DPX
User's Guide

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Contents

Overview

Thank you for choosing the IWILL DPX high performance Server motherboard. The DPX is a dual Socket-604 motherboard (M/B) based on the ATX form factor. As the latest Intel North Bridge Plumas with South Bridge ICH3 ; PCI-X Bridge P64H2 is built in the M/B, DPX fully supports Intel® Prestonia socket 604 processor at 400 MHz FSB (Front Side Bus) frequency. In memory support, DPX provides six sockets for the system memory. Users just simply choose PC1600 (DDR200), registered with ECC DIMMs as the system memory and the total maximum memory size can be up to 12GB. Flexibility and expandability are always concerned by IWILL, DPX contains three 32bit/33Mhz PCI slots、three 64bit/66MHz PCI -X slots for numerous add-on cards and provides Peer PCI transaction support to increase system performance.

Other features such as onboard SCSI interface、Intel® (82544GC) Gigabit Ethernet controllers 、 onboard Intel® 82550EY 10/100 Mbps LAN port and onboard ATI RageXL video controller with 8MB memory will provide high system capabilities that meet a wide range of demanding Sever applications.

Unpacking

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

- ➤ ➤ One IWILL DPX motherboard
- ➤ ➤ One ATA /33 IDE ribbon cable
- ➤ ➤ One 68-pin (female) SCSI cable
- ➤ ➤ One Floppy ribbon cable
- ➤ ➤ One bag of spare jumpers
- ➤ ➤ One DPX User's Guide
- ➤ ➤ One CD containing drivers and utilities
- ➤ ➤ One Onboard SCSI and LAN User's Guide
- ➤ ➤ Driver Disk(s) for onboard SCSI

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

Features Highlight

CPU

- Support dual Intel® Xeon Socket 604 CPUs at 400 MHz Host Bus Interface

Chipset

- Use the latest Intel® North Bridge Plumas with South Bridge ICH3 chipset in the DPX M/B.
- DPX can fully support the newest technologies: 32bit/33MHz PCI slots,64 bit/66MHz and 64 bit/100MHz PCI-X slots, 100 FSB frequency, USB interface, Peer PCI Transaction and I^2C Bus support and so on.

System Memory Support

- DPX provides six DIMM sockets and supported total system memory size can up to 12GB.
- A user just chooses specific PC1600 (DDR 200), registered with ECC DIMMs and DIMMs support up to 12GB technology that will allow up to 128/256/512/1024 MB per two row (Double sided DIMM) as the system memory.

Expansion Slots

- Contain three 32-bit PCI, three 64-bit PCI-X expansion slots for 64-bit /32-bit 、 66MHz/133MHz add-on card.
- The advantage from 64-bit/66MHz PCI technology is the theoretical bandwidth can be up to 528MB/s.

Onboard VGA Chip

- ATI RageXL video controller with 8MB memory

Onboard SCSI

- Use Dual Adaptec AIC-7899W SCSI channels for bandwidth up to 320MB/s of DPX.

Onboard

- Intel® (82544GC) Gigabit and 10/100

Dual LAN

(82550EY) Ethernet controllers on board.

- Intel® 10/100 (82550EY) fast Ethernet Controller can provide IEEE 802.3/802.3u 10 Base-T and 100 Base-TX compatible network environment. A user can achieve advanced manageability of the Alert on LAN II Specification by using this Intel® 82550 EY chip.

Super Multi-I/O

- NS super I/O (PC87366)
- One serial ports with UART 16550
- One EMP port with ECP/EPP support
- Dual onboard USB connectors; Four extendable USB connectors
- PS/2 mouse and keyboard connectors with Wake-up function

Intelligent Platform Manage Interface

- Base-Board Management Controller (Winbond 83910F)
- Dual ICMB RJ45 connectors
- Three types of ICMB connectors supported
- Hardware monitor of CPU Thermal Protect, CPU/System Fan monitor, Voltage Report, Chassis Intrusion

Floppy Drive

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

Enhanced ACPI

- Fully implements the ACPI standard for FreeBSD /Red Hat /Windows 2000

compatibility, and supports soft off.

System Management

- Prevent from abnormal system down/data loss
- Redundant power supply controller ready
- Alert on LAN ready
- Remote system controller ready

Desktop Management Interface (DMI)

- Supports DMI through BIOS, which allows hardware to communicate within a standard protocol creating a higher level of compatibility.

PC99 Compliant

- The DPX is fully compliant with the Microsoft PC99 specification at both the hardware and BIOS levels.

VRM Support

- Integrated VRM complies to spec 9.1

Dimension

- Extended ATX form factor-12'x13"

About This User Guide

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

IMPORTANT

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

WARNING

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

NOTE

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

TIP

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

Getting Help

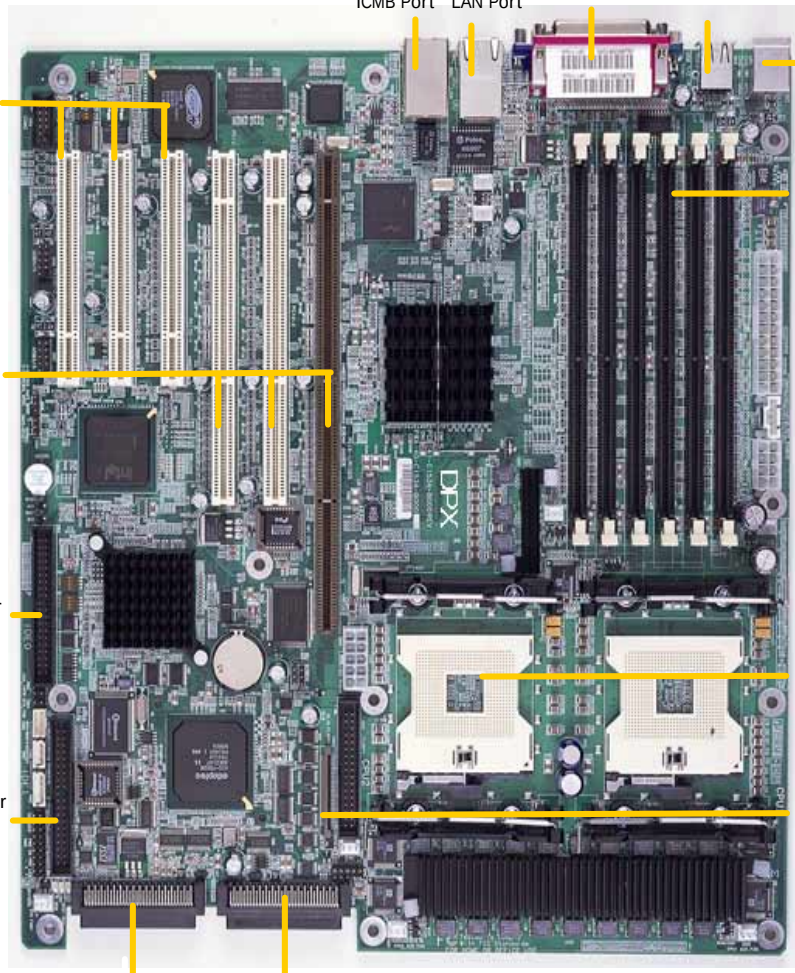
If a problem arises with yours system during installation or OS operating, you should ask your dealer for help first as your system has most likely be configured by them. They always have the best idea and quick response for your symptoms. If your dealer is near to your locations, you should bring your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

1. Select IWILL website at www.iwill.net and navigate to this product page which contain links to product updates such as Jumper settings or BIOS updates.

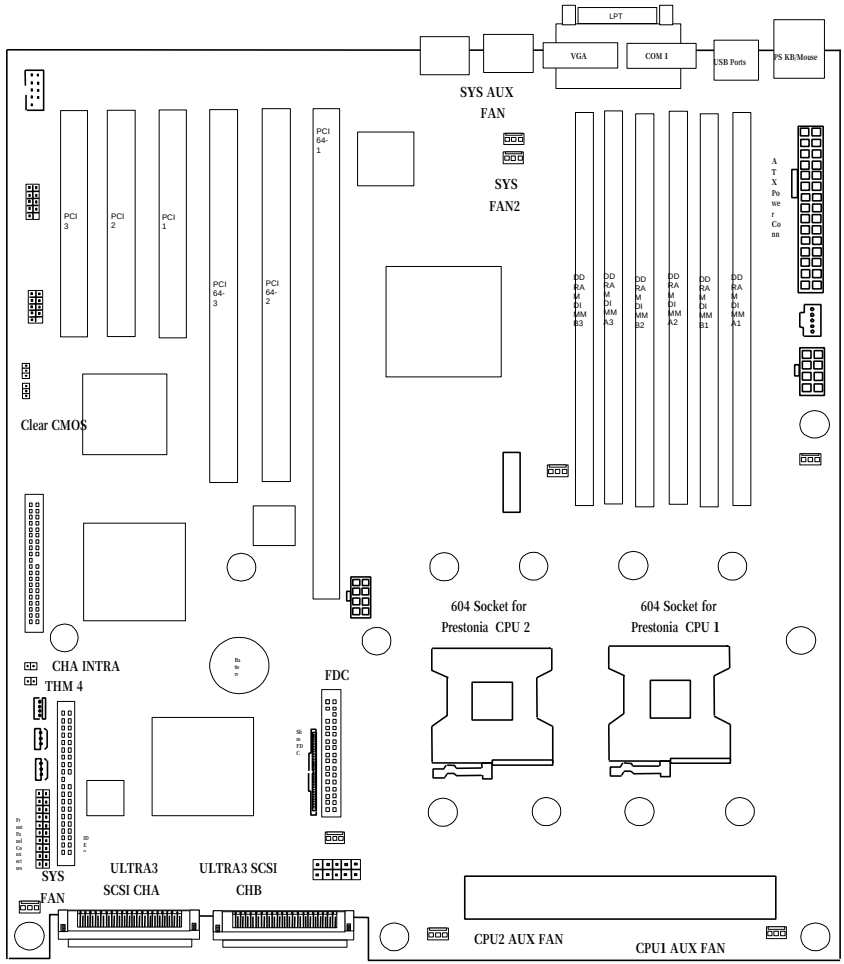
2. FAQ sections on IWILL Website are often helpful since other user's questions are often your own.

3. Email us at: support_te@iwill.net and we will try to answer your questions within 24 hours. Before you email your symptom to support_te@iwill.net, please fill in the symptom report in order to let our engineers solve your problem quickly.

DPX Motherboard (Picture)



DPX Motherboard (Layout)



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Chapter 1

Hardware Installation

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

Installation Procedures

Installation procedures will be broken up into six major parts.

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

Warning

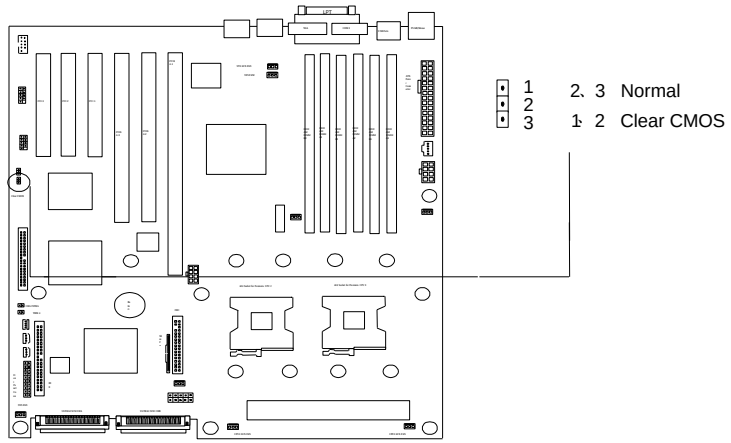
This motherboard contains sensitive electronic components that can be easily damaged by static electricity. Follow the instructions carefully to ensure correct installation and to avoid static damage.

Step 1.

Jumper Setting

1. Clear COMS Header

The onboard button cell battery powers the CMOS RAM. It contains all the BIOS setup information. Normally, it is necessary to keep the jumper connected to pin2 and pin3 (Default) to retain the RTC data as shown below.



DPX clear CMOS jumper

Note

Should you want to clear the RTC data?

(1) Soft off your computer
(2) Short pin1 and pin2 with jumper for few seconds
(3) Connect pin2 and pin3 with jumper
(4) Turn on your computer by pressing the power-on button from front-panel.

