



**ALR
FLYER SD
User's Manual**

Preface

The *ALR FLYER SD User's Manual* provides the information necessary to install and operate your new ISA computer manufactured by Advanced Logic Research (ALR), Inc. This manual assumes you have some experience using IBM-type personal computers and are familiar with DOS operating systems. You should know how to use a standard keyboard and understand special keys (for example, CTRL). You can obtain background in these areas by referring to your DOS system documentation. Additional information is available in various instruction manuals for IBM PC, AT, and PS / 2 systems, which you can purchase at your local bookstore.

Chapters and Appendixes in This Manual

The ALR FLYER SD User's Manual is organized as follows:

**Chapter 1,
Introduction**

Describes the major components of the FLYER SD.

**Chapter 2,
Getting Started**

Lists the FLYER SD components, describes how to properly unpack the system, hook up the monitor and keyboard, initialize the system with a DOS diskette and power-up the system.

**Chapter 3,
Standard System
Configuration**

Describes the FLYER SD system board, hard and floppy disk controllers, system board memory configuration and VGA controller.

**Appendix A,
Error Messages**

Lists nonfatal error messages, their cause, and the appropriate remedy. This appendix also lists fatal system board beep codes.

**Appendix B,
Hard Disk Drive
Characteristics**

Lists the 49 drive types supported by the FLYER SD systems.

**Appendix C,
Standard System
Specifications**

Lists the specifications for a standard FLYER SD system.

**Appendix D, Advanced
BIOS Setup**

Provides complete instructions for changing your system configuration through the BIOS Setup and additional information on the “Flash” EPROM.

Conventions Used in This Manual

The following conventions are used in this manual:

<Enter>

<Enter> means you press the Enter (↵) key. After you type a keyboard entry, you press the Enter key to execute the entry.

Keyboard entries

Boldface type is used to denote commands you are to type from the keyboard. In the following example, at the system prompt (A>), the system asks you if you want to proceed. Your keyboard entry in this example is **Y** (yes), which is shown in boldface type.

A>PROCEED WITH FORMAT (Y/N)? **Y** <Enter>

Keyboard sequence

When two or more keys must be pressed to perform a function, they appear hyphenated, and must be pressed in the order shown. All keys must remain pressed until the keyboard sequence is complete. For example:

CTRL-C

means you hold down the CTRL key first, then press the C key (CTRL-C generally ends a program).

CTRL-ALT-DEL

means you hold down the CTRL key first, then hold down the ALT key and press the DEL key. The CTRL-ALT-DEL sequence re-boots the system.

Typing commands

You can enter commands in either upper- or lower-case letters. For example, typing:

A>**dir** <Enter>

is the same as typing:

A>**DIR** <Enter>

Variables

Words within < > angle brackets are variables and can have many names.

Options

Words or items within [] square brackets are options. Enter only one of the options from the list provided.

Icon Definitions

Throughout this manual, you will see a number of icons flagging certain portions of text. The following explains the meaning of each icon.



NOTE: A helpful tip intended to assist you in setting up and operating your system.



IMPORTANT: Information of greater importance than a note, but ignoring this won't cause any damage.



CAUTION: Ignoring this icon could result in damage to your hardware.

Acronyms and Abbreviations

BIOS	Basic Input/Output System
CMOS	Complementary Metal-Oxide Semiconductor
DOS	Disk Operating System
DRAM	Dynamic Random Access Memory
EPROM	Erasable Programmable Read-Only Memory
I/O	Input/Output
ISA	Industry Standard Architecture
LAN	Local Area Network
P/N	Part Number
POST	Power-On Self Test
RAM	Random Access Memory
RMA	Return Material Authorization
ROM	Read-Only Memory

Chapter 1

Introduction

In this modern world there are few things worse than watching your high-tech toys become obsolete. If you don't know what I mean then Just think about that stereo of yours, or your VCR, camera, or your neat digital wristwatch. ALR has relieved some of this 'techno anxiety' by offering systems that can be upgraded to compete with these advanced times.

The ALR FLYER SD, "A Smart Decision", utilizes ALR's modular design, allowing powerful upgrade paths to ensure longevity. This essential feature makes the FLYER SD ideal for use as either a network node, business or home computer.

The FLYER SD contains a 25-MHz 486SX CPU, and is equipped with a 3.5-inch 1.44-MB floppy disk drive. And with its embedded VGA controller and optional 80- or 170-MB hard disk drive, setting up your system couldn't be simpler. Just connect power and plug in your monitor. As your needs increase, you can easily upgrade your CPU to create a more powerful system. You can even add an additional hard drive, floppy drive, tape backup or CD-ROM.

Components and Performance Features

Figure 1-2 shows the major components inside the FLYER SD. The following subsections describe some of these major components.

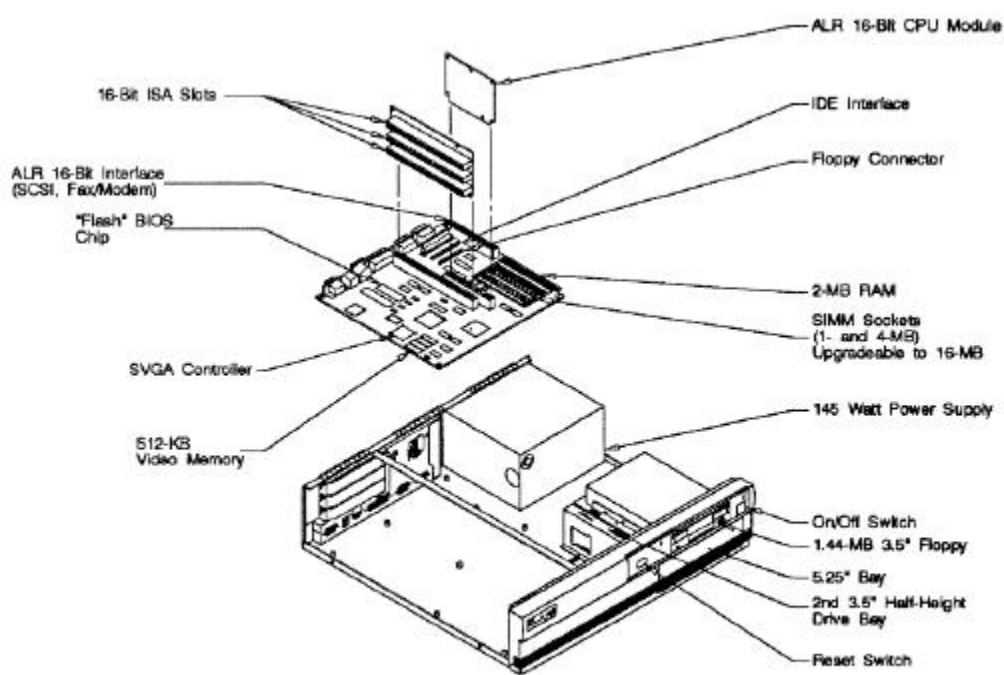


Figure 1-2: Inside the FLYER SD

486SX CPU Module

Think of this chip as the brains of your computer. It is this technological wonder that performs the million of computations required to place words on your screen, recalculate your spreadsheet, sort your database or shoot down enemy spaceships.

The FLYER SD contains a 486SX CPU that operates at 25-MHz. This chip can be easily upgraded to an even 'smarter' CPU if the need arises.

Memory

What good is a brain if it can't remember anything? In response to this query the FLYER SD comes standard with 2-MB (MegaBytes) of system memory. This memory can be increased to a total of 16-MB using 30-pin SIMM modules.

Expansion Slots

Chances are you'll find more to do with your FLYER SD than even the engineers imagined. Perhaps you'll want to install a sound card for multimedia applications, or connect a scanner to do photo retouching, or even hook your system up to a network. The FLYER SD contains two types of expansion slots to allow you to get the most out of your system.

