/2 and USB ports, the equivalent ports on the rear edge of the motherboard no longer function.*
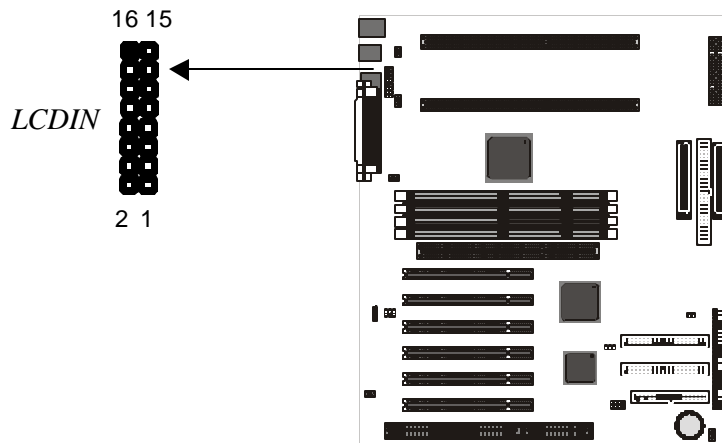
The pinouts for the LCDIN connector are shown in the following table.

PIN#	Assign.	Device
1	Ground	USB port 0
3	USJ0+	
5	USJ0-	
7	VCCU0	
2	Ground	USB port 1
4	USJ1+	
6	USJ1-	
8	VCCU1	
9	MSCLK	PS/2 Ports
10	KBCLK	
11	MSDATA	
12	KBDATA	
13	VCC PS2	
14	Ground	
15	No function	
16		

☞ Note:

On Page 25, "Starting the Setup Utility"
If you are not sure how to configure the setup utility, we suggest
that you select " Load Setup Default" under "Exit" on the menu bar.
This will load the optimized defaults setting for normal use.

FIRMWARE: GET SET!

Introduction

This chapter explains how to use the system setup utility that is stored in the system BIOS or firmware. The setup utility is like a database of the hardware that is installed in your computer. It contains information about the configuration of the hardware, how you want the hardware to operate, the current date and time, and so on.

When you have assembled your computer, you should immediately run the setup utility to configure the new hardware that you have used to build your system. Thereafter, you may not need to visit the setup utility again unless you make changes to the hardware configuration of the system.

Starting the Setup Utility

To run the setup utility when booting your system, press the **Esc** key when the Q-lity Logo screen appears to skip to the BIOS POST screen. After being prompted to *Press <F2> to enter SETUP*, press the **F2** key and the screen will display the setup utility opening page. You can access the Boot Menu if you press the **Esc** key before you press **F2**.

Using the Utility

The setup utility consists of six sections. These sections are always displayed on the menu bar on the top of the setup utility display. You can select any of them by using the cursor left and right keys to move the highlight on the menu bar.

Main	This page controls basic system information such as date, time, and drives.
Advanced	This page controls advanced system information such as hardware access settings.
Security	This page allows you to set security access levels of control for your system.
Power	This page controls the built-in power management features of your system.
Boot	This page controls the boot settings of your system.

Exit   The last item on the menu bar is the Exit screen.
                      The Exit screen lets you exit the utility in different
                      ways.

Changing Setup Values

Each of the configuration screens shows a list of options. On the right
of most options, there is a value for that option. When a screen is
opened, the value at the top of the screen is highlighted. You can move
the screen highlight up and down the list of values by using the cursor
arrow up and down keys.

When a value is highlighted, you can change the value by pressing the
Space Bar, or by pressing the **Plus** or **Minus** keys. The Space Bar and
the Plus key cycle forwards through the available values, the Minus key
cycles backwards.

Some options have a small arrow on the left side (▸) and no value
installed on the right side. This indicates that there is a sub-menu of
items for this option. When the option is highlighted, press the **Enter**
key to display the sub-menu. Follow the normal procedure to install or
change values in the sub-menu. Press the **Esc** key when you have
finished making changes to the sub-menu and you want to return to the
original screen.

Other Setup Hot Keys

For most items, you can press **F1** to display a help screen. If the help
message is longer than the help screen, use the cursor arrow up and
down keys to scroll through the message. Press any key to close the
help screen.

From any of the top-level configuration screens, press **Esc** to display
the Exit screen. Press **F9** to install the entire setup utility with a set of
default values. The default values are designed to work with most
possible configurations of this system. The default values may not be
the optimal values for your system.