(5) Hold down <Delete> during bootup and select <Load Optimal Defaults> or <Load Failsafe Defaults> option in the selection “Exit”. Then re-enter BIOS setup to re-enter user preferences.

Step 2

Install Memory

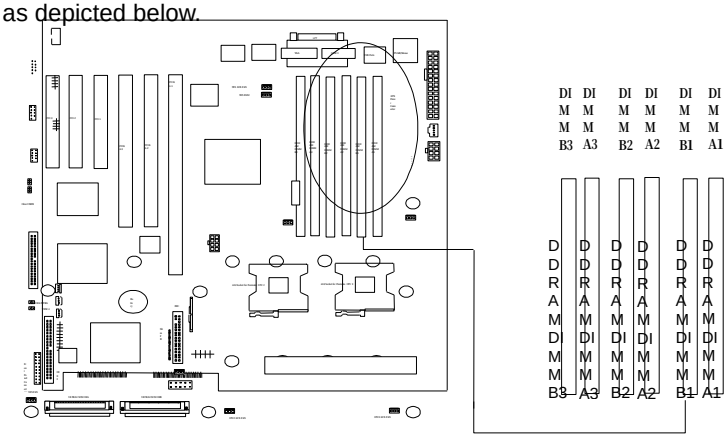
DPX uses Dual Inline Memory Modules (DIMM). Six DIMM sockets are available for 2.5 Volts (power level), PC1600 (DDR200), Double Data Rate Memory (DDR) with 128MB, 256MB, 512MB ,1GB combinations. And the total memory size is between 128MB and 12GB.

IMPORTANT

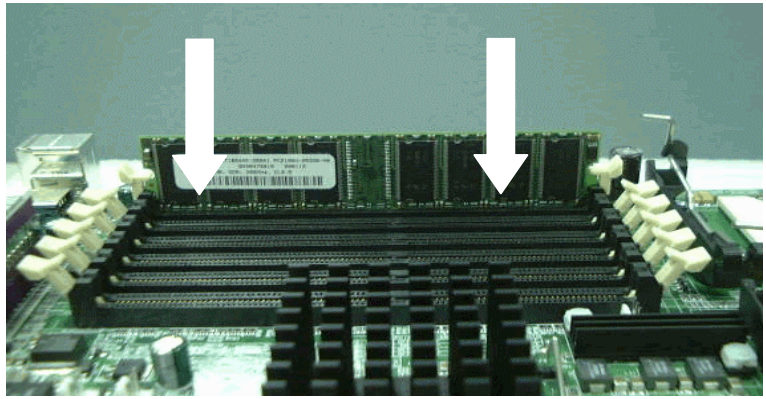
- **As DPX has strict memory type and timing requirements. Hence, before you attend to buy the DDR DIMM (Double Data Rate) and use in the DPX, please consult your local reseller for memory suggestion first.**
- **DPX only support PC1600 (DDR200)-compliant at 100 MHz DDR module.**
- **Since the DPX memory bus is synchronized to front side bus (FSB) speed, it is not allows a user to use PC2100 DIMM with 100 MHz FSB CPU in the DPX. Otherwise system may not able to bootup. When a user uses PC1600 (DDR200) DIMM with 100 FSB CPU, it will result in 100MHz memory speed operation.**

Memory Installation Procedures

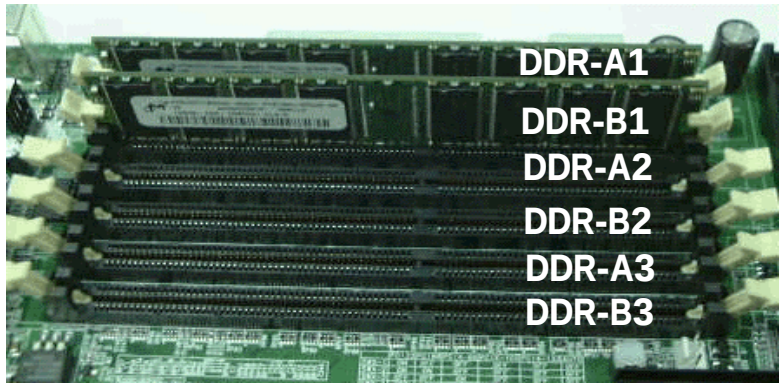
1. Locate the DIMM modules on the DPX.
2. Make sure the DIMM module's pins face down and match the socket's size as depicted below.



DPX memory installation



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



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

IMPORTANT

You have to insert two memory DIMMs in #DDR-A1 and #DDR-B1 or #DDR-A2 and #DDR-B2 or #DDR-A3 and #DDR-B3 DIMMs sockets (slots or connectors) while you install the system at the first time that you want to use it; such as the system will be able to boot up, otherwise, it can not work yet.

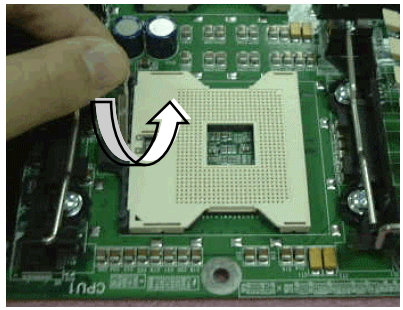
Step 3

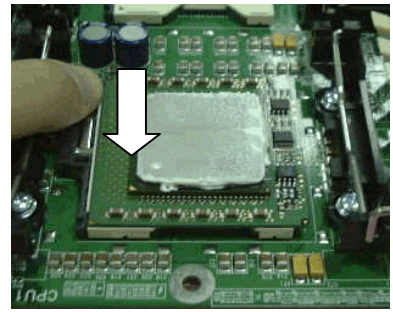
Install CPU

DPX provides Intel® Xeon Socket 604 processor at 400 MHz FSB

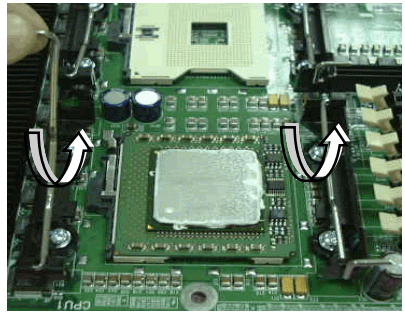
CPU Installation Procedures

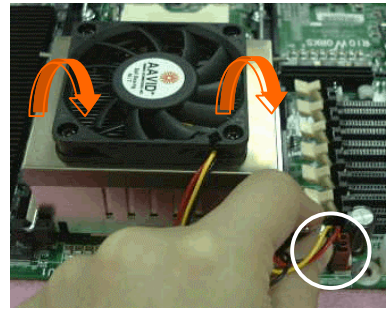
1. Lift up the socket lever and carefully place the Socket 604 CPU with the correct orientation as the figures are shown below



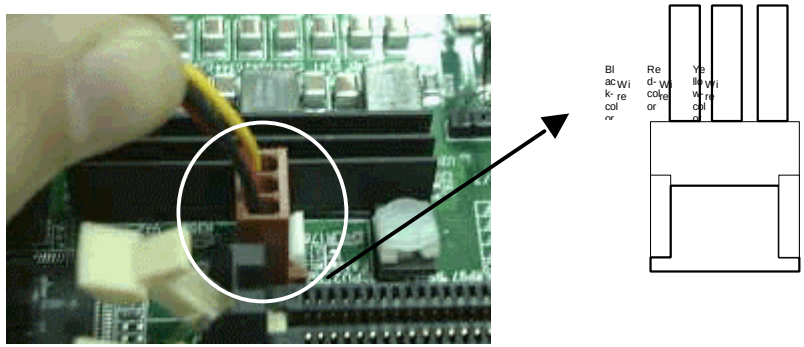


2. Mount the CPU heatsink with exproxy and secure it with the lock as the figures are shown below.
3. Plug the 3-wire fan power core into the connector named CPI1 FAN





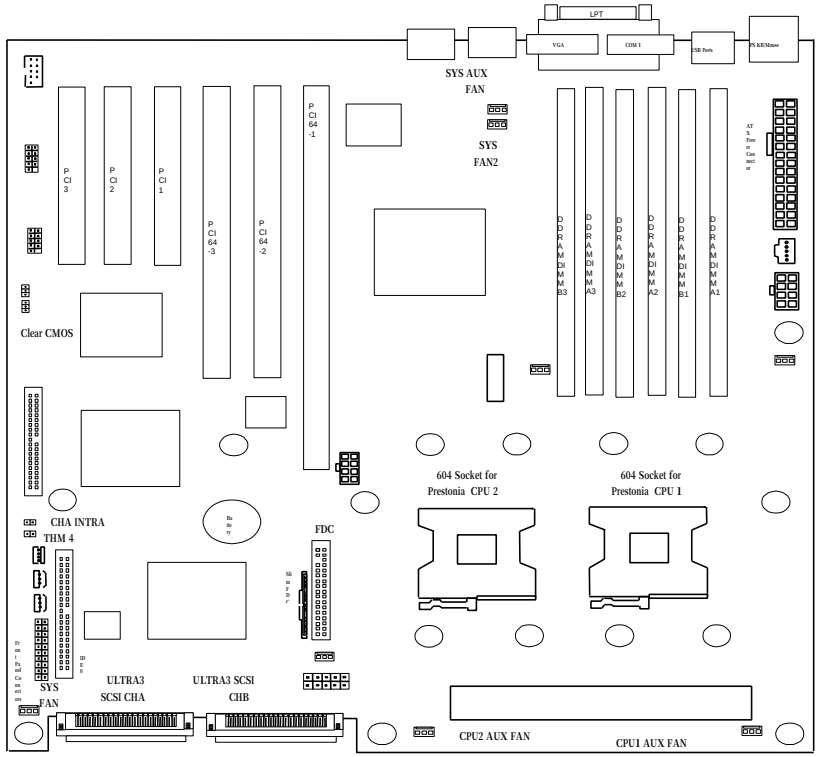
4. Repeat to install the other CPU



Step 4.

Attach Cable to Connectors

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



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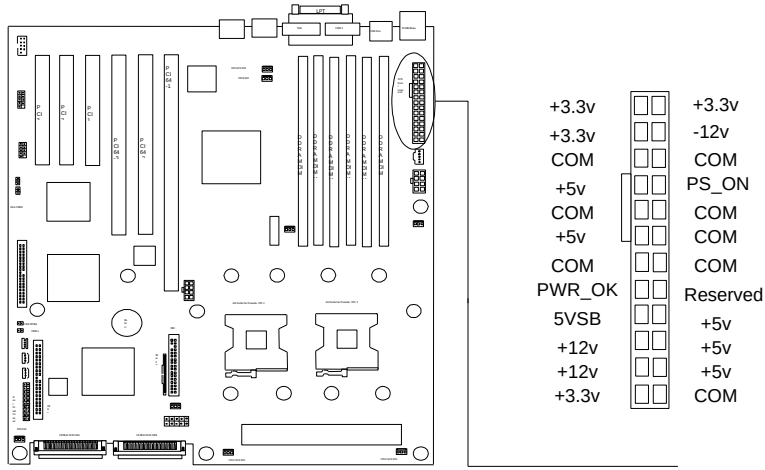
1. ATX Power Supply (24-pin ATX power connectors)

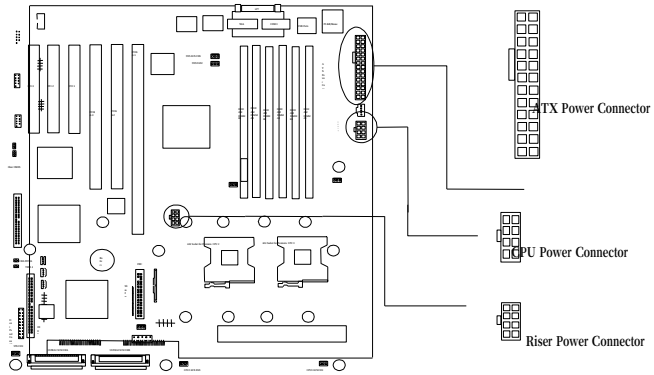
The connectors connect to ATX power supply. Find the proper orientation and push down firmly to make sure that the pins are aligned. For Wake on LAN support, 5-volt Stand-by lead (+5VSB) from ATX power supply must supply at least 720mA.