The FLYER SD's proprietary expansion slots are reserved for the CPU or other optional cards available through ALR. Three standard 16-bit ISA slots also allow you to install a wide range of expansion peripherals.

Keyboard

The FLYER SD system includes an enhanced 101-key IBM AT-compatible keyboard with a long interface cable. This cable enables you to place the keyboard at a convenient distance from the system unit.

ALR Mouse

You will find this pointing device invaluable when working in a graphical environment. An ALR mouse is included with all models of the FLYER SD equipped with hard drives.

Video

The FLYER SD comes equipped with a 16-bit Super VGA (Video Graphics Array) controller located directly on the system board.

The FLYER SD video controller contains 512-KB of video memory and supports the following resolutions:

- 640 x 480, 256 colors
- 800 x 600, 256 colors
- 1024 x 768, 16 colors

Available Storage Bays

The FLYER SD chassis can accommodate a 5.25-inch half-height and 3.5-inch half-height device in addition to the standard floppy drive. You can use these storage bays to install hard drives, a tape backup or CD-ROM.

Floppy Drives and Controller

The FLYER SD comes standard with a 3.5-inch 1.44-MB floppy drive. It is through this drive that you can install your software applications to the optional hard drive, or save and transfer data between other compatible computers. Model 1 uses this drive to boot the system upon power up.

The controller chips that provide the logic circuits for your floppy drive are located directly on the system board.

Hard Disk Drives and Controllers

The FLYER SD system is available with or without a 3.5-inch IDE hard disk drive. This magnetic storage media is where your programs and data can be stored while the power's off. As with the floppy drive, the controller for this drive is also located directly on the system board. The FLYER SD is available without a hard disk, or with an 80-MB <19-ms or 170-MB <17-ms hard drive, depending on the model you've selected.

BIOS

The Basic Input/Output System (BIOS) EPROM from Phoenix Technologies Ltd. is the chip that controls the input/output (I/O) devices of your system. The I/O protocol for peripheral devices such as terminals, printers, and scanners is completely IBM-compatible. The BIOS EPROM also contains the BIOS SETUP program, through which the FLYER SD can be configured.

An additional feature of the BIOS allows you to activate the BIOS SETUP program by pressing simultaneously the CTRL-ALT-ESC keys at the DOS prompt, or if the system's setup configuration is incorrect, the system prompts you to press the F2 key.

The FLYER SD also incorporates a "Flash" EPROM. This technological marvel allows you to upgrade your BIOS through software alone. Never again will users have to open their systems and gingerly pry delicate chips from the system board, invariably bending or breaking its delicate pins.

For basic information on the BIOS SETUP program refer to Chapter 2 of this manual. More advanced features such as advanced configuration options and enabling password support can be found in Appendix D, Advanced BIOS Setup.

Standard Software

The FLYER SD is compatible with all AT software application packages. The FLYER SD Video Drivers and Utilities diskette includes video drivers for selected applications as well as other miscellaneous utilities. Please see the README file on the diskette for current information concerning the FLYER SD Video Drivers and Utilities diskette.

Models 80 and 170 of the FLYER SD come standard with DOS 5.0 and Windows 3.1.

The FLYER SD is compatible with all versions of MS-DOS® and IBM PC-DOS, IBM OS/2, MS OS/2®, UNIX®, XENIX®, and NetWare. However, the BASIC and BASICA software from IBM PC-DOS will not run because they require BASIC support in the BIOS and thus, will run only on IBM systems. We do include QBASIC in our MS-DOS option; this provides the same function as BASICA (QBASIC is written by Microsoft).

Chapter 2

Getting Started

The following sections describe how to:

- Properly unpack your FLYER SD system
- Connect your monitor and keyboard
- Install the smoked glass door
- Power up the system
- Prepare the hard disk drive for an operating system

Installing the Smoked Glass Door

1. Insert the protruding plastic knob on the smoked glass door into the corresponding hole in the chassis, as shown in Figure 2-1 below.
2. Bend the door slightly and insert the remaining plastic knob into the corresponding hole on the chassis, as shown below.

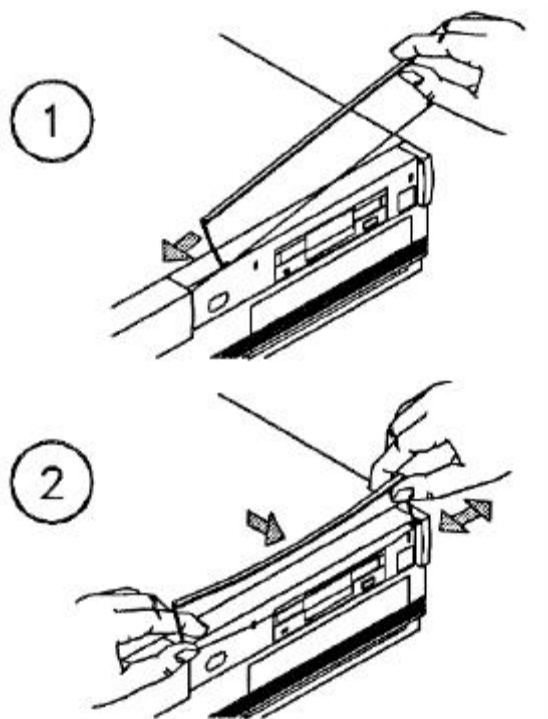


Figure 2-1: Installing the Smoked Glass Door

Connecting the Monitor and Keyboard

The keyboard and optional FlexVIEW 3X monitor must be connected to the system I/O (input/output) connectors via cables. The use of a shielded and properly grounded interface cable(s) is required to comply with FCC regulations. Figure 2-2 shows the rear of the FLYER SD chassis and identifies the various I/O connectors.

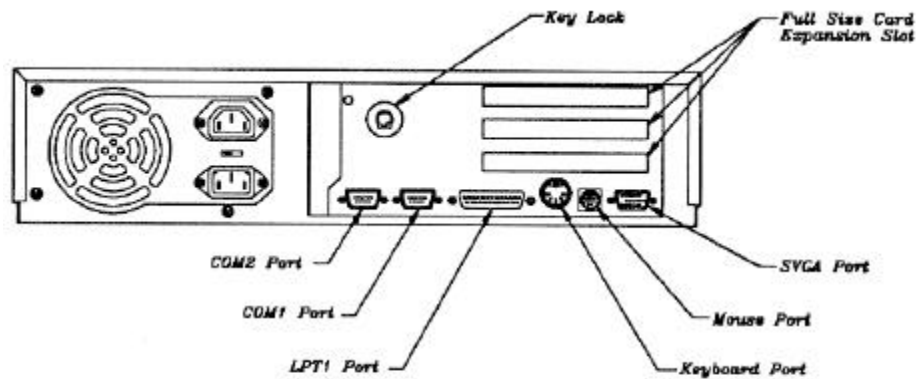


Figure 2-2: Rear of the FLYER SD



IMPORTANT: In order to comply with the requirements of the German Ergonomic Standard ZHI/6 18, only a monitor with such approval must be used.

The keyboard should be plugged into the keyboard port. The monitor should be connected to the monitor port, as illustrated in Figure 2-3. Optional equipment connections include the parallel, mouse and two serial ports, as well as the three internal expansion slots which can be used for optional boards such as network cards, controller cards, scanners and modems.