Press **F10** to enable a shortcut, which lets you save any changes you
have made to setup and exit the utility. The screen will display an exit
dialog box. Highlight **YES** and press **Enter** to save the changes and
exit. Highlight **NO** and press **Enter** to close the dialog box and return to
setup.

Main Screen

The Main screen displays basic information about your system. It looks similar to the illustration below.

```
                    PhoenixBIOS Setup Utility
  Main  Advanced  Security  Power  Boot  Exit

  ┌──────────────────────────────────────┬────────────────────────┐
  │                                      │   Item Specific Help   │
  │ System Time:        [13.00.00]       │                        │
  │ System Date:        [04/15/99]       │                        │
  │                                      │ <Tab>, <Shift-Tab>, or │
  │ Legacy Diskette A:  [1.44/1.25 MB 3 1/2"] │ <Enter> selects field. │
  │ Legacy Diskette B:  [Disable]        │                        │
  │                                      │                        │
  │ ▶ Primary Master    [10141 MB]       │                        │
  │ ▶ Primary Slave     [None]           │                        │
  │ ▶ Secondary Master  [None]           │                        │
  │ ▶ Secondary Slave   [None]           │                        │
  │                                      │                        │
  │ System Memory       640 KB           │                        │
  │ Extended Memory     31744 KB         │                        │
  │                                      │                        │
  └──────────────────────────────────────┴────────────────────────┘
  F1  Help - ˉ Select Item -/+  Change Values    F9  Setup Defaults
  Esc Exit « Select Menu Enter Execute Command  F10 Save and Exit
```

System Time & System Date

Use these items to install your system with the correct time and date.

Legacy Diskette A & Legacy Diskette B

Use these items to define the characteristics of the floppy diskette drives that you have installed in your system.

Primary Master & Primary Slave
Secondary Master & Secondary Slave

These four items are used to define the characteristics of the four IDE devices which can be installed on the primary and secondary IDE channels. Press **Enter** at each of these items to display the IDE device sub-menu. Most IDE devices are automatically detected and configured by the system. If a device has been automatically detected and configured, don' t try to change the automatic settings.

Type	Select **Auto** to have the BIOS automatically detect the characteristics of the IDE hard disk drive. Select **User** if you want to manually enter the characteristics of your hard disk drive using the items below (Cylinder, Head, etc.). Select types **1-39** to install a pre-set list of hard disk characteristics. Select **CD-ROM** for a CD-ROM drive. Select **ATAPI Removable** for a drive with removable media such as a ZIP or LS-120 diskette drive
Cylinders	
Heads	If you have selected **User** for the Type field, use these items to manually define the characteristics of the IDE hard disk drive that you have installed.
Sectors	
Maximum Capacity	
Multi-Sector Transfers	Use this field to enable or disable multi-sector transfers. Any selection except **Disabled** determines the number of sectors transferred per block. **Standard** is 1 sector per block.
LBA Mode Control	Use this field to enable or disable Large Block Addressing. Enabling LBA causes logical block addressing to be used in place of Cylinders, Heads & Sectors.
32 Bit I/O	Use this field to enable or disable 32-bit IDE data transfers between the processor and the IDE channel.
Transfer Mode	Use this item to select a PIO (Programmable Input/Output) mode for the hard disk drive.
Ultra DMA Mode	Use this field to enable an Ultra DMA mode. If your IDE device supports Ultra DMA, it provides faster access to the device.

System Memory & Extended Memory

These items are automatically detected by the system. They show the total amount of usable memory installed in your system.

Advanced Screen

The advanced screen displays more advanced information about your system.

```
                    PhoenixBIOS Setup Utility
    Main  Advanced  Security  Power  Boot  Exit

Use Multiprocessor Specification  [1.1]/[1.4]      Item Specific Help
Legacy USB Control             [Disabled]
Install O/S                    [Win95]
Reset Configuration Data       [No]       Configuration the MP
  ▶  PCI Configuration                    Specification revision
  ▶  Cache Memory                         level. Some operating
  ▶  I/O Device Configuration             systems will require
Large Disk Access Mode         [DOS]      1.1 for compatibility
Local Bus IDE adapter          [Both]     reasons
  ▶ Advanced Chipset Control
  ▶ Hardware Monitor Inputs
  ▶ Hardware Monitor Control
  ▶ CPU Clock Control
  ▶ Power Supply Control
  ▶ SCSI Control

F1  Help  -¯  Select Item -/+   Change Values    F9   Setup Defaults
Esc Exit  «   Select Menu Enter Execute Command  F10  Save and Exit
```

Use Multiprocessor Specification

Use this item to define the Version number of the multiprocessor specification.