DPX ATX Power

IMPORTANT

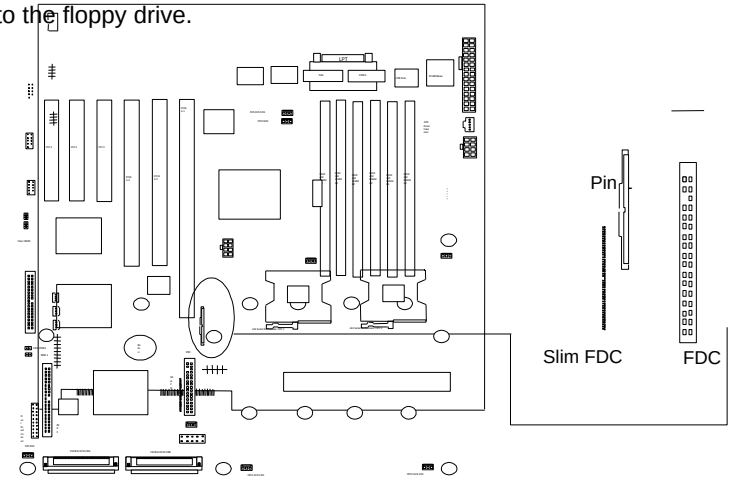
IWILL always recommand our customers to use ATX Power that has more than 300W power capacity and is capatible with Intel ATX 2.03 specification.



DPX Power Connector

2. Floppy Disk Drive Connector (34-pin FLOPPY)

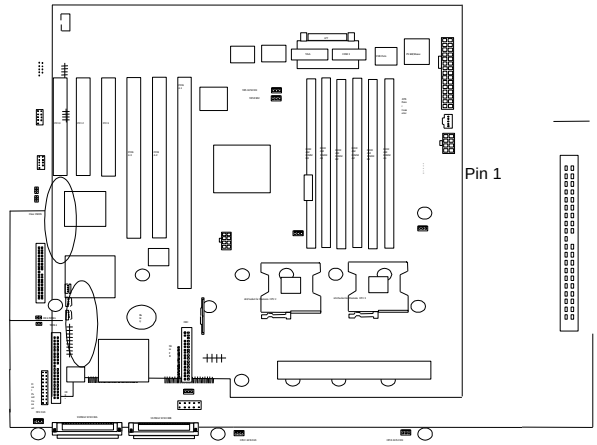
This connector supports the provided floppy disk drive ribbon cable. After connecting the single end to the board, connect the plug on the other end to the floppy drive.



DPX Floppy Drive Connectors

3. Primary IDE connectors (One 40-pin IDE)

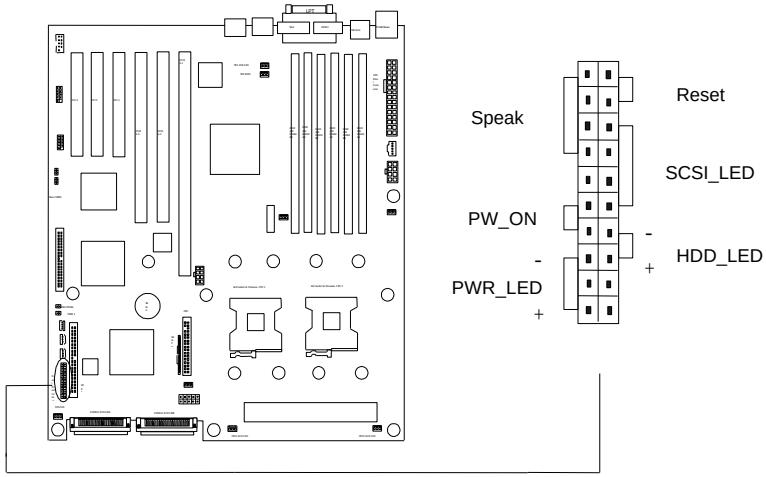
The connector supports the provided 40-wire IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk(s). If you install two hard disks in the same cable, you must configure the second drive to Slave mode by setting its jumper accordingly. Please refer to the documentation of your hard disk for the jumper settings. BIOS now supports IDE HDD or IDE CD-ROM bootup (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged), and it support Ultra DMA 33、DMA 66、DMA 100 device.



DPX IDE Connectors

IMPORTANT

Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. IDE ribbon cable must be less than 46cm (18inches), with the second drive connector no more than 15cm (6 inches) from the first connector.



DPX Front-Panel Connectors

Figure 4-1

Item 4 through 9 are depicted in Figure 4-1 as above.

4. Reset Switch (2-pin RST)

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

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

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

6. Hard Disk Activity LED (2-pin HDD_LED)

This connector supplies power to the cabinet's hard disk or IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

7. Speaker Connector (4-pin SPEAKER)

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

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

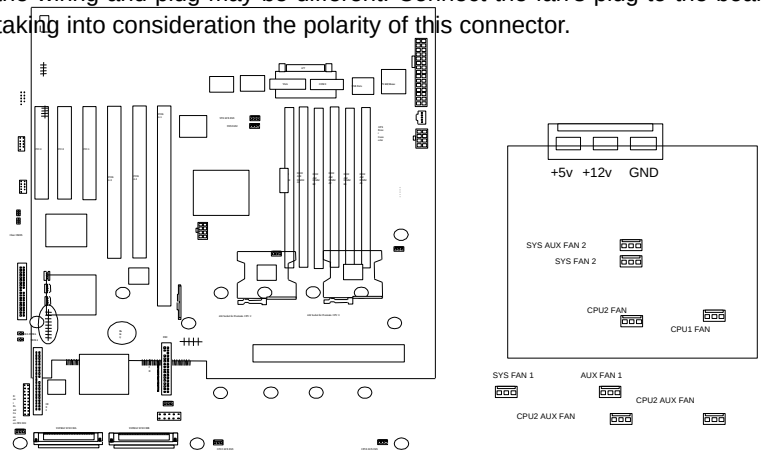
A momentary switch connected to these connector controls the system power. Pressing the button once will switch the system between *ON* and *SLEEP.* The system power LED shows the status of the system's power.

9. System Power LED (3-pin PWR_LED)

This 3-pin connector connects the system power LED, which lights up when the system is powered on and blinks when it is in sleep mode.

10. Front, Back, CPU and Aux Fan Connectors (3-pin FAN)

There are eight 3-pin fan connectors in the DPX M/B. Two fans are used for CPU1 and CPU2; six are for auxiliary power. These connectors support cooling fans of 500mA (6W) or less. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan's plug to the board taking into consideration the polarity of this connector.



DPX Fan Connectors

WARNING

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

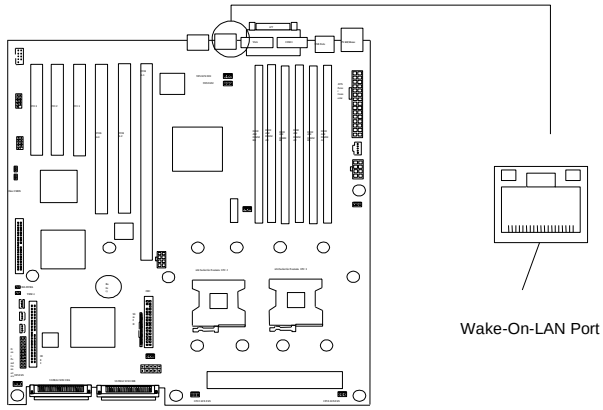
NOTE

✍✍The “Rotation” signal has to be used with fan specially designed with rotation signal.

✍✍Only the fan marked CPU Fan1, CPU2 Fan2 , Front fan and back fan can be monitored by BIOS.

11. Wake-On-LAN

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



DPX Wake-on-LAN Ports

IMPORTANT

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

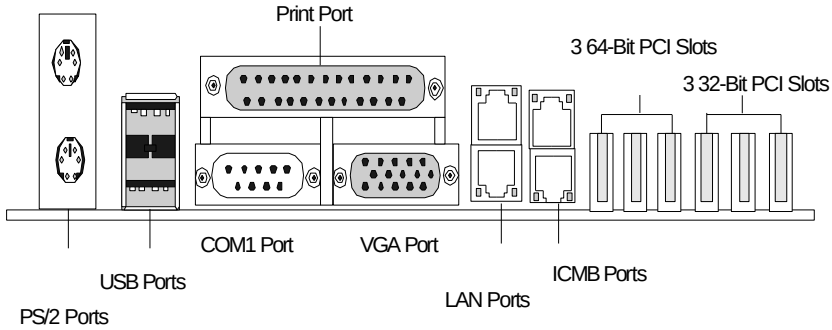


Figure 4-2

Item 12 through 17 are depicted in Figure 4-2 as above.

12. PS/2 Mouse Connector (6-pin Female) The upper port

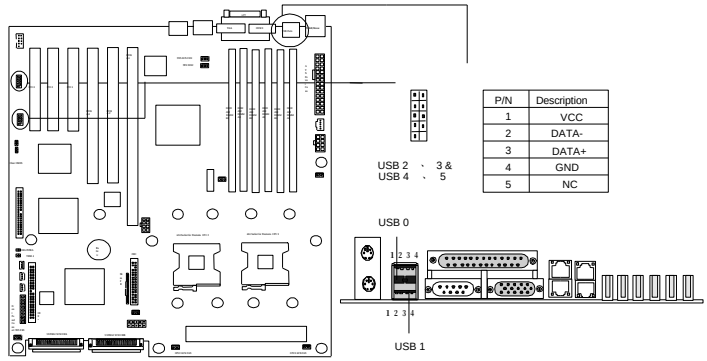
The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards can use IRQ12.

13. PS/2 Keyboard Connector (6-pin Female) The lower port

This connection is for a standard keyboard using a PS/2 plug (mini DIN). This connector will not allow standard AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards.

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

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



P/N	Description
1	VCC
2	DATA-
3	DATA+
4	GND
5	NC

DPX USB Connectors

15. Parallel Printer Connector (25-pin Female)

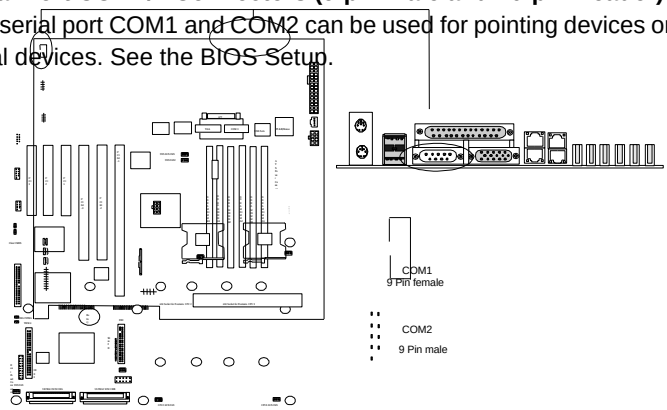
You can enable the parallel port and choose the IRQ through the BIOS Setup.

16. Onboard LAN Port

DPX uses Intel? 82544GC Gigabit and 10/100 82550EY) Ethernet controllers. It consists of both the Media Access controller and 10/100 Mbps Physical Layer (PHY) interface. The RJ45 connector provides both 10Base-T and 100Base-TX connectivity. Please refer to the “Onboard SCSI/LAN User Guide” for further information.

17. Serial Port COM1/2 Connectors (9-pin Male and 10-pin Header)

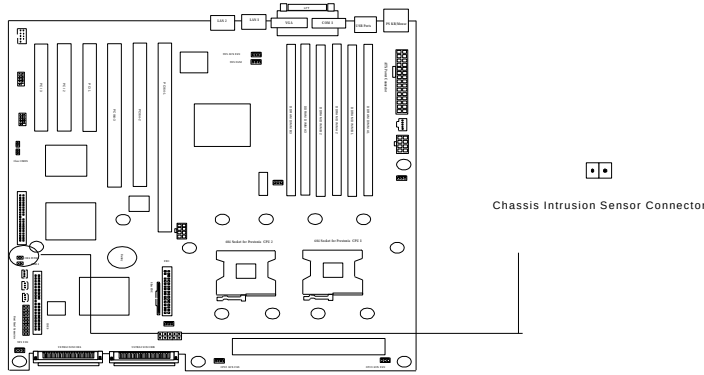
The serial port COM1 and COM2 can be used for pointing devices or other serial devices. See the BIOS Setup.