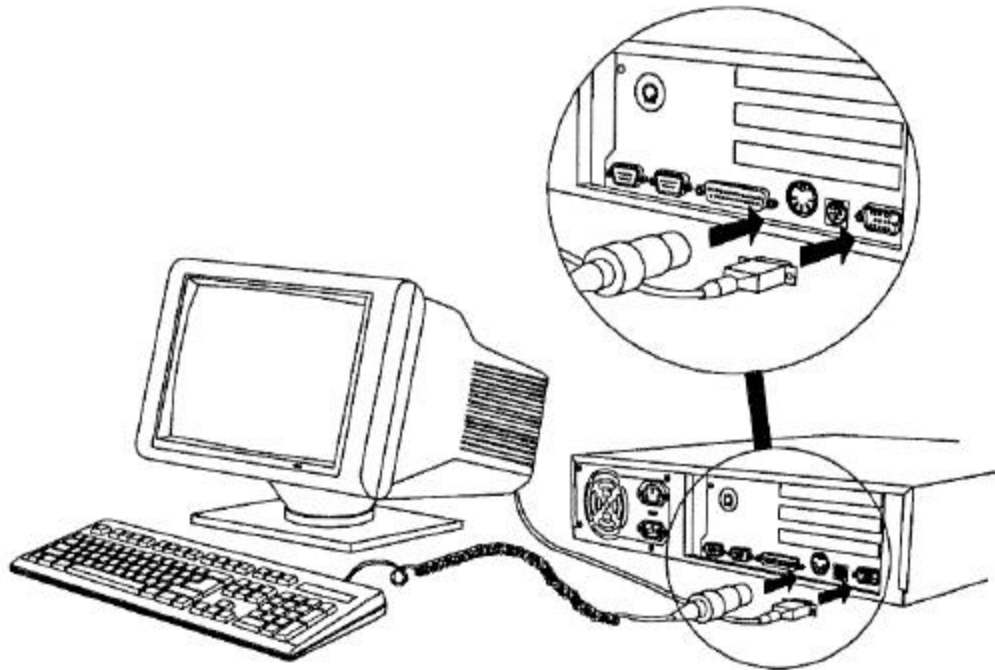


Figure 2-3: Hooking up the Keyboard and Monitor

Powering Up the System



CAUTION: Make sure the AC voltage switch located on the rear of the FLYER SD is set to the correct voltage. For example, in the United States, set the switch for 115 volts. Refer to Figure 2-2 for the location of the AC voltage switch.

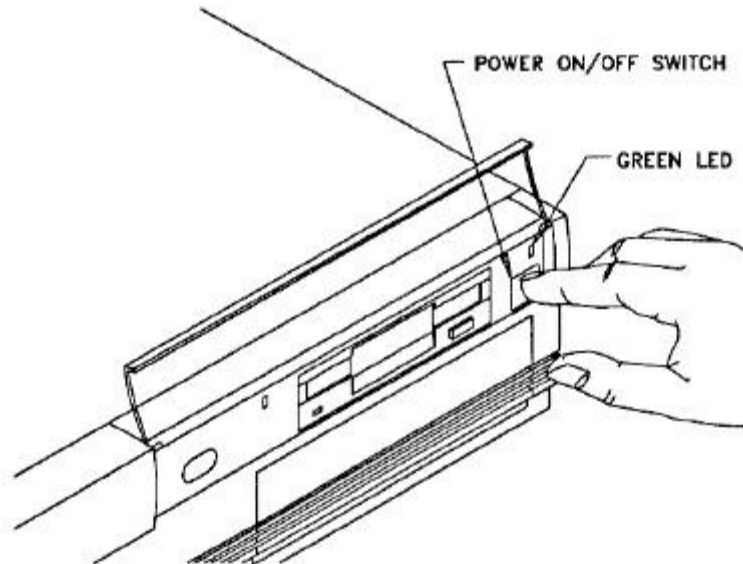


Figure 2-4: Power On/Off Switch

Turn the power ON by pressing the power on/off switch, as illustrated in Figure 2-4. The green LED (power status indicator) will light when power is on. Turn the monitor power ON.

On power-up, the FLYER SD checks its system memory, even if the monitor isn't on. The time it takes your system to perform the memory check depends on the amount of system memory. The monitor displays a power-up message, similar to the one shown on Figure 2-5.

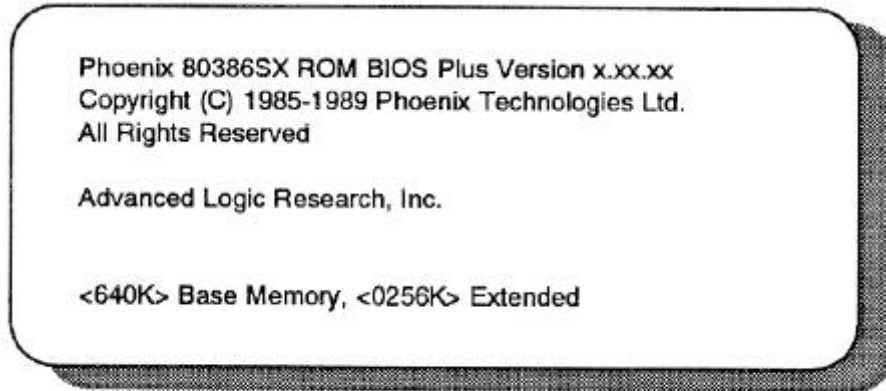


Figure 2-5: Power On Message

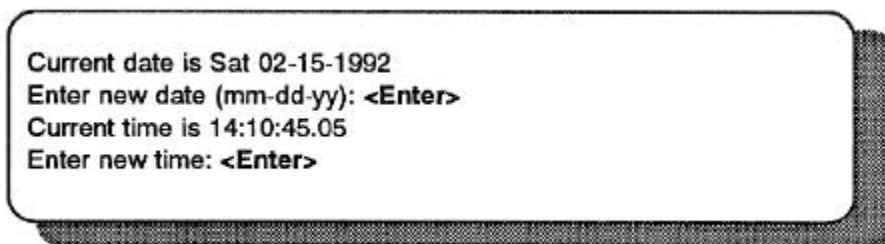
If the system fails the memory test, the monitor displays an error message preceded by two beeps.

If the video adapter is not initialized when the error occurs, a beep code signals the error message.

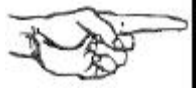
Appendix A lists the power-on self-test (POST) error messages. Most messages are nonfatal or offboard failures.

If a fatal error message occurs, contact your ALR reseller for field service support. Do not return any equipment to the factory without obtaining a **Return Material Authorization** (RMA) number. The RMA number must be written clearly on the carton.

Insert your DOS diskette in Drive A and press **F1** to reboot the system. The system responds with the following:



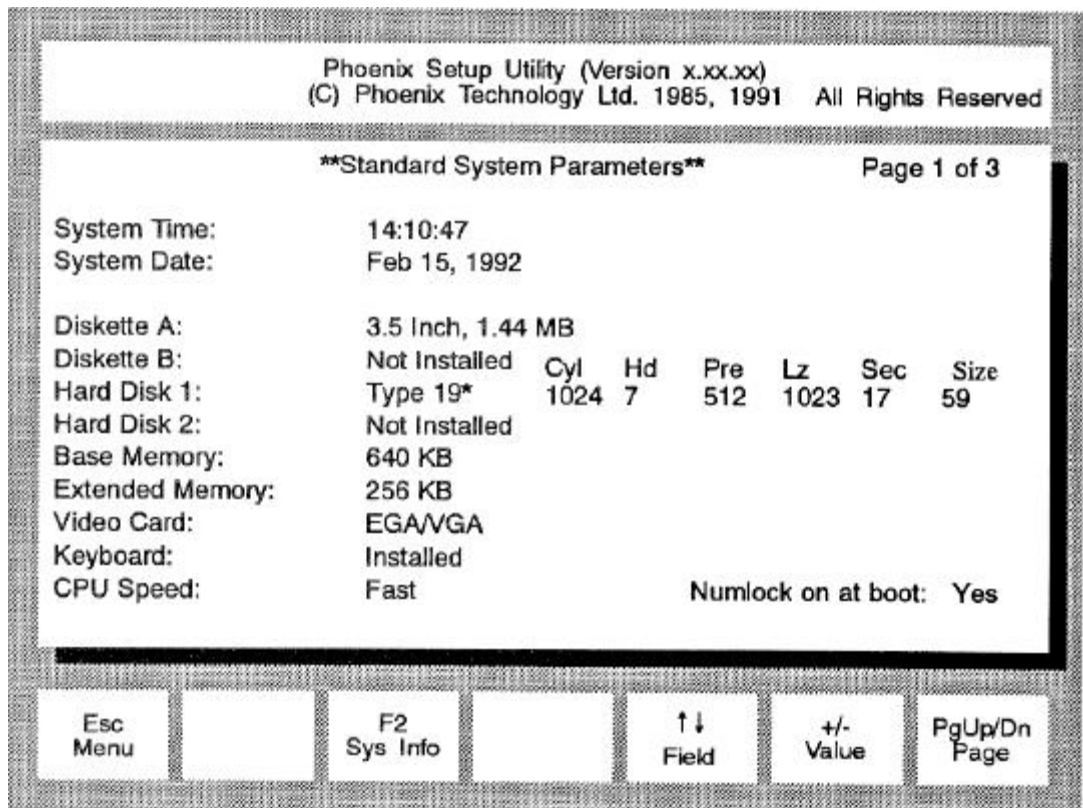
If the date or time is incorrect or if the system powers up with the message INVALID CONFIGURATION INFORMATION, you can run the BIOS SETUP program to make corrections. The “BIOS SETUP Program” section later in this chapter explains which of these two setup programs to use when reconfiguring the system.