Legacy USB Control

Use this item to enable or disable the USB (Universal Serial Bus) ports that are installed on this system.

Install OS

If you have more than one operating system installed on your system, use this item to select which OS your system boots at start up time.

Reset Configuration Data

The system keeps a record of the configuration of the Plug and Play devices on your system. If you set this item to **Yes**, the system will erase the current record and create a new one at the next start up.

PCI Configuration

This item defines the operation of devices on the PCI bus. Press **Enter** to display the PCI Configuration sub-menu.

PCI Device Slot #1/2/3/4/5/6	Use these items to select the PCI slot into which the device is installed.
Enable Master	Use this item to enable or disable bus mastering for the selected device.
Latency Timer	Use this item to select a minimum guaranteed Time slice allotted for bus master in units of PCI bus clocks.
PCI/PNP ISA UMB Region Exclusion	Reserve specific upper memory blocks for use by legacy ISA devices.
PCI/PNP ISA IRQ Resource Exclusion	Reserve specific IRQs for use by legacy ISA devices.

Cache Memory

This item defines the operation of the cache memory. Press **Enter** to display the cache memory sub-menu.

Memory Cache	Use this item to enable or disable memory caching.
Cache System BIOS Area	Use this item to cache the system BIOS to active memory for faster execution.
Cache Video BIOS area	Use this item to cache the video BIOS to active memory for faster execution.
Cache Base 0-512k	This item controls the caching of the 512k base memory area.
Cache Base 512k-640k	This item controls the caching of the memory area from 512k to 640k.
Cache Extended Memory Area	This item controls the caching of system memory above 1 MB.
Cache A000-AFFF Cache B000-BFFF	These items control the caching of the memory area between the given addresses. *Disabled* stops caching. *USWC caching* enables *Uncached Speculative Write Combined* caching. *Write Through* allows writes to be cached and sent to memory at once. *Write Protect* means that writes are ignored. *Write Back* means that writes are cached but not sent to memory until necessary.
Cache C800-CBFF Cache CC00-CFFF etc.	These items control the caching of the memory area between the given addresses. *Disabled* stops caching. *Write Through* allows writes to be cached and sent to memory at once. *Write Protect* means that writes are ignored. *Write Back* means that writes are cached but not sent to memory until necessary.

I/O Device Configuration

Use this item to configure some of the I/O ports that you use to connect to peripheral items. Press **Enter** to display the I/O Device Configuration sub-menu.

Serial port A Serial port B	Use this item to configure serial port A (COM1/3) and serial port B (COM2/4). Select *Disabled* to disable the port. Select *Enabled* to allow user configuration. Select *Auto* to have the BIOS or OS automatically configure the port. Select *OS Controlled* to have the OS automatically configure the port.
Mode	Use this item to select the mode of serial port B. Select *Normal* to configure it as the normal serial port. Select *IRDA* to configure serial port B as an infrared port.
Parallel port	Use this item to configure the parallel port (LPT1). Select *Disabled* to disable the port. Select *Enabled* to allow user configuration. Select *Auto* to have the BIOS or OS automatically configure the port. Select *OS Controlled* to have the OS automatically configure the port.
Mode	Use this item to select the mode of the parallel port. Select *Output only*, *Bi-directional, EPP* (Enhanced Parallel Port), or *ECP* (Extended Capabilities Port).
Floppy disk controller	Use this item to enable or disable the floppy disk controller integrated on the mainboard.
Base I/O address	Use this item to select a base I/O address for the floppy disk controller. Select *Primary* or *Secondary*.
Floppy Drive Swap	If you have two floppy diskette drives installed you can use this item to swap the drives around so that drive A becomes drive B, and drive B becomes drive A.

Large Disk Access Mode

Different operating systems require different representations of drive geometries. If you are using DOS or a DOS-based OS such as Windows, select *DOS*. If you are using UNIX, or Netware, select *Other*.