DPX COM1/COM2 Connectors

18. Chassis Intrusion Sensor Connector (2-pin CHA)

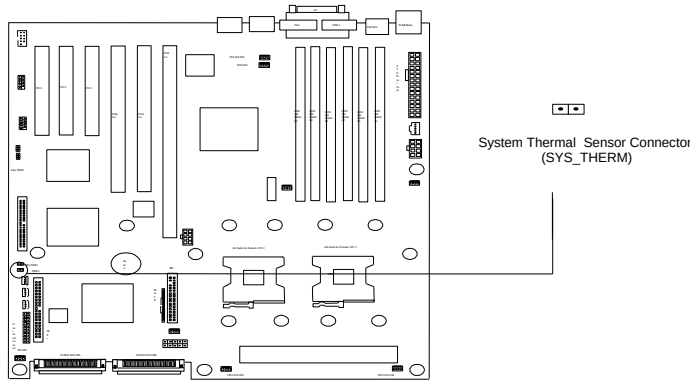
This connector is for a chassis intrusion monitor. The hardware monitor is triggered when chassis' micro-switch is opened. This occurs when the side panel is opened or driver bay door is opened.)



DPX Chassis Intrusion Sensor Connectors

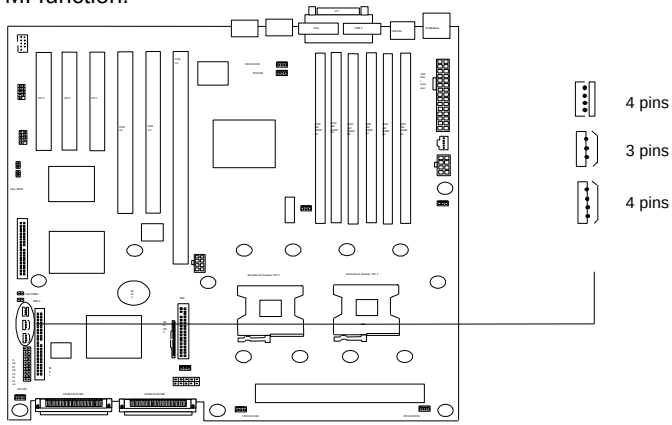
19. System Thermal Sensor Connector (2-pin SYS_THERM)

This two-pin connector provides a user to use the thermal sensor to detect the temperature of the components on motherboard.



20. IPMB Connector For BMC Feature (one three-pins connector and two four-pins connectors)

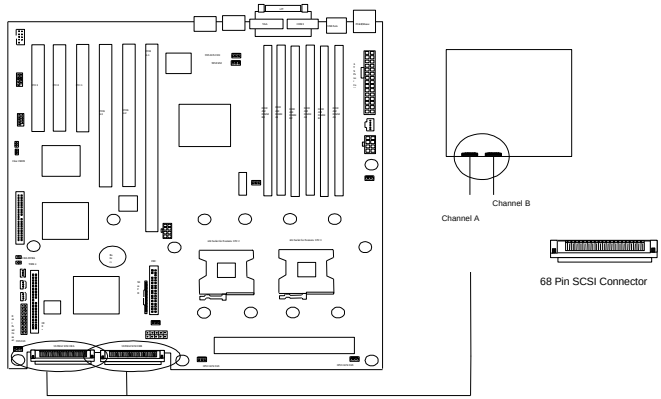
Those connectors are for a server management add-on card featuring with IPMI function.



DPX IPMB Connectors

21. Adaptec 7899W SCSI Channels

DPX use Adaptec 7899W SCSI Chip and provides two types of common internal SCSI connectors and two connectors for SCSI devices. Please refer to the “Onboard SCSI/LAN User Guide” for further information.



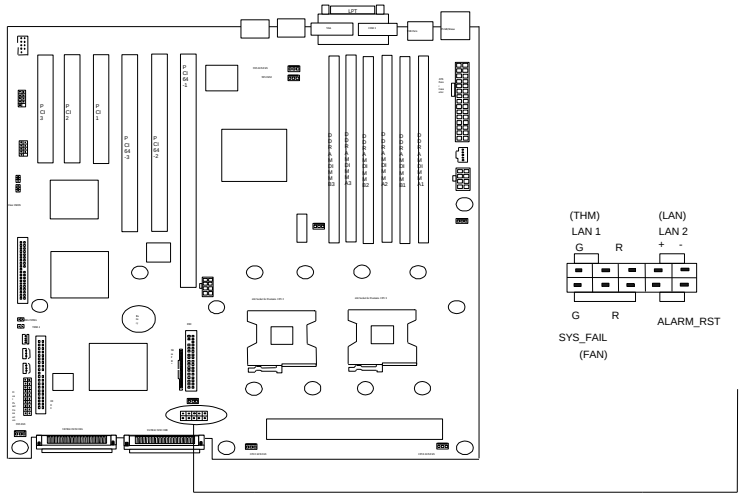
DPX Onboard SCSI Connectors

22. System health Header (Two 2-pin headers and Two 3-pin headers)

DPX provides two 2-pin LED, one 3-pin LED and one 2-pin Alarm reset headers for front-panel system health status. When the CPU 1/CPU2 temperature and /CPU1/CPU2/FRONT_FAN/BACK_FAN speed is over alert threshold or the network link loss, system occur audio alarm signal to alert the network administrator. Please also check the System Health Monitoring Hardware in the BIOS setup for Alarm threshold setup.

NOTE

This header is only for special 1U solution. Users may not found these LED wires in the front panel of their chassis.



DPX System Health LED Header

Header	Description	Normal	Abnormal
ALARM_RST	Reset the Alarm status when abnormal situation is solved.		
SYS_FAIL_LED	Detect if the system fail or normal.	Green	Red
LAN 1 LED / LAN 2 LED	Detect if the Network connections of onboard LAN1/LAN2 are linking.	Flash	

Step 5.

Install Expansion Cards

WARNING

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

1. Expansion Card Installation Procedure

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

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

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

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

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

2. Assigning IRQs for PCI Expansion Cards

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

Step 6.

Powering on Your Computer

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

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

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

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

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

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

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

connections or call your retailer for assistance.

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

Note

✍✍**Powering Off your computer**

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

Chapter 2

BIOS Setup

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

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

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

Starting BIOS Setup

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

1. By pressing the <F2> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

   Press F2 to enter SETUP.

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

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

PRESS F1 TO CONTINUE, F2 TO ENTER SETUP

Using Setup

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

Key	Function
Up Arrow(✍) Key	Move to the previous item
Down Arrow(✍) Key	Move to the next item
Left Arrow(✍) Key	Move to the previous item
Right Arrow(✍) Key	Move to the next item
Esc key	In the Sub-menu: Exit the sub-menu. In the BIOS main category: Quit Without saving changes.
Enter Key	Select the item. A pop-up selection will display on the screen and allows to set the item value.
PgUp Key	Increase the numeric value or make change
PgDn Key	Decrease the numeric value or make change
+ Key	Increase the numeric value or make change
- Key	Decrease the numeric value or make change
F1 Key	General Help on Setup navigation keys. Press <F1> key to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <ESC> key or <F1> key again.
F5 Key	Load Previous value for this page
F6 Key	Load Failsafe Defaults for this page
F7 Key	Load Optimal Defaults this page
F10 key	Save configuration and exit the BIOS Setup Utility

Table 1 Legend Keys

Navigating through the menu bar

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

To display a sub menu

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

In Case of Problems

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

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

Section 1

Main Menu

To start the ***Phoenix*BIOS** Setup utility:

Step 1: Turn on or reboot your system. PhoenixBIOS displays this message:

Step 2: Press <F2> to enter SETUP

Step 3: Pressing <F2> displays the Main Menu, which looks like this:

PhoenixBIOS Setup Utility

Main	Advanced	Security	Power	Boot	Exit

	Item Specific Help
System Time [16:19:20] System Date: [03/02/1994] Legacy Diskette A: [1.44/1.25 MB 3½"] Legacy Diskette B [Not Installed] Primary Master 6449 MB Primary Slave None Secondary Master CD-ROM Secondary Slave None Num lock: [Disabled] Memory Cache [Enabled] System Shadow [Enabled] Video Shadow [Enabled] System Memory 640 KB Extended Memory 31744 KB	<Tab>, <Shift-Tab>, or <Enter> selects field

F1 Help ▸ Select Item -/+ Change Values F9 Setup Defaults
ESC Exit ▸ Select Menu Enter Select ▸Sub-Menu F10 Save and Exit

Step 9: for a description of the fields on this menu.

The Menu Bar

The Menu Bar at the top of the window lists these selections:

Key	Function
<F1> or <Alt-H>	General Help window (See below).
<Esc>	Exit this menu.
► arrow keys	Select a different menu.
? or ? arrow keys	Move cursor up and down.
<Tab> or <Shift-Tab>	Cycle cursor up and down.
<Home> or <End>	Move cursor to top or bottom of window.
<PgUp> or <PgDn>	Move cursor to next or previous page.
<F5> or <->	Select the Previous Value for the field.
<F6> or <+> or <Space>	Select the Next Value for the field.
<F9>	Load the Default Configuration values for this menu.
<F10>	Save and exit.
<Enter>	Execute Command or Select *P* Submenu.
<Alt-R>	Refresh screen.

Use the left and right ► arrow keys to make a selection.
See the section below, "Exiting Setup," for a description on exiting the Main Menu.

The Legend Bar

Use the keys listed in the legend bar on the bottom to make your selections or exit the current menu. The chart on the following page describes the legend keys and their alternates:

Key	Function
<F1> or <Alt-H>	General Help window (See below).
<Esc>	Exit this menu.
► arrow keys	Select a different menu.
? or ? arrow keys	Move cursor up and down.
<Tab> or <Shift-Tab>	Cycle cursor up and down.
<Home> or <End>	Move cursor to top or bottom of window.
<PgUp> or <PgDn>	Move cursor to next or previous page.

<F5> or <->	Select the Previous Value for the field.
<F6> or <+> or <Space>	Select the Next Value for the field.
<F9>	Load the Default Configuration values for this menu.
<F10>	Save and exit.
<Enter>	Execute Command or Select *P* Submenu.
<Alt-R>	Refresh screen.

To select an item, use the arrow keys to move the cursor to the field you want. Then use the plus-and-minus value keys to select a value for that field. The Save Values commands in the Exit Menu save the values currently displayed in all the menus.

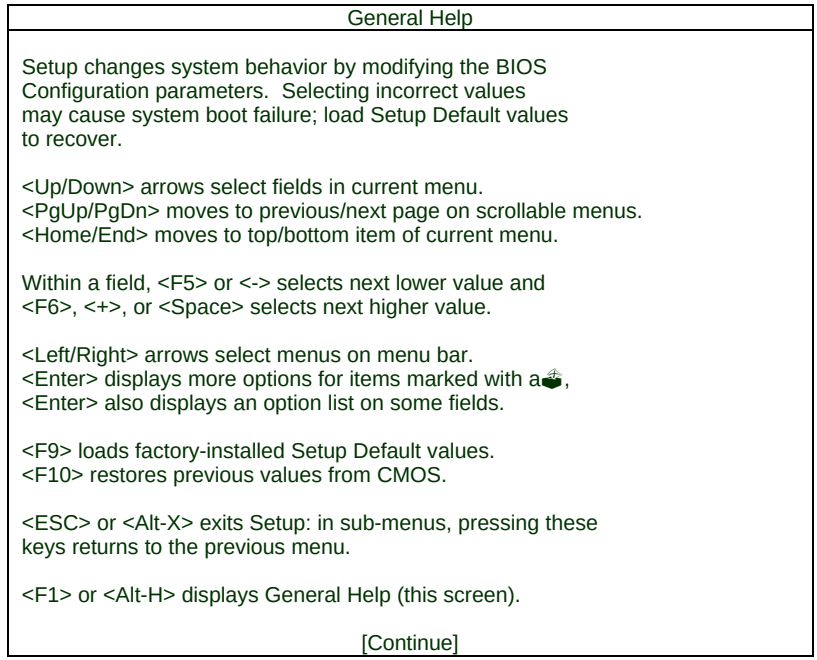
To display a sub menu, use the arrow keys to move the cursor to the sub menu you want. Then press **<Enter>**. A pointer (▶) marks all sub menus.