NOTE: The procedure above is to be followed the first time you boot up your FLYER SD system. After you have prepared your hard drive for DOS (as described later in this chapter), the system will automatically boot from the hard drive.

BIOS Setup Program

You can invoke the BIOS Setup Program by simultaneously pressing **CTRL-ALT-ESC** at the DOS prompt. The following menu screen will appear.



* The drive type depends on the size of drive in your system. Refer to Appendix B for a list of drive types.

Verify that the configuration information displayed on the first SETUP screen reflects your current configuration. You can use the **Up** (↑) and **Down** (↓) arrow keys to highlight any incorrect information. Use the **Plus** (+) and **Minus** (-) keys to change the highlighted parameter.

Once you have made the appropriate changes, press **ESC** to exit the Setup screen. You must then press **F4** to record the information in CMOS and reboot the system.

Pressing **ESC** followed by **F6** will exit the SETUP program without changing your current configuration.



IMPORTANT: In order for your configuration changes to be recorded, you must press **ESC** and then **F4** to allow your system to re-boot. Pressing **P6** or simply turning off your system will cause all your changes to be lost.

More comprehensive information for the BIOS Setup program can be found in *Appendix D, Advanced BIOS Setup*.

Preparing the Hard Disk for DOS

Your hard drive may have been formatted at the factory. If this is not the case, or your system does not boot from the hard drive when you apply power, follow the procedure below:

You must initialize the hard disk drive to prepare it as a DOS system. To initialize the hard disk, you will use the DOS commands, FDISK and FORMAT. These commands are explained briefly below - for further details refer to your DOS manual. Use the following procedures to partition and format the hard disk. These procedures should only be followed the first time you use your system, or after a low-level format.

Partition the Hard Disk Drive Using FDISK

If you have not already done so, insert your DOS diskette in Drive A and boot the system by entering:

F1 (F1 = function key)

To partition the drive, enter:

A>FDISK <Enter>

The FDISK program displays a series of menus to help you partition your hard disk for MS-DOS. This feature allows you to divide your drive into several smaller “drives.” If you are using DOS 3.3 or earlier, you must have at least two partitions. With later versions of DOS, you can define the entire drive as a single partition.

The system reboots after it completes the FDISK program. If the system does not allow you to complete the FDISK procedure, make sure the system setup information is correct. More specifically, you need to make sure the drive type is correct. A label indicating the appropriate drive type is attached to the ALR hard drive.



NOTE: The hard disk drive is low-level formatted at the factory — you should use the low-level format procedure only if your hard disk drive has crashed. (If your hard disk drive has crashed, you normally receive the error message, “Hard Disk Failure.”)

Initialize the Hard Drive

With the DOS diskette still inserted in Drive A, format the hard disk by entering:

```
A>FORMAT C:/8 <Enter>
```

This will format the drive and transfer the DOS system files required for booting. You can now boot the hard disk drive. To verify that it is bootable, open the door to Drive A: and reboot the system by entering:

```
CTRL-ALT-DEL (DELETE key)
```

The DOS system prompt is displayed from Drive C as

```
C>
```

Your FLYER SD hard disk system is now ready to run DOS applications.

If you wish to prepare your hard disk for other operating systems such as OS/2, UNIX, XENIX or Novell, refer to the documentation supplied with your operating system software.

Logging Hard Disk Drive Characteristics

ALR recommends that you run the SETUP program to check characteristics of the hard disk installed in your system. Knowing your drive configuration helps if you must set up the system after a crash that destroys the contents of the CMOS RAM. If your system loses its configuration information, check the label on the drive for the drive type or call your dealer. Appendix B lists all available drive types and their associated characteristics. This list is invaluable if you install a new drive and must define its drive type.



NOTE: You should paste a label on your system listing any configuration changes for future reference.

Chapter 3

Standard System Configuration

This chapter describes the configurations for the various components of the standard FLYER SD. The following boards and controllers are included with the standard FLYER SD system:

- system board
- ALR CPU module
- SVGA controller (embedded)
- hard disk drive (except Model 1)
- ALR Mouse (except Model 1)
- IDE hard disk controller (embedded)
- floppy disk drive
- Floppy disk controller (embedded)



NOTE: The FLYER SD hardware configurations are factory set and should normally require no changes. Descriptions provided in this chapter are intended as reference aids.

Opening the System Unit



CAUTION: Make sure the power switch is OFF and the power cord is removed from the system unit. Turn off any other equipment connected to the computer. Installing any component while the power is ON can permanently damage your computer and its parts.

To open the chassis to re-configure the boards and/or add optional accessories, refer to Figure 3-1 and follow the procedure below.

1. Remove the two philips screws on each side of the chassis. Unlock the keylock located on the rear of your system and lift from the back.
2. Lift the chassis cover straight up, and carefully remove.