Local Bus IDE Adapter

Use this item to enable or disable the two PCI local bus IDE channels that are integrated on this motherboard. Select *Disabled, Primary*, *Secondary* or *Both*.

Advanced Chipset Control

This item lets you define some of the operations of the system memory. Press **Enter** to display the Advanced Chipset Control sub-menu.

Graphics Aperture	Use this item to select the size of the aperture for an AGP graphics adapter. Select from *4 MB* to *256 MB*.
Enable Memory Gap	Enable this item to free up a space in memory that is required by an add-in card. Select *Disabled* to disable this item. Select *Conventional* to free a 128k space between 512k and 640k in base memory. Select *Extended* to free a 1 MB space starting from 15 MB.

ECC Config	If the installed memory supports error checking use this item to select the level that is supported. Select *Disabled*, *EC* (Error Correction) *ECC* (Error Correction Code), *ECC Scrub.*
SERR signal condition	Select the ECC error conditions that cause SERR# to be asserted.

Hardware Monitor Inputs

This item displays the inputs from the hardware monitoring. Press **Enter** to display the Hardware Monitor list of inputs. This sub-menu cannot be modified by a user with a user password.

Hardware Monitor Controls

This item sets the threshold temperature and voltages that cause the hardware monitoring to issue alerts and warnings. Press **Enter** to display the Hardware Monitor sub-menu.

Chassis Fan Control	Use this item to turn a chassis cooling fan on or off.
Warning Temperature	Use this item to set a system temperature that will prompt a warning from the system.
Shut Down Temperature	Use this item to set a system temperature that will force the system to shut down.

CPU Clock Control

This item lets you configure the system for the kind of processor that you have installed. Press **Enter** to display the CPU Clock Control sub-menu.

External Frequency Select	Use this item select manual or automatic configuration of the processor. Select *USER SEL* for manual configuration. Select *CPU SEL* for automatic detection and configuration by the system.
Clock Ratio	If you are configuring the processor manually, use this item to set a multiplier. The multiplier that you select times the External Frequency of the processor must equal the rated clock speed of the processor. That is **Clock Ratio x Ext. Freq. = CPU Clock Speed.**
External Frequency	If you are configuring the processor manually, use this item to set the External Frequency (front side system bus) of the processor. For current Slot 1 Pentium-II & Pentium-III processors, the external frequency are always 66/100 MHz.
Spread Spectrum	Use this item to enable or disable Spread Spectrum. Enabling spread spectrum can significantly reduce the electromagnetic interference generated by your system. However, it can cause errors in timing-critical devices such as a SCSI adapter.

Power Supply Control

This item lets you exercise some options regarding the system power supply. Press **Enter** to display the Power Supply Control sub-menu.

Power LED State	Use this item to determine the operation of the power indicator light. Select *Always ON* and the indicator will remain on even in suspend mode. Select *Suspend OFF* and the indicator will turn off in suspend mode.
Suspend LED State	Use this item to determine the operation of the suspend indicator light. Select *Always ON* and the indicator will remain on in suspend mode. Select *Pulse Trigger* and the indicator will blink in suspend mode.
Power Loss Resume	Use this item to determine how the system reacts to a cut in the power supply. Select *Stay Off* and the system stays off. Select *Turn On* and the system turns on. Select *Original State* and the system returns to the state it was in at the time of the power cut.
Keyboard Power On	Use this item to determine if you can power on the system with the keyboard. (Note that you cannot power on the system with a USB keyboard.) Select *Disabled* to turn off keyboard control. Select *WIN98 KB* or *Hot-Key* to enable the keyboard power on. Select *Password* if you want to make a typed password the power on switch.
Mouse Power On	Use this item to determine if you can power on the system with a mouse click*. Select Disabled, Left Button or Right Button*.
Power On By KB/MS Only	Use this item to define that the system can only be turned on with a mouse or keyboard and cannot be turned on with the power switch.

SCSI Control

This item lets you exercise some options regarding the integrated SCSI host adapter. Press **Enter** to display the SCSI Control sub-menu.

On-Board SCSI Port	Use this item to enable or disable the onboard SCSI host adapter.
On-Board SCSI terminator A	Use this item to enable or disable termination of a SCSI chain connected to the SCSI_2A 68-pin connector.
On-Board SCSI terminator B	Use this item to enable or disable termination of a SCSI chain connected to the SCSI_2B 68-pin connector.