The Field Help Window

The help window on the right side of each menu displays the help text for the currently selected field. It updates as you move the cursor to each field.

✍✍ The General Help Window

Pressing **<F1>** or **<Alt-H>** on any menu brings up the General Help window that describes the legend keys and their alternates:



The scroll bar on the right of any window indicates that there is more than one page of information in the window. Use **<PgUp>** and **<PgDn>** to display all the pages. Pressing **<Home>** and **<End>** displays the first and last page. Pressing **<Enter>** displays each page and then exits the window.
Press **<Esc>** to exit the current window.

Main Menu Selections

You can make the following selections on the Main Menu itself. Use the sub menus for other selections.

Feature	Options	Description
System Time	HH:MM:SS	Set the system time.
System Date	MM/DD/YYYY	Set the system date.
Diskette 1 Diskette 2	360 kB, 5 ¼" 1.2 MB, 5 ¼" 720 kB, 3 ½" 1.44/1.25 MB, 3 ½" 2.88 MB, 3 ½" Not installed Disabled	Select the type of floppy-disk drive installed in your system. 1.25 MB is a Japanese media format that requires a 3½" 3-Mode Diskette drive.
System Memory	N/A	Displays amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.

You can set the boot sequence of the bootable drives by selecting **Boot Sequence** on the Main Menu or opening the **Boot Menu**.

Master and Slave Sub-Menus

The **Master** and **Slave** sub-menus accessed from the Main Menu control these types of devices:

- Hard-disk drives
- Removable-disk drives such as Zip drives
- CD-ROM drives

*Phoenix*BIOS 4.0 supports up to two **IDE disk adapters**, called **primary** and **secondary** adapters. Each adapter supports one **master drive** and one optional **slave drive** in these possible combinations:

- 1 Master
- 1 Master, 1 Slave
- 2 Masters
- 2 Masters, 1 Slave
- 2 Masters, 2 Slaves

There is one IDE connector for each adapter on your machine, usually labeled "Primary IDE" and "Secondary IDE." There are usually two connectors on each ribbon cable attached to each IDE connector. When you have connected two drives to these connectors, the one on the end of the cable is the Master. If you need to change your drive settings, selecting one of the Master or Slave drives on the Main Menu displays a sub-menu like this:

PhoenixBIOS Setup Utility

Main

Primary Master	Item Specific Help
Type: [**Auto**] Cylinders: [13328] Heads: [15] Sectors/Track: [63] Maximum Capacity: 6449 MB Landing Zone: [762] Write Precomp: [None] Multi Sector Transfer; [16 Sectors] LBA Mode Control: [Enabled] 32-bit I/O: [Enabled] Transfer Mode: [Fast PIO 4] SMART Monitoring [Enabled]	Select the drive type of the fixed disk installed in your system. If type User is selected, Cylinders, Heads, and Sectors can be edited directly. Auto attempts to automatically detect the drive type for drives that comply with ANSI specifications.

F1 Help	► Select Item	-/+ Change Values	F9 Setup Defaults
ESC Exit	► Select Menu	Enter Select ⏎ Sub-Menu	F10 Save and Exit

Use the legend keys listed on the bottom to make your selections and exit to the Main Menu. Use the following chart to configure the hard disk.

Feature	Options	Description
Type	None 1 to 39 User Auto IDE Removable CD-ROM ATAPI Removable	None = Autotyping is not able to supply the drive type or end user has selected None, disabling any drive that may be installed. User = You supply the hard-disk drive information in the following fields. Auto = Autotyping, the drive itself supplies the correct drive information. IDE Removable = Removable read-and-write media (e.g., IDE Zip drive). CD-ROM = Readable CD-ROM drive. ATAPI Removable = Read-and-write media (e.g., LS120, USB Floppy, USB Zip).
Cylinders	1 to 65,536	Number of cylinders.
Heads	1 to 16	Number of read/write heads.
Sectors/Track	1 to 63	Number of sectors per track.
Landing Zone*	1 to 2048	Number of the cylinder specified as the landing zone for the read/write heads.
Write Precomp*	1 to 2048 None	Number of the cylinder at which to change the write timing.
Multi-Sector Transfers	Disabled Standard 2 sectors 4 sectors 8 sectors 16 sectors	Any selection except Disabled determines the number of sectors transferred per block. Standard is 1 sector per block.
LBA Mode Control	Enabled Disabled	Enabling LBA causes Logical Block Addressing to be used in place of Cylinders, Heads, & Sectors.
32-Bit I/O	Enabled Disabled	Enables 32-bit communication between CPU and IDE card. Requires PCI or local bus.
Transfer Mode	Standard Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4	Selects the method for transferring the data between the hard disk and system memory. The Setup menu only lists those options supported by the drive and platform.

Feature	Options	Description
SMART Monitoring	Enabled Disabled	Turn on Self-Monitoring Analysis-Reporting Technology, which monitors condition of the hard drive and reports when a catastrophic IDE failure is about to happen.

* IDE drives do not require setting Landing Zone and Write Precomp.

When you enter Setup, the Main Menu usually displays the results of **Autotyping–** information each drive provides about its own parameters (e.g., cylinders, heads, and sectors)–and how the drives are arranged as Masters or Slaves on your machine.

Some older drives, however, do not use Autotyping and require selecting type User and entering a pre-defined fixed-disk type value or specifying the drive parameters separately with the User type selected. You can find the correct parameters for hard disk drives in the drive manual or written on the casing of the drive itself.

Note

Before changing the contents of this menu, *write them down.* ***Once you have established correct parameters for your drive,*** *write them down and store them in a safe place* ***(e.g., tape them to the disk drive) for use in case these values are lost in CMOS or if autotyping fails. If these hard-disk parameters are not correctly entered in CMOS, you cannot access the data on your drive.***

WARNING

Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9> and re-enter the correct drive parameters.

WARNING

Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

? ? Memory Shadow

Selecting "System Shadow" or "Video Shadow" from the Main Menu displays a menu like the one shown here. The actual features displayed depend on the capabilities of your system's hardware.

PhoenixBIOS Setup Utility **Main**		
Memory Shadow		Item Specific Help
System shadow: Enabled Video shadow: [Enabled] Shadow Option ROM's – C800 - CFFF: [**Disable**] D000 - D7FF: [Disable] D800 - DFFF: [Disable] D800 - DFFF: [Disable] E800 - EFFF: [Disable]		Enables shadowing of Option ROM in this region.
F1 Help ► Select Item -/+ Change Values F9 Setup Defaults ESC Exit ► Select Menu Enter Select Sub-Menu F10 Save and Exit		

Use the legend keys to make your selections and exit to the Main Menu. Use the following chart to configure memory shadowing.

WARNING

Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

Feature	Options	Description
System shadow	N/A	Usually permanently enabled.
Video shadow	Enabled Disabled	Shadows video BIOS and improves performance.
Shadow Option ROM	Enabled Disabled	Shadows option ROM located in the specified segments of memory and can improve performance. WARNING: Some option ROMs do not work properly when shadowed.

Boot Sequence

Selecting "Boot Sequence" on the Main Menu displays the Boot Options menu.

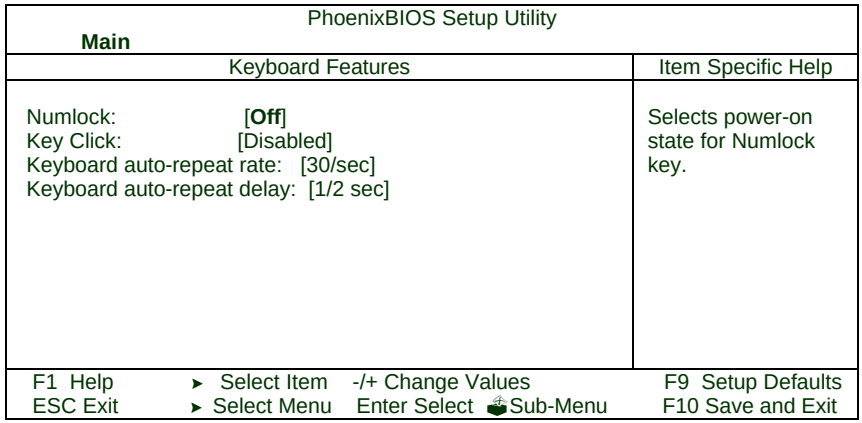
PhoenixBIOS Setup Utility **Main**		
Boot Options		Item Specific Help
Boot sequence: [**Disabled**] SETUP prompt: [Enabled] POST Errors: [Enabled] Floppy check: [Enabled] Summary screen: [Enabled]		Order in which the system searches for a boot disk.
F1 Help ➤ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ➤ Select Menu Enter Select ➤ Sub-Menu F10 Save and Exit		

Use the legend keys to make your selections and exit to the Main Menu.
Use the following chart to select your boot options.

Feature	Options	Description
Boot sequence	A: then C; C: then A: C: only	The BIOS attempts to load the operating system from the disk drives in the sequence selected here. See also the Boot Menu on p. 17.
Setup prompt	Enabled Disabled	Displays "Press <F2> for Setup" during boot up.
POST errors	Enabled Disabled	At boot error, pauses and displays "Press <F1> to resume, <F2> to Setup".
Floppy seek	Enabled Disabled	Seeks diskette drives during boot up. Disabling speeds boot time.
Summary screen	Enabled Disabled	Displays system summary screen during boot up.

Keyboard Features

Selecting "Numlock" on the Main Menu displays the Keyboard Features menu:



Use the legend keys to make your selections and exit to the Main Menu.
Use the following chart to configure the keyboard features:

Feature	Options	Description
Numlock	Auto On Off	On or Off turns NumLock on or off at boot up. Auto turns NumLock on if it finds a numeric keypad.
Key Click	Enabled Disabled	Turns audible key click on.
Keyboard auto-repeat rate	2/sec 6/sec 10/sec 13.3/sec 21.8/sec 26.7/sec 30/sec	Sets the number of times a second to repeat a keystroke when you hold the key down.
Keyboard auto-lag delay	¼ sec ½ sec ¾ sec 1 sec	Sets the delay time after the key is held down before it begins to repeat the keystroke.

Section 2

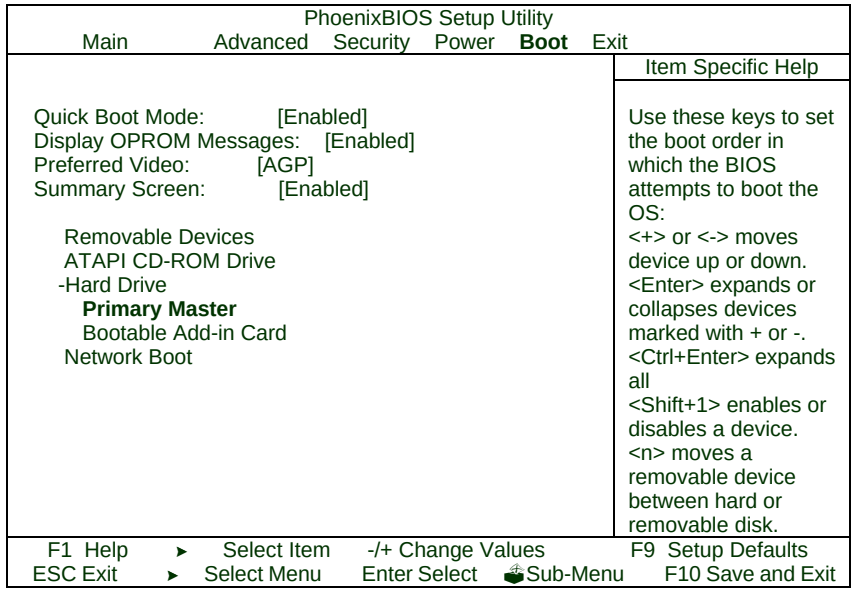
Boot Menu

After you turn on your computer, it will attempt to load the operating system (such as Windows 98) from the device of your choice. If it cannot find the operating system on that device, it will attempt to load it from one or more other devices in the order specified in the Boot Menu. Boot devices (i.e., with access to an operating system) can include: hard drives, floppy drives, CD ROMs, removable devices (e.g., Iomega Zip drives), and network cards.

Note

Specifying any device as a boot device on the Boot Menu requires the availability of an operating system on that device. Most PCs come with an operating system already installed on hard-drive C:\ .