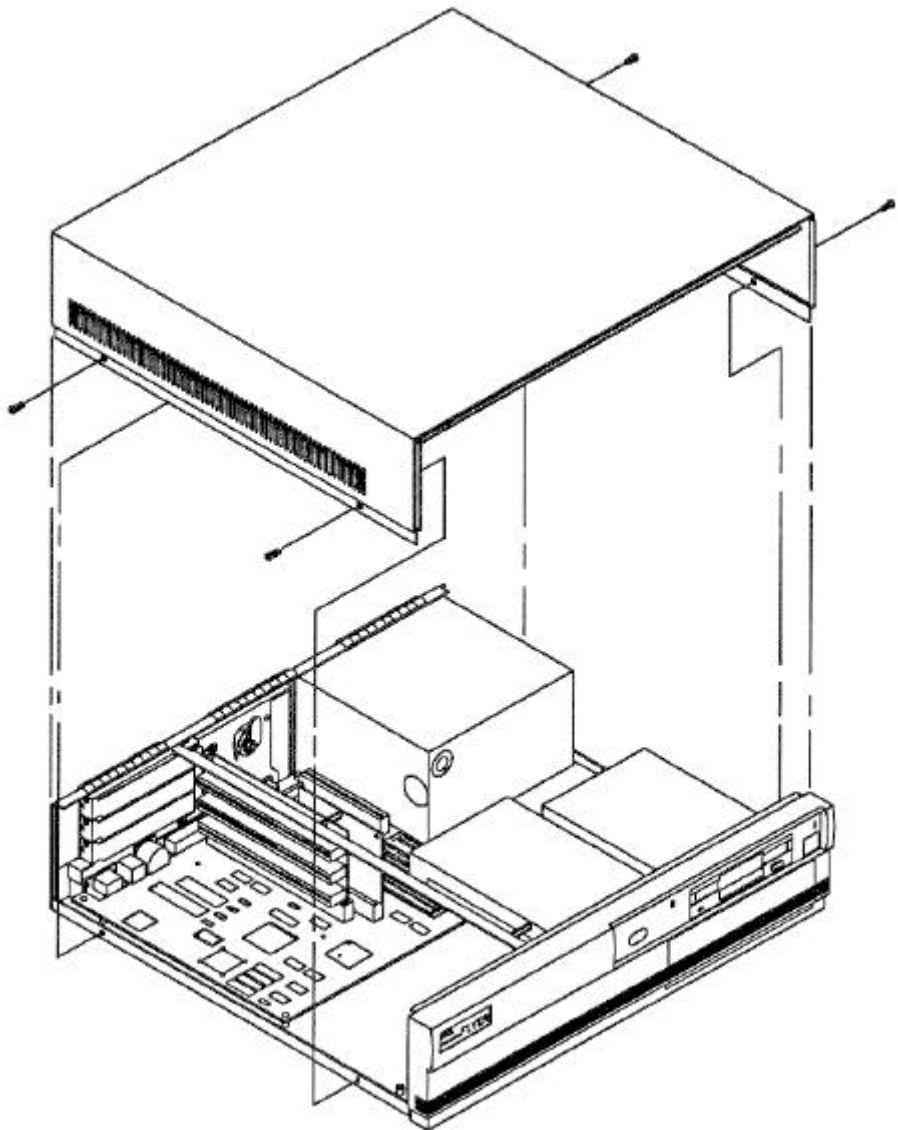


Figure 3-1: Opening the System Unit

System Board Layout

Figure 3-2 shows the locations of the various system board components. The following sections describe how to configure these components and I/O ports.

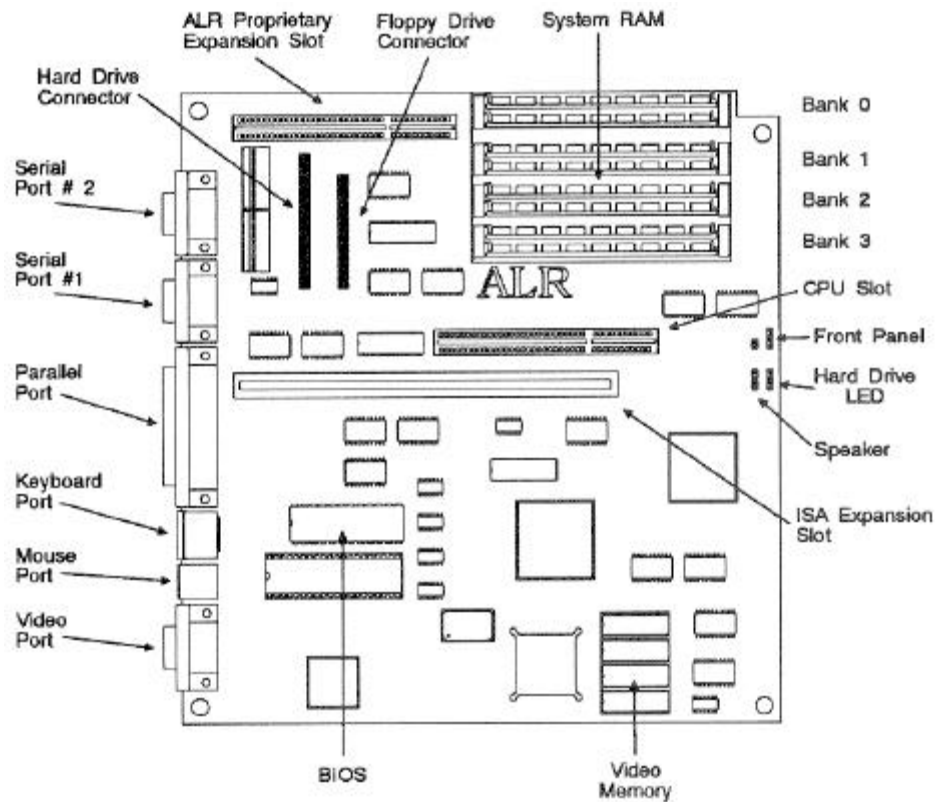


Figure 3-2: ALR FLYER SD System Board

Floppy Disk Controller Configuration

The system board includes an integrated floppy disk controller which contains the circuitry and control functions for the standard 3.5-inch 1.44-MB floppy drive.

The floppy drive can be configured through the BIOS SETUP program.

Hard Disk Controller Configuration

The FLYER SD system board also includes an integrated IDE hard disk controller which contains the circuitry and control functions for interfacing the IDE hard disk drive.

Run the BIOS SETUP to reconfigure the system if you install a hard drive or replace the existing one.

System Board Memory Configuration

The standard FLYER SD system includes 2-MB of memory installed on the system board. This can be increased to a system total of 16-MB. Figure 3-2 shows the FLYER SD system board and the location of the memory banks.

FLYER SD memory configurations and upgrade instructions be found later in this chapter.

ALR Mouse Configuration

The ALR mouse is plugged into the mouse port in the rear of the FLYER SD chassis. The ALR mouse requires a mouse driver in order for it to operate with programs that support a mouse. This mouse driver must be loaded into memory before programs are run if you wish to have mouse support. A drivers and utilities disk is included with the ALR mouse.

ALR Proprietary I/O Slot Configuration

This proprietary 16-bit I/O slot is reserved for adapters that will interface such devices as a SCSI hard disk drive, network card, CD-ROM or Fax/Modem. By installing these compact cards in this proprietary slot, your three ISA expansion slots remain free for other peripherals. Do not attempt to install a standard ISA board in this slot.

A configuration utility for devices installed in this slot is included with on FLYER SD Utilities diskette.

16-Bit ISA Slot Configuration

These three slots support full-sized 16-bit ISA cards for such devices as network cards, modems, controller cards, scanners, FAX modems and CD-ROMs. Refer to ALR FLYER SD Options for instructions on how to install peripheral cards into these slots.

SVGA Controller

An embedded SVGA controller comes standard with the FLYER SD and is 100% VGA compatible. This graphics adapter has 5 12-KB of video memory and can support the following resolutions:

- 640 x 480, 256 colors
- 800 x 600, 256 colors
- 1024 x 768 16 colors

ALR CPU Module

The standard ALR CPU module is a 25-MHz 486SX CPU. It contains a socket for coprocessor support. Both of these modules can be removed and upgraded as the need arises.

Do not remove your CPU module unless you are upgrading your system or installing a coprocessor.

Removing the ALR CPU Module

If you wish to remove your ALR CPU module to either upgrade it or install a coprocessor, follow the steps outlined below.

1. Open the system unit, as described earlier in this chapter.
2. Using a Phillips screwdriver, untwist the screw securing the top of the CPU card to the FLYER SD chassis. Remove the screw and spacer, being careful not to let any hardware fall on the system board. Refer to Figure 3-3 for details.
3. Firmly grasp the corners of the board and lift it out of the socket.