Security Screen

The security screen lets you install some security options on your system.

```
                    PhoenixBIOS Setup Utility
    Main   Advanced  Security  Power   Boot   Exit

  ┌─────────────────────────────────────┬──────────────────────────┐
  │                                      │     Item Specific Help   │
  │  Set User Password       [Press Enter]                          │
  │                                      │                          │
  │  Set Supervisor Password [Press Enter] User password controls   │
  │                                      │  access to the system at │
  │  Password on boot:       [Disabled]  │  boot.                   │
  │  Fixed disk boot sector  [Normal]    │                          │
  │                                      │                          │
  │  Diskette access:        Supervisor  │                          │
  │                                      │                          │
  │                                      │                          │
  │                                      │                          │
  │                                      │                          │
  └─────────────────────────────────────┴──────────────────────────┘
  F1  Help  -¯ Select Item -/+  Change Values   F9   Setup Defaults
  Esc Exit  «  Select Menu Enter Execute Command F10  Save and Exit
```

Set User Password

If you have set a Supervisor password, you can then set a lower-level User password. Use the same procedure as described for setting a Supervisor password. With a User password, you can enter the setup utility and change or remove the User password. You cannot enter the setup utility to change or remove the Supervisor password, nor make changes to the fixed Disk Boot Sector or Diskette access fields.

Set Supervisor Password

Use this field to enter a Supervisor password. Press **Enter** to display the *Set Password* window. Type in 7 or fewer keystrokes. Take note if the embedded keypad is active. Press **Enter** and then type in the password again. If you mistype, you have to start again.

Note: To change or delete a password, highlight the password item and press **Enter**. You are required to type in the current password before the Set Password window appears. In the Set Password window type in the new password, or just press Enter to remove a password.

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Password on boot

As default, once you have set a password, you only need a password to access the system setup utility. If you enable this field, you must type in the password every time the system is turned on. If you do not type in the correct password, the computer does not start.

Fixed disk boot sector

When this field is set to Write Protect, it provides some protection against computer viruses which try to infect the boot sector of disks. If you ever need to create a new partition structure on your hard disk drive, you might need to set this value to Normal.

Diskette access

This item is only available when the Supervisor password has been used to enter the setup utility, or if no passwords have been installed. If you set the value of this field to Supervisor, only the Supervisor can use the diskette drive. However, you must enable the Password on boot field, in order to block the User's access to the diskette drive.

Power Screen

The power screen lets you Install power-saving routines on your system.

```
                    PhoenixBIOS Setup Utility
     Main   Advanced Security   Power   Boot   Exit

                                          Item Specific Help

  Power Saving              [Disabled]
  Standby Timeout           [Off}          Maximum Power Savings
  Auto Suspend Timeout      [Off]          conserves the greatest
  WakeOnLan & WakeOnModem    [Off]          Amount of system power.
  Resume On Time            [Off]          Maximum Performance
  Resume Time               [00.00.00]     conserves power but
  Resume Date               [00/00/0000]   allows greatest system
  Power Button Behaviour    [Instant Off]  Performance. To alter
  IDE Drive 0-3 Monitoring  [Disabled]     these settings, choose
  PCI Bus Monitoring        [Disabled]     Customized. To turn off
                                           power management,
                                           choose Disabled.


  F1   Help  _ ¯ Select Item -/+   Change Values    F9   Setup Defaults
  Esc  Exit  «   Select Menu Enter Execute Command   F10  Save and Exit
```

Power Saving

> This item is a master switch for the power saving routines. If you set this item to **Disabled**, all the power-saving routines are turned off. If you set this to **Maximum Power Savings**, the system is installed with short pre-set timeouts that force the system into power-saving modes after short periods of inactivity. If you set this to **Maximum Performance**, the system is installed with long pre-set timeouts that force the system into power-saving modes after longer periods of inactivity. If you set this to **Customized**, you can use the items below to create your own timeouts for the power-saving modes.

Standby Timeout

> If you set the Power Saving item to **Customized**, you can use this item to define a timeout for standby mode. If the system is inactive for the time specified, it will enter the power-saving standby mode.

Auto Suspend Timeout

> If you set the Power Saving item to **Customized**, you can use this item to define a timeout for suspend mode. If the system is inactive for the time specified, it will enter the power-saving suspend mode.