Selecting "Boot" from the Menu Bar displays the Boot menu, which looks like this:



Use this menu to arrange to specify the priority of the devices from which the BIOS will attempt to boot the Operating System. In the example above, the BIOS will attempt first to boot from the CD-ROM drive (the only Removable Device listed). Failing that, it will attempt to boot from the Primary Master hard disk, and so on down the list.

Removable Devices, **Hard Drive**, and **Network Boot** are the generic types of devices on your system from which you can boot an operating system. You may have more than one device of each type. If so, the generic type is marked with a plus or minus sign. Use the <Enter> key to expand or collapse the devices marked with <+> or <->. Press <Ctrl+Enter> to expand all such devices.

Note

Floppy drives are not managed on this menu as part of Removable Devices.

To change a device's priority on the list, first select it with the up-or-down arrows, and move it up or down using the <+> and <-> keys. Pressing <n> moves a device between the Removable Devices and Hard Drive. Pressing <Shift+1> enables or disables a device.

Feature	Options	Description
Boot sequence	A: then C; C: then A: C: only	The BIOS attempts to load the operating system from the disk drives in the sequence selected here. See also the Boot Menu on p. 17.
Setup prompt	Enabled Disabled	Displays "Press <F2> for Setup" during boot up.
POST errors	Enabled Disabled	At boot error, pauses and displays "Press <F1> to resume, <F2> to Setup".
Floppy seek	Enabled Disabled	Seeks diskette drives during boot up. Disabling speeds boot time.
Summary screen	Enabled Disabled	Displays system summary screen during boot up.

Section 3

Advanced Menu

Selecting "Advanced" from menu bar on the Main Menu displays a menu like this:

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

	Item Specific Help
Setting items on this menu to incorrect values may cause your system to malfunction.	
Installed Operating System [**Other**]	Select the operating system installed on you system that you use most often.
Reset Configuration Data: [No]	
☞PCI Configuration	
PS/2 Mouse [Enabled]	
Secured Setup Configurations [No]	Note: An incorrect setting can cause unexpected behavior in some operating systems.
☞Peripheral Configuration	
Large Disk Access Mode: [DOS]	
Local Bus IDE adapter: [Both]	
SMART Device Monitoring: [Enabled]	
☞Advanced Chipset Control	
☞I/O Device Configuration	

F1 Help	► Select Item	-/+ Change Values		F9 Setup Defaults
ESC Exit	► Select Menu	Enter Select	☞Sub-Menu	F10 Save and Exit

Use the legend keys to make your selections and exit to the Main Menu.

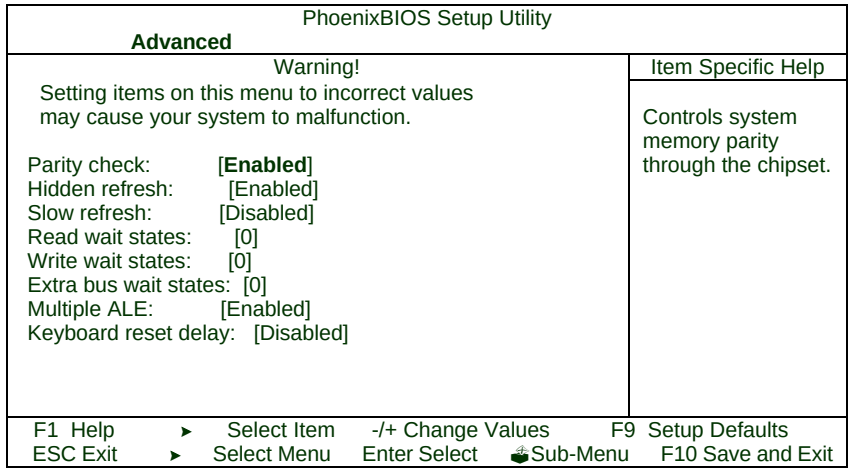
Feature	Options	Description
Installed Operating System	Other Win95 Win98/NT	Select the operating system you use most often.
Reset Configuration Data	Yes No	Yes erases all configuration data in a section of memory for **ESCD** (Extended System Configuration Data) which stores the configuration settings for non-PnP plug-in devices. Select Yes when required to restore the manufacturer's defaults.
PS/2 Mouse	Enabled Disabled Auto OS Controlled	Disabled disables any installed PS/2 mouse, but frees up IRQ 12 for use by another device. Auto lets the BIOS control the mouse. OS Controlled lets the operating system control the mouse.
Secured Setup Configurations	Yes No	Yes prevents the Operating System from overriding selections you have made in Setup.
Large Disk Access Mode	DOS Other	Select DOS if you have DOS. Select Other if you have another operating system such as UNIX. A large disk is one that has more than 1024 cylinders, more than 16 heads, or more than 63 tracks per sector.
SMART	Enabled Disabled	Enabled installs SMART (Self-Monitoring Analysis-Reporting Technology), which issues a warning if an IDE failure is imminent.

WARNING

Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

✍✍ Advanced Chipset Control (No PCI)

In a system with no PCI, selecting "Advanced Chipset Control" from menu bar on the advanced menu displays a menu like this:



The chipset consists of one or more integrated circuits that act as an interface between the CPU and much of the system's hardware. You can use this menu to change the values in the chipset registers and optimize your system's performance. .

Use the legend keys to make your selections, display the sub menus, and exit to the Main Menu.

Use the following chart in configuring the chipset:

Feature	Options	Description
Parity check	Enabled Disabled	Controls system memory parity checking.
Hidden refresh	Enabled Disabled	Refreshes regular memory without holding up the CPU.
Slow Refresh	Enabled Disabled	Slows memory refresh by a factor of 4.

Read wait states	0 to n	Sets the number of wait states added to reads from system memory. Chipset dependent.
Write wait states	0 to n	Sets the number of wait states added to writes to system memory. Chipset dependent.
Extra bus wait states	0 to n	Sets the number of wait states added to accesses of the AT bus. Chipset dependent.
Multiple ALE	Enabled Disabled	Determines whether to use single or multiple ALEs during cycle conversion.
Keyboard reset delay	Enabled Disabled	Enabled adds a 2 microsecond delay before resetting the system.

NOTE

The contents of this menu depend on the chipset installed on your motherboard, and chipsets vary widely. Consult your dealer or the chipset manual before changing the items on this menu. Incorrect settings can cause your system to malfunction.

Advanced Chipset Control Menu (PCI BIOS)

If the system has a PCI chipset, selecting "Advanced Chipset Control" from the Advanced menu displays a menu like this:

PhoenixBIOS Setup Utility **Advanced**	
Advanced Chipset Control	Item Specific Help
Hidden Refresh: [Disabled] Code Read Page Mode: [Disabled] Write Page Mode: [Disabled] CPU to PCI Write Buffers: [**Disabled**] PCI to DRAM Write Buffers: [Disabled] CPU to DRAM Write Buffers: [Disabled] Snoop Ahead: [Disabled] PCI Memory Burst Cycles: [Disabled]	Enables CPU to PCI write buffers, which allow data to be temporarily stored in buffers before writing the data.
F1 Help ► Select Item -/+ Change Values F9 Setup Defaults ESC Exit ► Select Menu Enter Select Sub-Menu F10 Save and Exit	

The chipset is one or more integrated circuits that act as an interface between the CPU and the system's hardware. It manages such things as memory access, buses, and caching. You can use this menu to optimize the performance of your computer.

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart in configuring the chipset:

Feature	Options	Description
Hidden Refresh	Disabled Enabled	Refreshes regular memory without holding up the CPU
Code Read Page Mode	Disabled Enabled	Improves performance when code contains mainly sequential instructions.
Write Page Mode	Disabled Enabled	Improves performance when data is written sequentially.
CPU to PCI Write Buffers	Disabled Enabled	Stores CPU data in buffers before writing to PCI.
PCI to DRAM Write Buffers	Disabled Enabled	Stores PCI data in buffers before writing to DRAM.
CPU to DRAM Write Buffers	Disabled Enabled	Stores CPU data in buffers before writing to DRAM.

Snoop Ahead	Disabled Enabled	Improves PCI bus master access to DRAM.
PCI Memory Burst Cycles	Disabled Enabled	Enables PCI memory burst write cycles.

 ***NOTE***

The contents of this menu depend on the chipset installed on your motherboard, and chipsets vary widely. Consult your dealer or the computer manual before changing the items on this menu. Incorrect settings can cause your system to malfunction.

? ? PCI Devices Menu

If the system has a PCI bus, selecting "PCI Devices" from menu bar on the Advanced menu displays a menu like this:

PhoenixBIOS Setup Utility **Advanced**		
PCI Devices		Item Specific Help
PCI Device Slot #1:		Initialize device expansion ROM
Option ROM Scan:	[**Enabled**]	
Enable Master:	[Disabled]	
Latency Timer:	[0040h]	
PCI Device Slot #2:		
Option ROM Scan:	[Disabled]	
Enable Master:	[Disabled]	
Latency Timer:	[0000]	
PCI Device Slot #3		
Option ROM Scan:	[Disabled]	
Enable Master:	[Disabled]	
Latency Timer:	[0000]	
Shared PCI IRQs:	[Auto]	
F1 Help ► Select Item -/+ Change Values F9 Setup Defaults ESC Exit ► Select Menu Enter Select Sub-Menu F10 Save and Exit		

PCI Devices are devices equipped for operation with a **PCI** (Peripheral Component Interconnect) **bus**, a standardized Plug-and-Play hardware communication system that connects the CPU with other devices. Use this menu to configure the PCI devices installed on your system.

Use the legend keys to make your selections and exit to the Advanced menu. Use the following chart in configuring the PCI devices:

Feature	Options	Description
PCI Device Slots 1-n:		
Option ROM Scan	Disabled Enabled	Initialize device expansion ROM.
Enable Master	Disabled Enabled	Enables selected device as a PCI bus master. Not every device can function as a master. Check your device documentation.
Latency Timer	0000h to 0280h	Bus master clock rate. A high-priority, high-throughput device may benefit from a greater value.
Shared PCI IRQs	Share One IRQ Share Two IRQs Share Three IRQs Auto	Share ***n*** IRQs: Forces PCI devices to use at most ***n*** IRQs. Auto: Minimizes PCI IRQ Sharing.

NOTE

The contents of this menu depend on the devices installed on your system. Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the System Defaults (F9).

? ? I/O Device Configuration Menu

The CPU communicates with external devices such as printers through devices called **Input/Output (I/O) ports** such as serial and parallel ports. These I/O devices require the use of system resources such as I/O addresses and interrupt lines. If these devices are Plug and Play, either the BIOS can allocate the devices during POST, or the operating system can do it. If the I/O devices are not Plug and Play, they may require manually setting them in Setup.

On some systems, the **chipset** manages the communication devices. Other systems have, instead, a separate **I/O chip** on the motherboard for configuring and managing these devices.

Many systems allow you to control the configuration settings for the I/O ports. Select "I/O Device Configuration" on the Advanced Menu to display this menu and specify how you want to configure these I/O Devices:

PhoenixBIOS Setup Utility **Advanced**	
I/O Device Configuration	Item Specific Help
Serial Port A: [Enabled] Base I/O address/IRQ [3F8/IRQ4] Parallel Port: [Enable] Mode: [Bi-directional] Base I/O address [378] Interrupt [IRQ5] Diskette Controller [Enabled] Base I/O address: [Primary] Legacy USB Support: [**Enabled**]	Enable support for Legacy Universal Serial Bus
F1 Help ► Select Item -/+ Change Values F9 Setup Defaults ESC Exit ► Select Menu Enter Select Sub-Menu F10 Save and Exit	

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart to configure the Input/Output settings:

Feature	Options	Description
Serial port A: Serial port B:	Disabled Enabled Auto OS Controlled	Disabled turns off the port. Enabled requires you to enter the base Input/Output address and the Interrupt number on the next line. Auto makes the BIOS configure the port automatically during POST. OS Controlled lets the PnP Operating System (such as Windows 95) configure the port after POST.
Base I/O Address/IRQ	3F8, IRQ 4 2F8, IRQ 3	If you select Enabled, choose one of these combinations.
Parallel Port:	Disabled Enabled Auto OS Controlled	Disabled turns off the port. Enabled requires you to enter the base Input/Output address and the Interrupt number below. Auto makes the BIOS auto configure the port during POST. OS Controlled lets the PnP Operating System (such as Windows 95) configure the port after POST.
Mode	Output only Bi-directional	Output only is standard one-way protocol for a parallel device. Bi-directional uses two-way protocol of an Extended Capabilities Port (ECP).
Base I/O Address	378 278 3BC	If you select Enabled for the Parallel Port, choose one of these I/O addresses.
Interrupts	IRQ5 IRQ7	If you select Enabled for the Parallel Port, choose one of these interrupt options.
Diskette Controller	Disabled Enabled	Enables the on-board legacy diskette controller. Disabled turns off all legacy diskette drives.
Base I/O Address	Primary Secondary	If you select Enabled for the Diskette Controller, choose Primary for one diskette drive installed or Secondary for two diskette drives installed.
Legacy USB Support	Enabled Disabled	Enables support for legacy USB bus.