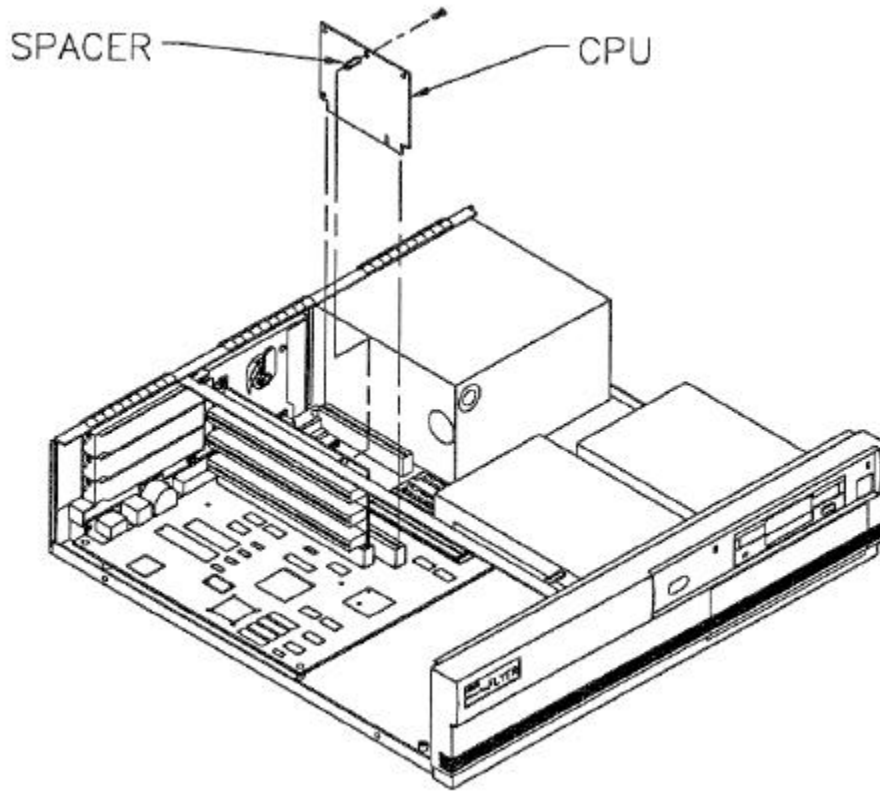


Figure 3-3: Removing the ALR CPU Module

Installing the ALR CPU Module

After you have installed a coprocessor, or if you are upgrading your CPU, follow the steps below to install your CPU into its proprietary slot.

1. Insert the CPU module into the CPU slot, referring to Figure 3-3 if necessary. Apply even pressure until it is fully seated. Verify that the module is facing the correct way and is not cocked.
2. Replace the screw and spacer and secure the module to the FLYER SD chassis.
3. Close your system unit.

No configuration is required since your system will automatically detect and utilize any new hardware you installed.

System Board Memory Configuration

The standard FLYER SD system includes 2-MB of memory installed on the system board.

Figure 3-2 shows the FLYER SD system board and the location of Banks 0, 1, 2 and 3. Note that each bank consists of two slots.

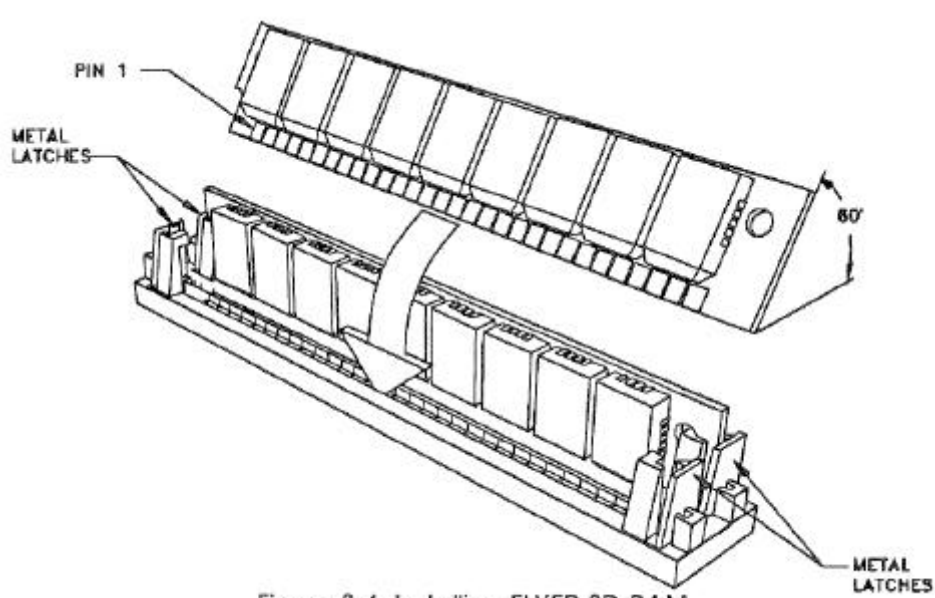
Table 3-1 lists the possible system board memory configurations for the FLYER SD. The maximum system board memory is 16-MB.

Table 3-1: FLYER SD Memory Configurations

Bank 0	Bank 1	Bank 2	Bank 3	Total
two 1-MB	—	—	—	2-MB
two 1-MB	two 1-MB	—	—	4-MB
two 1-MB	two 1-MB	two 1-MB	two 1-MB	8-MB
two 1-MB	two 4-MB	—	—	10-MB
two 4-MB	two 4-MB	—	—	16-MB

Installing RAM

1. Angle the memory module slightly towards the system board as you insert it into the socket. Refer to Figure 3-4 if necessary.



2. Press the memory module into the socket until its contacts are firmly seated.
3. Tilt the module up into a vertical position until the socket latches click into place.



NOTE: Inspect the memory module to make sure it's seated within its socket. This can be verified by examining the top of the modules to ensure that they are all the same depth within their socket. If the memory modules aren't seated properly, memory errors will occur when you power up your system.

4. Repeat steps 1-3 to install the remaining RAM.



IMPORTANT: Do not partially install a memory kit into your system. An entire bank must be completely filled in order to benefit from the additional RAM.

5. Close the system.

The next time you turn on your system you will receive a message informing you of a configuration error. To correct this problem, simply press F2 when the system prompts you. Pressing ESC followed by F4 will record the new memory configuration information and reboot.

Removing RAM

To remove RAM, simply push the spring loaded latches outward and lift the memory module out of the socket.

Appendix A

Error Messages

The power-on self-test displays messages when it detects nonfatal on board or off board failures. There are two types of error messages:

- *Nonfatal Errors* display information on your monitor.
- *Fatal System Board Error Beep Codes* signal an error condition when a message cannot be displayed on your monitor.



NOTE: For recurring problems, do the following:

- Call your nearest authorized ALR dealer.
- Call the ALR Technical Support at (714) 458-0863 or 800-257-1230.
- Remember, DO NOT send any equipment without a Return Material Authorization (RMA) and original packaging. The RMA number must be written clearly on the carton in which the equipment is shipped.

Nonfatal Errors

This section lists messages and their explanation and possible solutions that may be displayed when your computer boots up. Variable [xxx] items differ from message to message.

Decreasing available memory

Explanation:
Your system's RAM chips may be defective or the SIMMs may be improperly installed.

Solution:
Check the SIMMs and make sure they're properly inserted into their sockets. Replace if necessary.

Diskette drive 0 seek to track 0 failed

Explanation:
Your system's configuration is incorrect; the actual floppy drive in your system is different from that specified in your SETUP configuration. This error message may also result if you have a drive failure, or if the floppy drive cable is not properly inserted.

Solution:
Check your SETUP configuration and make sure the correct drive is selected. Make sure the floppy drive cable is properly installed and secured.

Diskette drive reset failed

Explanation:
Your system's configuration is incorrect. The actual floppy drive in your system does not match the one specified in your SETUP configuration or the floppy drive/cables may be defective.

Solution:
Check your SETUP configuration and make sure the correct drive is selected. Replace the drive/cable.