WakeOnLan & WakeOnModem

If you turn this item *ON*, the system will automatically resume from a power-saving mode or a software power down, if it receives an incoming call on a fax/modem, or incoming traffic on a network adapter. You might need to connect the fax/modem or network adapter to a Wake on Modem or Wake on LAN connector on the motherboard for this item to function.

Resume on Time / Resume Time / Resume Date

If you set Resume on Time to *ON,* your system can resume from a power-saving mode or a software power down at a given time on the system realtime clock. Use the items Resume Time and Resume Date to set the time and date of the wake-up alarm.

Power Button Behaviour

This system can undergo a software power down. In a software power down, the system draws very little power, and it can be resumed to full power by a wake up alarm from a fax/modem, a network adapter, or the realtime clock. This item defines how to use the power button to control this feature. If you set this to *Instant Off*, pressing the power button causes a software power down. If you set this to *4 Seconds* you must hold the power button down for 4 seconds to force a software power down. If you press the power button for less than 4 seconds, you get a full shut down and wake-up alarms do not resume the system.
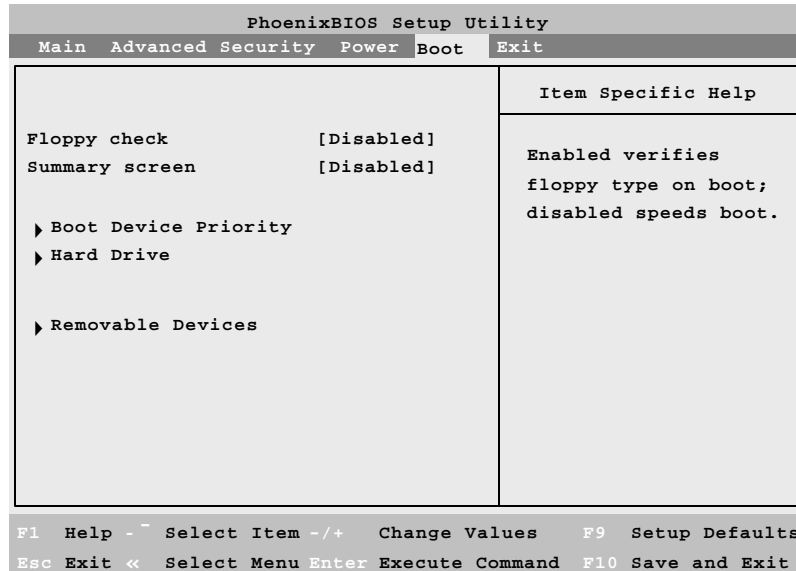
IDE Drive 0-3 Monitoring

If you enable this item, any activity on the IDE drives will reset the power-saving timeouts to zero and prevent the system from entering a power-saving mode.

PCI Bus Monitoring

If you enable this item, any activity on the PCI bus will reset the power-saving timeouts to zero and prevent the system from entering a power-saving mode.

Boot Screen

This item lets you define some of the operations of your system at start-up time.

```
                    PhoenixBIOS Setup Utility
   Main  Advanced Security  Power  Boot   Exit

                                        Item Specific Help

  Floppy check              [Disabled]
  Summary screen            [Disabled]   Enabled verifies
                                         floppy type on boot;
                                         disabled speeds boot.
  ▶ Boot Device Priority
  ▶ Hard Drive


  ▶ Removable Devices








  F1  Help -¯  Select Item -/+  Change Values   F9  Setup Defaults
  Esc Exit «   Select Menu Enter Execute Command F10 Save and Exit
```

Floppy Check

   If this item is enabled, the system will check the architecture of the
   floppy diskette drives at start-up time. You can disable this item and
   shorten the start-up time unless you are using a very old 5.25" diskette
   drive with 360k capacity.

Summary Screen

   If you enable this item the system will display a summary screen each
   time the system is started. The summary screen shows a brief list of the
   important hardware and setup options that are installed on your system.

Boot Device Priority

   This item lets you exercise some options regarding the system boot
   process. Press **Enter** to display the Boot Device Priority sub-menu.