Use this menu to specify how the I/O (Input and Output) ports are configured:

- Manually by you.
- Automatically by the BIOS during POST (See "ROM BIOS Functions" on page)
- Automatically by a PnP Operating System such as Windows 95 after the Operating System boots.

Warning

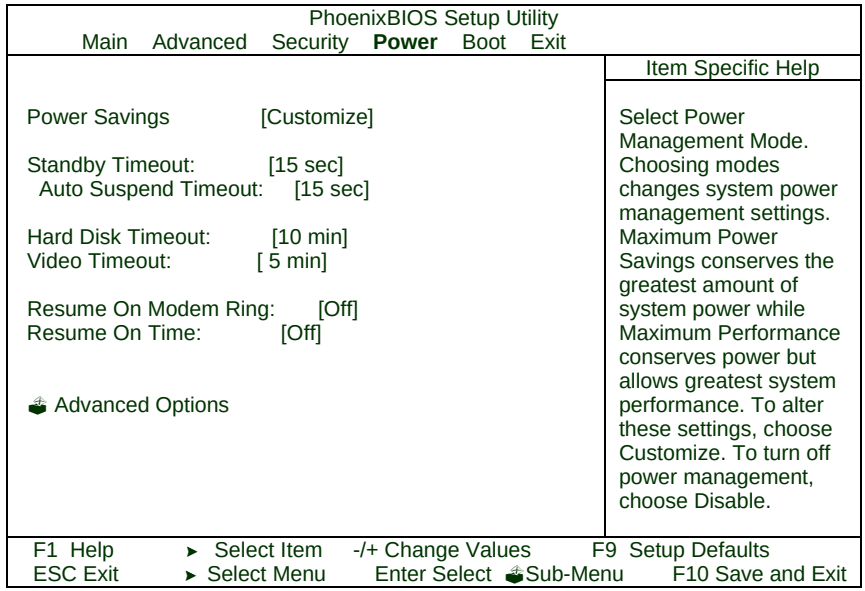
If you choose the same I/O address or Interrupt for more than one port, the menu displays an asterisk (*) at the conflicting settings. It also displays this message at the bottom of the menu:

*Indicates a DMA, Interrupt, I/O, or memory resource conflict with another device. Resolve the conflict by selecting another settings for the devices.

Section 4

The Power Menu

Selecting "Power" from the menu bar displays a menu like this:



Use this menu to specify your settings for Power Management. Remember that the options available depend upon the hardware installed in your system. Those shown here are from a typical system.

A power-management system reduces the amount of energy used after specified periods of inactivity. The Setup menu pictured here supports a **Full On** state, a **Standby** state with partial power reduction, and a **Suspend** state with full power reduction.

Use the Advanced Options on this menu to specify whether or not the activity of interrupts can terminate a Standby or Suspend state and restore Full On. Do

not change these settings without knowing which devices use the interrupts. Use the legend keys to make your selections and exit to the Main Menu. Use the following chart in making your selections:

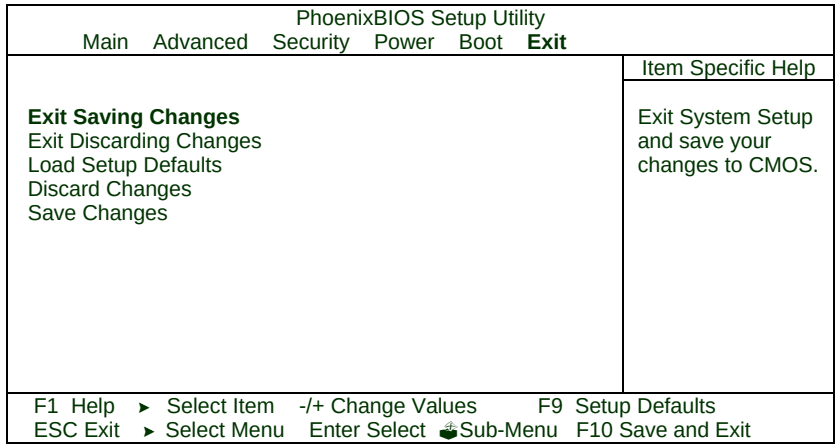
Feature	Options	Description
Power Management Mode	Disabled Customize Maximum Power Savings Maximum Performance	Maximum options: pre-defined values. Select Customize to make your own selections from the following fields. Disabled turns off all power management.
Standby Timeout	Off 1 min 2 min 4 min 6 min 8 min 12 min 16 min	Inactivity period required to put system in Standby (partial power shutdown).
Auto Suspend Timeout	Disabled 5 min 10 min 15 min 20 min 30 min 40 min 60 min	Inactivity period required after Standby to Suspend (maximum power shutdown).
Hard Disk Timeout	Disabled 1 min 2 min 4 min 8 min 12 min 16 min	Inactivity period of hard disk required before standby (motor off).
Video Timeout	Disabled 10 sec 15 sec 20 sec 30 sec 45 sec 1 min to 15 min	Set inactivity period required before independently turning off monitor. Disabled turns CRT off in Standby.

Resume On Modem Ring	Off On	Wakes up system when an incoming call is detected on the modem.
Resume On Time	Off On	Wakes up system at predetermined time.
IRQ0...IRQ15 SMI NMI	Disabled Enabled	Enabling interrupt causes it to restore Full On during Standby or Suspend. SMI = System Management Interrupt. NMI = Non-Maskable Interrupt.

Section 5

The Exit Menu

Selecting "Exit" from the menu bar displays this menu:



The following sections describe each of the options on this menu. Note that <Esc> does not exit this menu. You must select one of the items from the menu or menu bar to exit.

✍✍ Saving Values

After making your selections on the Setup menus, always select either "Saving Values" or "Save Changes." Both procedures store the selections displayed in the menus in **CMOS** (short for "battery-backed CMOS RAM") a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS.

After you save your selections, the program displays this message:

```
Values have been saved to CMOS!
Press <space> to continue
```

If you attempt to exit without saving, the program asks if you want to save before exiting.
During boot up, *Phoenix*BIOS attempts to load the values saved in CMOS. If those values cause the system boot to fail, reboot and press **<F2>** to enter Setup. In Setup, you can get the Default Values (as described below) or try to change the selections that caused the boot to fail.

✍✍ Exit Discarding Changes

Use this option to exit Setup without storing in CMOS any new selections you may have made. The selections previously in effect remain in effect.

✍✍ Load Setup Defaults

To display the default values for all the Setup menus, select "Load Setup Defaults" from the Main Menu. The program displays this message:

ROM Default values have been loaded!
Press <space> to continue

If, during boot up, the BIOS program detects a problem in the integrity of values stored in CMOS, it displays these messages:

System CMOS checksum bad - run SETUP

Press <F1> to resume, <F2> to Setup

The CMOS values have been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS.
Press **<F1>** to resume the boot or **<F2>** to run Setup with the ROM default values already loaded into the menus. You can make other changes before saving the values to CMOS.

✍✍ Discard Changes

If, during a Setup Session, you change your mind about changes you have made and have not yet saved the values to CMOS, you can restore the values you previously saved to CMOS.
Selecting “Discard Changes” on the Exit menu updates all the selections and displays this message:

CMOS values have been loaded!
Press <space> to continue

Save Changes

Selecting “Save Changes” saves all the selections without exiting Setup. You can return to the other menus if you want to review and change your selections.

Chapter 3.1

Boot Utility

Phoenix Boot Utilities are:

- Phoenix QuietBoot™
- Phoenix MultiBoot™

Phoenix QuietBoot displays a graphic illustration rather than the traditional POST messages while keeping you informed of diagnostic problems.
Phoenix MultiBoot is a boot screen that displays a selection of boot devices from which you can boot your operating system.

Phoenix QuietBoot

Right after you turn on or reset the computer, **Phoenix QuietBoot** displays the QuietBoot Screen, a graphic illustration created by the computer manufacturer instead of the text-based POST screen, which displays a number of PC diagnostic messages.
To exit the QuietBoot screen and run Setup, display the MultiBoot menu, or simply display the PC diagnostic messages, you can simply press one of the hot keys described below.
The QuietBoot Screen stays up until just before the operating system loads unless:

1. Press <Esc> to display the POST screen.
2. Press <F2> to enter Setup.
3. POST issues an error message.
4. The BIOS or an option ROM requests keyboard input.

The following explains each of these situations.

✍✍ Press <ESC>

Pressing <Esc> switches to the POST screen and takes one of two actions:

1. If MultiBoot is installed, the boot process continues with the POST screen until the end of POST, and then displays the **Boot First Menu**, text-based with these options:
   A: Load the operating system from a boot device of your choice.
   B: Enter Setup.
   C: Exit the Boot First Menu (with <Esc>) and load the operating system from the boot devices in the order specified in Setup.
2. If MultiBoot is not installed, the boot process continues as usual.

✍✍ Press <F2>

Pressing <F2> at any time during POST switches to the POST screen (if not already displayed) and enters Setup.

✍✍ POST Error

Whenever POST detects a non-fatal error, QuietBoot switches to the POST screen and displays the errors. It then displays this message:

Press <F1> to resume, <F2> to Setup

Press <F1> to continue with the boot. Press <F2> if you want to correct the error in Setup.

✍✍ Keyboard Input Request

If the BIOS or an **Option ROM** (add-on card) requests keyboard input, QuietBoot switches over to the POST screen and the Option ROM displays prompts for entering the information. POST continues from there with the regular POST screen.

Phoenix MultiBoot

Phoenix MultiBoot expands your boot options by letting you choose your boot

device, which could be a hard disk, floppy disk, or CD ROM. You can select your boot device in Setup, or you can choose a different device each time you boot during POST by selecting your boot device in **The Boot First Menu**.

MultiBoot consists of:

?? The Setup Boot Menu

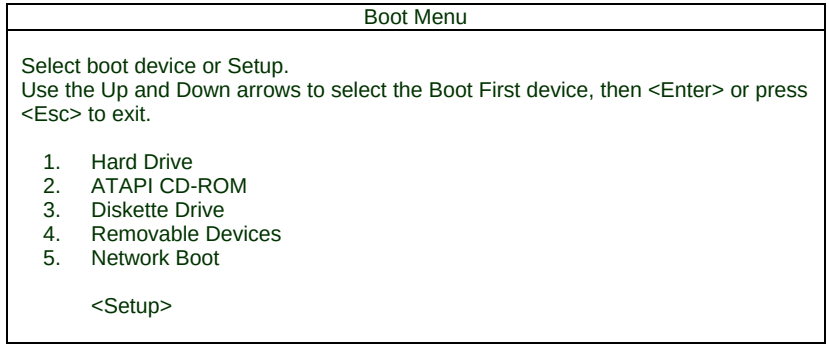
?? The Boot First Menu

See the Setup Boot menu on p. 17. The following describes the Boot First Menu.

✍✍ The Boot First Menu

Display the Boot First Menu by pressing <Esc> during POST. In response, the BIOS first display the message, "Entering Boot Menu..." and then displays the Boot Menu at the end of POST. Use the menu to select any of these options:

1. Override the existing boot sequence (for this boot only) by selecting another boot device. If the specified device does not load the operating system, the BIOS reverts to the previous boot sequence.
2. Enter Setup.
3. Press <Esc> to continue with the existing boot sequence.



If there is more than one bootable hard drive, the first one in the Setup Boot menu is the one represented here.