Diskette read failed - strike F1 to retry boot	<p>Explanation: The floppy disk inserted in your drive is not a bootable disk, the configuration for your drive is incorrect, or the configuration is incorrect for your controller card.</p> <p><i>Solution:</i> Make sure that your boot disk contains a file called <i>COMMAND.COM</i>. Use the configuration utility to check your drive or controller card configuration. Press F1 to reboot</p>
Gate A20 failure	<p>Explanation: You have an XT keyboard connected to your AT system.</p> <p><i>Solution:</i> Check the switch at the bottom of your keyboard and make sure it is pointing to "AT." If the message persists, replace the keyboard.</p>
Hard disk controller failure	<p>Explanation: The hard disk cable may not be properly secured or the hard disk controller may be defective.</p> <p><i>Solution:</i> Make sure the hard disk cable is properly secured or contact your ALR reseller for support.</p>
Hard disk failure	<p>Explanation: The hard disk may not have been low-level formatted, the SETUP configuration does not match the type of hard disk actually installed in your system, or the hard disk controller may be defective.</p> <p><i>Solution:</i> Run the <i>SETUP</i> program, described in Chapter 2 of this manual, and make sure your configuration is correct. Contact your authorized ALR dealer for assistance in performing a low-level format or for having the controller repaired.</p>

Hard disk failure - strike F1 to retry boot	<p>Explanation: The hard disk or hard disk controller may be defective, or the DOS FORMAT has not yet been performed.</p> <p><i>Solution:</i> <i>Press F1 to reboot. If the message persists, have the hard disk controller repaired. Perform an FDISK and a DOS FORMAT as explained in Chapter 2 of this manual.</i></p>
Invalid configuration information - please run SETUP program	<p>Explanation: The information stored in CMOS memory does not match your system's actual configuration during power-up.</p> <p><i>Solution:</i> <i>Check your system's configuration by running the SETUP program as described in Chapter 2 of this manual</i></p>
Keyboard clock line failure	<p>Explanation: The keyboard or keyboard chip may be defective.</p> <p><i>Solution:</i> <i>Try another keyboard or check that the keyboard is in "AT" mode. Or, have the keyboard chip replaced.</i></p>
Keyboard controller failure	<p>Explanation: The keyboard or keyboard chip may be defective.</p> <p><i>Solution:</i> <i>Try another keyboard or check that the keyboard is in "AT" mode. Or, have the keyboard chip replaced.</i></p>
Keyboard data line failure	<p>Explanation: The keyboard or keyboard chip may be defective.</p> <p><i>Solution:</i> <i>Try another keyboard or check that the keyboard is in "AT" mode. Or, have the keyboard chip replaced.</i></p>
Keyboard stuck key failure	<p>Explanation: One of the keyboard keys may be jammed.</p> <p><i>Solution:</i> <i>Push the jammed key to release it or replace the keyboard.</i></p>

Memory address line failure at [xxx], read [xxx] expecting [xxx]	<p>Explanation: Your system's RAM chips may be defective or the SIMMs may be improperly installed.</p> <p><i>Solution:</i> <i>Check the SIMMs and make sure they're properly inserted into their sockets. Replace if necessary.</i></p>
Memory high address line failure at [xxx], read [xxx] expecting [xxx]	<p>Explanation: Your system's RAM chips may be defective or the SIMMs may be improperly installed.</p> <p><i>Solution:</i> <i>Check the SIMMs and make sure they're properly inserted into their sockets. Replace if necessary.</i></p>
Memory parity failure at [xxx-xxx]	<p>Explanation: The parity RAM chips may be defective or the SIMMs may be improperly in-stalled. Also, the SIMMs must have 70-ns DRAM speed. Additional memory size does not match total memory installed.</p> <p><i>Solution:</i> <i>Make sure the parity ALR SIMM chips are properly installed into their sockets. Replace if necessary.</i></p>
Memory write/read failure at [xxx], read [xxx] expecting [xxx]	<p>Explanation: Your system's RAM chips may be defective or the ALR SIMMs may be improperly installed. Also, the speed jumpers may be improperly set.</p> <p><i>Solution:</i> <i>Check the ALR SIMMs and make sure they're properly inserted into their sockets. Replace if necessary. Verify the DRAM speed is 80-ns.</i></p>
No boot device available - strike F1 to retry boot	<p>Explanation: There's no bootable file on the floppy disk, the diskette or the floppy disk controller may be defective.</p> <p><i>Solution:</i> <i>Make sure the boot disk contains the COM-MAND.COM file. Check that the floppy disk is set properly in the BIOS SETUP program. Press F1 to reboot if the message persists, have the floppy disk controller replaced.</i></p>

No boot sector on hard disk - strike F1 to retry boot	<p>Explanation: There's no bootable file on the hard disk. The hard disk has either been damaged or has never been formatted.</p> <p><i>Solution:</i> <i>Press F1 to reboot if the message persists, format the hard disk as follows:</i></p> <p style="text-align: center;"><i>FORMAT C:/S <Enter></i></p>
Not a boot diskette - press F1 to retry boot	<p>Explanation: There's no bootable file on the boot disk or your system's SETUP configuration does not match the actual floppy drive on the system.</p> <p><i>Solution:</i> <i>Make sure the boot disk contains the COMMAND.COM file. Press F1 to reboot. Run the SETUP program, described in Chapter 2 of this manual, to configure the correct floppy drive.</i></p>
No timer tick	<p>Explanation: Your system's timer circuitry or your system's BIOS chips may be defective or it's an older version.</p> <p><i>Solution:</i> <i>Contact your authorized ALR dealer for assistance.</i></p>
[xxx] Optional ROM bad Checksum = [xxx]	<p>Explanation: An optional card's BIOS may be defective.</p> <p><i>Solution:</i> <i>Contact your authorized ALR dealer for assistance.</i></p>
Shutdown failure	<p>Explanation: Your system's hardware circuitry has malfunctioned.</p> <p><i>Solution:</i> <i>Contact your authorized ALR reseller for assistance.</i></p>
Strike the F1 key to continue	<p>Explanation: The system cannot locate a bootable file from the floppy or hard disk.</p> <p><i>Solution:</i> <i>Insert a bootable DOS diskette into the floppy drive. Press F1 to continue the boot</i></p>

Time of day clock stopped	<p>Explanation: A clock chip may be defective or the battery may be discharged.</p> <p><i>Solution:</i> <i>Contact your authorized ALR reseller for assistance in replacing the clock chip.</i></p>
Timer Chip counter 2 failed	<p>Explanation: Your system's hardware circuitry has malfunctioned.</p> <p><i>Solution:</i> <i>Contact your authorized ALR reseller for assistance.</i></p>
Timer of Interrupt Controller Bad	<p>Explanation: Your system's hardware circuitry has malfunctioned.</p> <p><i>Solution:</i> <i>Contact your authorized ALR reseller for assistance.</i></p>
Unexpected interrupt in protected mode	<p>Explanation: Your system's hardware circuitry has mal-functioned.</p> <p><i>Solution:</i> <i>Contact your authorized MR reseller for assistance.</i></p>

Fatal System Board Error Beep Codes

If an error occurs when the monitor is not available to display the message, the self-test issues a series of beeps to signal the error. The self-test does not issue a beep if a test is aborted while in progress.

For example, a failure of bit 3 in the first 64-KB of RAM causes a 2-1-4 beep code (a burst of two beeps, a single beep, and a burst of four beeps). Additionally, the self-test writes a value to I/O port 80H. This code enables debugging tools to help technical users identify the failed area.

Errors are either fatal (those that halt the system) or nonfatal (those that are not serious enough to halt the system). Fatal errors contain the word “failure.”