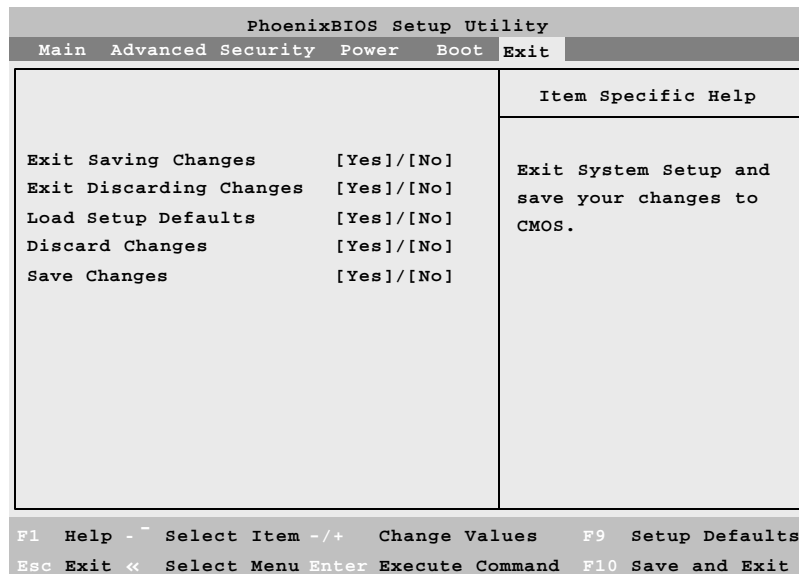|	
1. [Removable Devices]	The system will try to boot an operating system
2. [ATAPI CD-ROM Drive]	from the list of devices shown in the order that
3. [Hard Drive]	they are arranged. To change the order of the
4. [Network Boot]	list, highlight an item, and then use the cursor
	arrow keys to move the item up or down the list.

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Hard Drive

The Hard Drive item shows a list of the hard disk drives that are installed on the system. When the system tries to boot an operating system from a hard disk drive, it will follow the order of this list. To change the order of the list, highlight an item, and then use the cursor arrow keys to move the item up or down the list.

Removable Devices

The Removable Devices item shows a list of the removable media drives that are installed on the system. When the system tries to boot an operating system from a removable media drive, it will follow the order of this list. To change the order of the list, highlight an item, and then use the cursor arrow keys to move the item up or down the list.

Exit Screen

The Exit screen lets you discard or save changes you have made, or install pre-set defaults.

```
                    PhoenixBIOS Setup Utility
   Main   Advanced Security  Power    Boot  Exit

                                            Item Specific Help

 Exit Saving Changes          [Yes]/[No]
 Exit Discarding Changes      [Yes]/[No]    Exit System Setup and
 Load Setup Defaults          [Yes]/[No]    save your changes to
 Discard Changes              [Yes]/[No]    CMOS.
 Save Changes                 [Yes]/[No]




 F1  Help -¯ Select Item -/+  Change Values   F9  Setup Defaults
 Esc Exit « Select Menu Enter Execute Command  F10 Save and Exit
```

Exit Saving Changes

  This option saves any changes you have made to the setup values,
  closes the setup utility, and restarts the system.

Exit Discarding Changes

  This option discards any changes you have made to the setup values,
  closes the setup utility, and restarts the system.

Load Setup Defaults

  This option displays a dialog box to install default values for the entire
  setup utility. Highlight YES and press Enter to install the defaults.
  Highlight NO and press Enter to close the dialog box.

Discard Settings

  This option discards any changes you have made to the setup values.

Save Changes

  This option saves any changes you have made to the setup values.

SOFTWARE: GO!

Introduction

Once you have assembled your system, fine-tuned the setup utility, and installed your computer with an operating system, you can begin installing the support software that ships with this motherboard.

The support software is supplied on a CD-ROM. In the text below, it is assumed that the CD-ROM drive in your system is identified as drive D. Make the necessary changes to the text if your CD-ROM drive is identified as some other drive letter.

The CD-ROM has an installation program that runs automatically when you insert the CD-ROM into your CD-ROM drive. If the program doesn' t run, open the Windows Run command from the Start menu and browse to the file Q-LITY.EXE on the CD-ROM.

Using the Installation Program

The opening screen of the Installation program has six items as follows.

Read Me First

Click on this item to display a README file that introduces all the software that is stored on this CD-ROM. Not all the software can be used with your particular motherboard.

Manual

The manual item has copies of various motherboard User Manuals stored in ****.PDF format. You need Adobe Acrobat reader to display PDF formatted documents. If you do not already have Acrobat Reader, you can install it by clicking on the Acrobat Reader item on the Installation program menu.