Chapter 3 .2

BIOS Flash Upgrade Utility

Phoenix Phlash gives you the ability to update your BIOS from a floppy disk without having to install a new ROM BIOS chip.
Phoenix Phlash is a utility for "flashing" (copying) a BIOS to the Flash ROM installed on your computer from a floppy disk. A Flash ROM is a Read-Only Memory chip that you can write to use a special method called "flashing." Use Phoenix Phlash for the following tasks:

Update the current BIOS with a new version.

Restore BIOS when it has become corrupted.

Installation

Phoenix Phlash is shipped on a floppy disk with your computer as a compressed file called CRISDISK.ZIP that contains the following files:

CRISDISK.BAT	Executable file for creating the Crisis Recovery Diskette.
PHLASH.EXE	Programs the flash ROM.
PHLASH16.EXE	Performs platform-dependent functions.
BIOS.ROM	Actual BIOS image to be programmed into flash ROM.
MINIDOS.SYS	Allows the system to boot in Crisis Recovery Mode.
MAKEBOOT.EXE	Creates the custom boot sector on the Crisis Recovery Diskette.

To install Phoenix Phlash on your hard disk, follow this simple procedure:

1. Insert the distribution diskette into drive A:
2. Unzip the contents of CRISDISK.ZIP into a local directory, presumably C:\PHLASH.
3. Store the distribution diskette in a safe place.

Create the Crisis Recovery Diskette

If the OEM or dealer from whom you purchased your system has not provided you with one, then you should create a **Crisis Recovery Diskette** before you use the Phlash utility. If you are unable to boot your system and successfully load the Operating System, the BIOS may have been corrupted, in which case you will have to use the Crisis Recovery Diskette to reboot your system. There are several methods that you can use to create the Crisis Recovery Diskette. Below is one recommended procedure.

1. Be sure you have successfully installed the Phlash Utility onto your hard disk.
2. Insert a clean diskette into drive A: or B:
3. From the local directory, enter the following: CRISDISK [drive]:
   where [*drive*] is the letter of the drive into which you inserted the diskette. For help, type ***/?*** or ***/h***. CRISDISK.BAT formats the diskette, then copies MINIDOS.SYS, VGABIOS.EXE (if available), PHLASH.EXE, PLATFORM.BIN and BIOS.ROM to the diskette, and creates the required custom boot sector.
4. Write protect and label the Crisis Recovery Diskette.

NOTE

You can only supply a volume label after the Crisis Recovery Diskette has been formatted and the necessary files copied because MINIDOS.SYS must occupy the first directory entry for the diskette to boot properly.

Updating the Crisis Recovery Diskette

If the BIOS image (BIOS.ROM) changes due to an update or bug fix, you can easily update the Crisis Recovery Diskette. Simply copy the new BIOS.ROM image onto the Crisis Recovery Diskette. No further action is necessary.

Executing Phoenix Phlash

You can run Phoenix Phlash in one of two modes:

1. Command Line Mode
2. Crisis Recovery Mode

WARNING

For your own protection, be sure your have a Crisis Recovery Diskette ready to use before excuting Phlash.

Command Line Mode

Use this mode to update or replace your current BIOS. To execute Phlash in this mode, move to the directory into which you have installed Phoenix Phlash and type the following:

Phlash

Phoenix Phlash will automatically update or replace the current BIOS with the one which your OEM or dealer supplies you.
Phlash may fail if your system is using memory managers, in which case the utility displays the following message:

Cannot flash when memory managers are present.

If you see this message after you execute Phlash, you must disable the memory manager on your system. To do so, follow the instructions in the following sections.

Disabling Memory Managers

To avoid failure when flashing, you must disable the memory managers that load from CONFIG.SYS and AUTOEXEC.BAT. There are two recommended procedures for disabling the memory managers. One consists of pressing the <F5> key (only if you are using DOS 5.0 or above), and the other requires the

creation of a boot diskette.

DOS 5.0 (or later version)

For DOS 5.0 and later, follow the two steps below to disable any memory managers on your system. If you are not using at least DOS 5.0, then you must create a boot diskette to bypass any memory managers (See Create a Boot Diskette, below).

1. Boot DOS 5.0 or later version. (In Windows 95, at the boot option screen, choose Option 8, "Boot to a previous version of DOS.")
2. When DOS displays the “Starting MS-DOS” message, press <F5>.

After you press <F5>, DOS bypasses the CONFIG.SYS and AUTOEXEC.BAT files, and therefore does not load any memory managers.
You can now execute Phlash.

Create a Boot Diskette

To bypass memory managers in DOS versions previous to 5.0, follow this recommended procedure:

1. Insert a diskette into your A: drive.
2. Enter the following from the command line: Format A: /S
3. Reboot your system from the A: drive.

Your system will now boot without loading the memory managers, and you can then execute Phlash.

Crisis Recovery Mode

You should only have to operate Phoenix Phlash in this mode only if your system does not boot the operating system when you turn on or reset your computer. In these cases, the BIOS on the Flash ROM have probably been corrupted. Boot your system with the Crisis Recovery Diskette taking these steps:

1. Insert the Crisis Recovery diskette (which your dealer supplied or one that you should have created from the instructions above) into drive A:\.

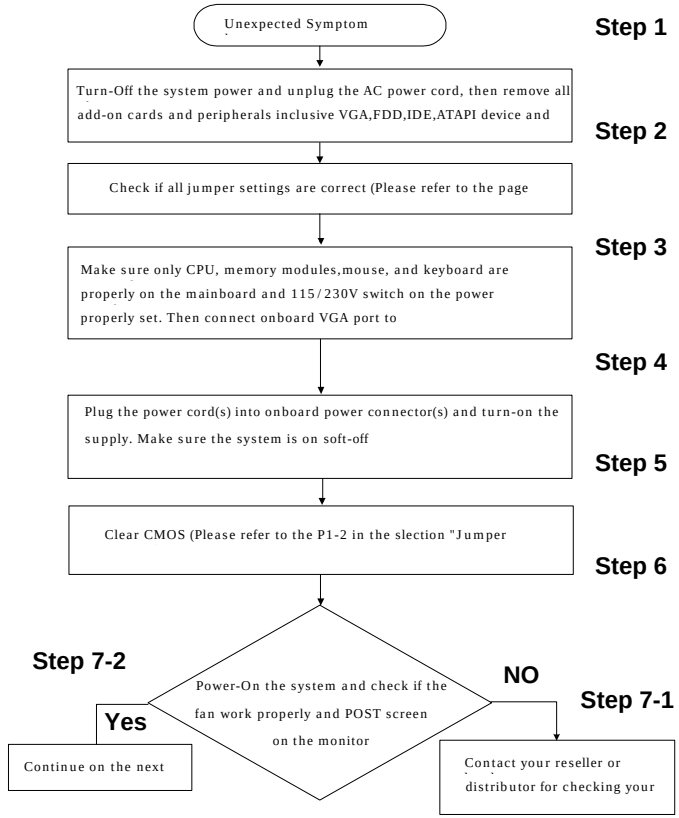
2. Reset your computer, power off-on, or press <Ctrl> <Alt> <Del> to reboot the system.
3. When your system reboots, Phoenix Phlash will restore the BIOS from the diskette and successfully boot the operating system.

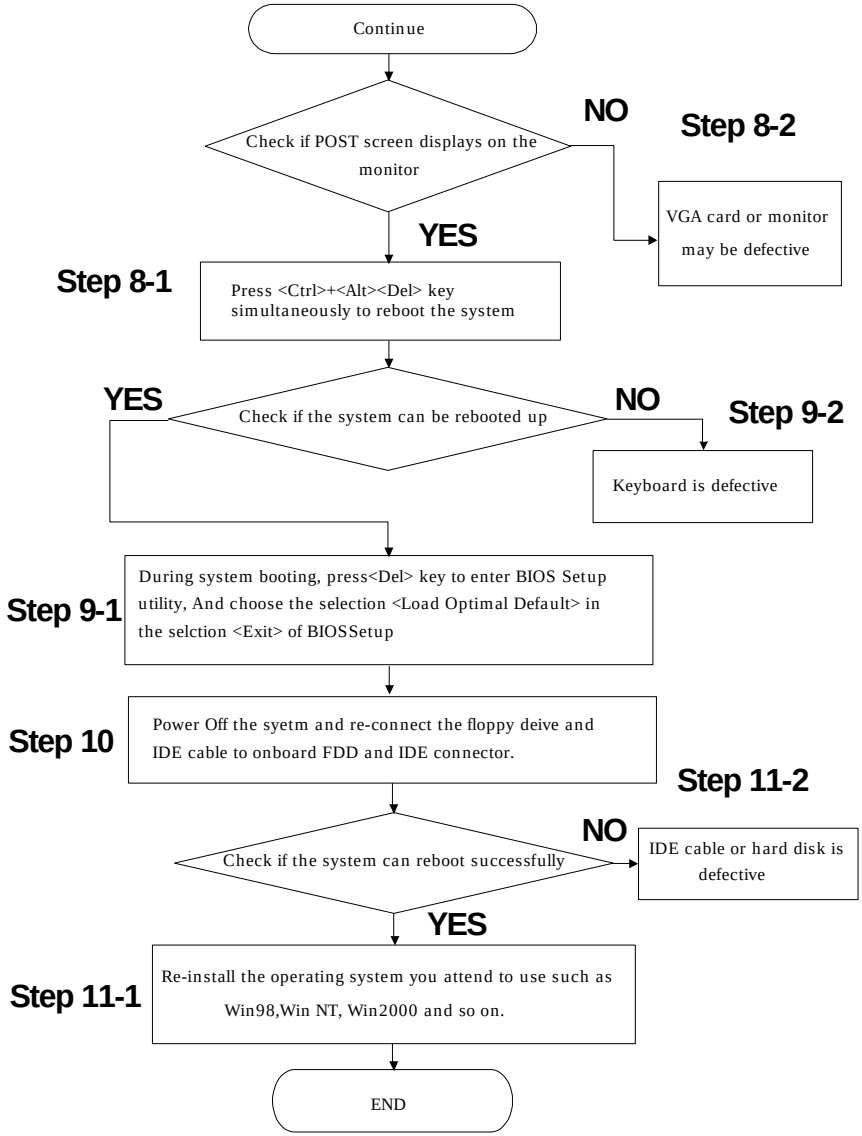
Appendix A

Troubleshooting

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

Toubleshooting Procedure




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

WARNING

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

2.Symptom checking List

Symptom	Check point
No Power (FAN is not rotating)	1. Make sure no short circuit exist between the motherboard and chassis 2. Check if all jumpers are set to the default position. 3. Check if the 115V/230V switch on the power supply is properly set. 4. Check the CPU is inserted properly into CPU socket. 5. Check the power cord of the CPU fan is plugged into the correct position. 6. Turn the power switch on and off to test the system 7. Check the power of the battery on the M/B. In general, the battery voltage is around 3VDC.
Can power on the system (FAN is rotating), but no screen display.	1. Remove all the add-on card exclusive CPU, and memory modules. 2. Check if the memory is Registered ECC DIMM. Please check your reseller for qualified memory available vendor list (AVL). 3. Check if all jumpers are set to the default position. 4. Clear CMOS by using CLRTC jumper. Please refer to the page 1-2 in this manual. 5. Check if the connection is connected properly between onboard VGA port and monitor. 6. Check if using 400 FSB CPU and

	PC1600(DDR200) Memory module in the DPX. If yes, Chang CPU to 400 FSB or memory to PC1600 (DDR200). 7. Use speaker to determine the symptom.
Memory Error	1. Check if the memory DIMM module is inserted into DIMM socket properly. 2. Check if different speed memory modules are mixed and used in the DPX. Verify the BIOS setup is configuration for the fastest speed of RAM used. IWILL recommend always use the same speed RAM in the system. 3. Make sure your memory module(s) is compliant with PC1600 (DDR200) Spec in the DPX.

Appendix B

Symptom Report Form

M/B	**DPX**	**Serial Number**		**BIOS version**		
CPU 1						
CPU 2						
DIMM 0						
	Size	MB	Brand		Component Model	
DIMM 1						
	Size	MB	Brand		Component Model	
DIMM 2						
	Size	MB	Brand		Component Model	
DIMM 3						
	Size	MB	Brand		Component Model	
FDD						
PCI64-1						
PCI64-2						
PCI64-3						
PCI 1						
PCI 2						
PCI 3						
Onboard IDE 0	Master					
	Slave					

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