Drivers

This item lets you select the drivers that you need to install for the components that are integrated on your motherboard. See the following section for more details on installing the drivers for this motherboard.

Acrobat Reader

This item installs the Adobe Acrobat Reader so that you can read any documents using the ***.PDF format. Click this item and the installation program begins automatically.

Hardware Monitor

This item installs the Hardware monitor software. Chose the following subfolder to install software.

Utility

This item lets you install utility programs that you might want to use to maintain your system, for example, a flash BIOS utility so that you can upgrade the BIOS when necessary. See the following section for notes on using the Utility items.

Notes on Using the Drivers Items

When you click on Drivers from the opening screen of the Installation program, the Drivers menu displays four items as shown below.

■ Audio Item (Optional)

This item installs audio drivers and software. Click on the Audio item and a sub-menu of one audio options is displayed.

Yamaha (Optional)

This folder has drivers and utility software for the Yamaha audio chip that is optional item integrated on this motherboard.

Browse to the sub-folder called GUIDE. Select the installation
procedure required by your system and then follow the instructions
of the installation documents.

> *Note:* *This is optional item. You can ignore this item if your*
> *motherboard does not support Yamaha audio function.*

■ **SCSI Item (This Item is only for Model : XPGX-DS and**
　　　　　　P3BX-DS)

The SCSI item has drivers and software for motherboards with an
onboard SCSI adapter. If you have installed SCSI devices, use the
software in this folder to install the SCSI drivers. Drivers are
available for many different kinds of operating systems.

Note:
When installing Windows NT4.0 from a bootable CD to make the
Symbios controller the primary controller :
Press <F6> immediately while Windows NT4.0 begins to boot
from the CD. As Setup is inspects your computer, the hardware
configuration appears.

* Browse to the sub-folder called HTML. This folder contains
  documents that detail the information for the SCSI adapter.

■ **Intel IDE NT4.0 Item**

This item provides bus mastering Ultra DMA 66 drivers for IDE
devices running on Windows NT 4.0 systems. If you are running
Windows NT 4.0, click on this item to display a README file.
1. Take note of the pathname at the beginning of the file.
2. Read or print the installation instructions given in the file.
3. Exit the Installation program and use Windows Explorer to
   browse to the location of the NT 4.0 UDMA drivers.
4. Carry out the installation instructions given in the README file.

■ **Intel INF Win9x Item**

This item installs upgraded information files for Windows' registry so that the features of the Intel chipset are fully supported. The files add or enhance the following features:

- Core PCI and ISAPNP Services
- AGP Support
- IDE/ATA33/ATA66 Storage Support
- USB Support
- Identification of Intel Chipset Components in Device Manager

Only install this software if your system is running Windows 95/98 and you have at least 32 MB of system memory. When you click on this item, the installation program begins automatically.

Notes on Using the Utility Items

When you click on Utility from the opening screen of the Installation program, the Utility menu displays three items as shown below.

■ **DirectX61 Item**

This item installs DirectX drivers version 6.1 on systems that are running Windows 95 and 98. When you click on this item, the installation program begins automatically.

■ **Phoenix Item (This item is only for Model: XPGX- DS and P3BX-DS)**

This Item has the Phoenix BIOS utility program that lets you overwrite the motherboard BIOS with a new updated BIOS. Read all the README files very carefully before attempting to overwrite a BIOS. If you make any errors. If you erase the current BIOS, and fail to write the new BIOS, you might end up with a computer that won' t start without expert help and a new BIOS chip.

■ AMI Tools Item
(This item is only for Model: P3BX and CPBX)

This item has two utility programs as follows.

Flash
This item displays a README file that explains how you can use the flash BIOS utility to flash an upgraded AMI BIOS to your system. Only use this item if your system is running an AMI BIOS. The README file begins with a pathname to the flash file utility program. Use the utility program and follow the instructions in the README file if you need to flash an upgraded BIOS.

S4 HDD Prepare
If your system is running an operating system that supports ACPI (Advanced Configuration and Power Management Interface) you can prepare a hard disk so that it supports the S4 suspend mode. (In S4 the state of your system is saved to disk in suspend mode, so that when you resume, your system returns to the same state.)

When you click this item a README file appears with a pathname to the utility.