Beep Code	Description	680H Code
none	386/i486 register test in progress	01H
1-1-3	Real-time clock write/read failure	02H
1-1-4	ROM BIOS checksum failure	03H
1-2-1	Programmable interval timer failure	04H
1-2-2	DMA initialization failure	05H
1-2-3	DMA page register write/read failure	06H
1-3-1	RAM refresh verification failure	08H
none	1st 64-KB RAM test in progress	09H
1-3-3	1st 64-KB RAM chip or data line multi-bit	0AH
1-3-4	1st 64-KB RAM add/even logic failure	0BH
1-4-1	Address line failure 1st 64-KB RAM	0CH
1-4-2	Parity failure 1st 64-KB RAM	0DH
2-1-1	Bit 0 1st 64-KB RAM failure	10H
2-1-2	Bit 1 1st 64-KB RAM failure	11H
2-1-3	Bit 2 1st 64-KB RAM failure	12H
2-1-4	Bit 3 1st 64-KB RAM failure	13H
2-2-1	Bit 4 1st 64-KB RAM failure	14H
2-2-2	Bit 5 1st 64-KB RAM failure	15H
2-2-3	Bit 6 1st 64-KB RAM failure	16H
2-2-4	Bit 7 1st 64-KB RAM failure	17H
2-3-1	Bit 8 1st 64-KB RAM failure	18H
2-3-2	Bit 9 1st 64-KB RAM failure	19H
2-3-3	Bit A 1st 64-KB RAM failure	1AH
2-3-4	Bit B 1st 64-KB RAM failure	1BH
2-4-1	Bit C 1st 64-KB RAM failure	1CH
2-4-2	Bit D 1st 64-KB RAM failure	1DH
2-4-3	Bit E 1st 64-KB RAM failure	1EH
2-4-4	Bit F 1st 64-KB RAM failure	1FH

Beep Code	Description	680H Code
3-1-1	Slave DMA register failure	20H
3-1-2	Master DMA register failure	21H
3-1-3	Master interrupt mask register failure	22H
3-1-4	Slave interrupt mask register failure	23H
none	Interrupt vector loading in progress	25H
3-2-4	Keyboard controller test failure	27H
none	Real-time clock power failure and checksum calculation in progress	28H
none	Real-time clock configuration validation in progress	29H
none	Search for video ROM in progress	2EH
none	Screen operable	30H
none	Screen running with video ROM	30H
none	Monochrome monitor operable	31H
none	Color monitor (40 column) operable	32H
none	Color monitor (80 column) operable	33H
none	External cache failure	39H
1-1-2	System board select failure	41H
1-1-3	Extended CMOS RAM failure	42H

Appendix B

Hard Disk Drive Characteristics

Drive Type	Cylinders	Heads	Precomp	Landing Zone	Sectors	Size (MB)
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	1630	15	-1	1630	52	620
6	117	16	0	0	63	57
7	1630	8	-1	1630	52	331
8	329	16	0	0	63	161
9	900	15	-1	901	17	112
10	615	8	128	664	17	40
11	776	8	-1	776	33	100
12	535	10	-1	535	29	75
13	953	7	-1	953	34	110
14	733	7	-1	733	26	65
16	953	5	-1	953	34	79
17	977	5	300,	977	17	40
18	816	15	-1	816	32	191
19	1024	7	512	1023	17	59
20	823	10	-1	823	34	136
21	733	7	300	732	17	42
22	971	5	-1	971	26	61
23	820	6	-1	820	17	40
24	1024	7	-1	1024	34	119
25	1022	7	-1	1022	34	118
26	1024	4	-1	1023	17	34
27	1024	5	-1	1023	17	42
28	1024	8	-1	1023	17	68
29	895	10	0	0	55	240
30	845	7	-1	845	35	101
31	989	5	128	989	17	41
32	1020	15	-1	1024	17	127
33	1024	9	-1	1024	17	76
34	966	9	-1	966	34	144
35	1024	16	-1	1630	63	504

Drive Type	Cylinders	Heads	Precomp	Landing Zone	Sectors	Size (MB)
36	1024	5	512	1024	17	42
37	1024	5	-1	1024	26	65
38	611	16	-1	612	63	300
39	654	16	-1	1630	63	321
40	642	16	-1	1778	63	315
41	917	15	-1	918	17	114
42	1023	15	-1	1024	17	127
43	497	10	-1	497	33	80
44	820	6	-1	820	17	40
45	1024	8	-1	1024	17	68
46	1024	7	-1	1024	26	91
47	288	16	-1	1224	63	141
48	0	0	0	0	0	0
49	0	0	0	0	0	0

- Drive types and characteristics sometimes change with different BIOS versions, so it's a good idea to always check the on-line information.
- Drive type numbers not assigned are reserved for future use.
- Drive types 48 and 49 are user-definable. That is, you can change the parameters according to your drive specification. See Chapter 2 for details.

Appendix C

Standard System Specifications

<i>ALR CPU Module</i>	Intel 25-MHz 486SX
<i>Coprocessor Support</i>	Intel 25-Mhz 487SX Intel OverDrive Chip
<i>On Board Memory</i>	2-MB; expandable to 16-MB
<i>Clock Calendar</i>	CMOS clock calendar
<i>BIOS</i>	Phoenix 128-KB “Flash” EPROM with on board BIOS SETUP program
<i>I/O Ports</i>	Two serial, one each parallel, mouse and keyboard
<i>Expansion Slots</i>	three 16-bit ISA slots; two proprietary slots
<i>Storage Bays</i>	Two 3.5-Inch half-height device and one 5.25-Inch half- height device
<i>Hard Disk Controller</i>	Embedded IDE hard disk controller capable of supporting up to two hard disk drives
<i>Floppy Drives</i>	3.5-Inch 1.44-MB (5.25-Inch 1.2-MB optional)
<i>Floppy Disk Controller</i>	Embedded on the motherboard with support for two floppy drives
<i>VGA Controller</i>	Embedded 16-bit Super VGA card with 512-KB video memory capable of supporting 1024 x 768 resolution
<i>Keyboard</i>	101-key, enhanced
<i>Software</i>	ALR Utilities

<i>Timer</i>	<i>Channel</i>	<i>Function</i>
	0	Time of Day
	2	Speaker
	3	Watchdog Timer
<i>Interrupts</i>	<i>Interrupt</i>	<i>Function</i>
	0	Timer
	1	Keyboard
	2	Cascade Interrupt Control
	3	Serial Alternate COM2
	4	Serial Primary COM1
	5	Available
	6	Diskette
	7	Parallel Port LPT1
	8	Real Time Clock
	9	Redirect Cascade
	10	Available
	11	Available
	12	Mouse
	13	Math Coprocessor Exception
	14	Fixed Disk
	15	Available

* This system does not support Novell's Disk Coprocessor Board (DCB) channel #2 due to an interrupt conflict with the mouse port.

<i>Power Supply</i>	145 watts
<i>AC Input</i>	120 VAC or 240 VAC
<i>DC Output</i>	7.3A @ +12V \pm 5% .3A (max) @ -12V \pm 10% 20A (max) @ +5V \pm 5% .3A (max) @ -5V \pm 10%
<i>Temperature</i>	0 to 40 degrees C
<i>Humidity</i>	0 to 90% non-condensing
<i>Altitude</i>	8,000 feet (maximum)
<i>Dimensions</i>	3.7" H x 16.3" W x 15.6" D
<i>Weight</i>	25 lbs.

Appendix D

Advanced BIOS Setup

The Phoenix AT-compatible BIOS SETUP program sets the contents of the battery-powered CMOS RAM that stores system configurations. The SETUP program also provides the following features:

- checks conventional and extended memory and reports its capacity (only on initial setup)
- recalculates CMOS data and checksums
- shows the presence of a coprocessor (if installed)
- displays a message if the video configuration is wrong
- provides a password support feature

Use the following keys to control the BIOS SETUP program:

- **Up** (↑) and **Down** (↓) arrow keys to move the shaded cursor to the appropriate option
- **Plus** (+) and **Minus** (-) keys to scroll through the selections and select the appropriate configuration
- **PgUp** and **PgDn** keys to toggle between the three SETUP screens
- **ESC** key to open the Exit Setup window with the following choices:
 - **F4** to save values and reboot
 - **F5** to load default configuration values
 - **F6** to abort SETUP without saving

After running the SETUP program, you must boot the system by selecting F4 so that the configurations you've just set can be recorded in CMOS. If you power down instead of rebooting, the data you've Just entered will not be recorded

Activating the SETUP Program

To activate the SETUP program, press **CTRL-ALT-ESC** at the DOS prompt.

The FLYER SD BIOS SETUP program is displayed on three screens. When you activate the BIOS SETUP program, the system responds with the Main SETUP Screen which lists copyright message, time and date, and current system configurations, similar to the screen that follows.

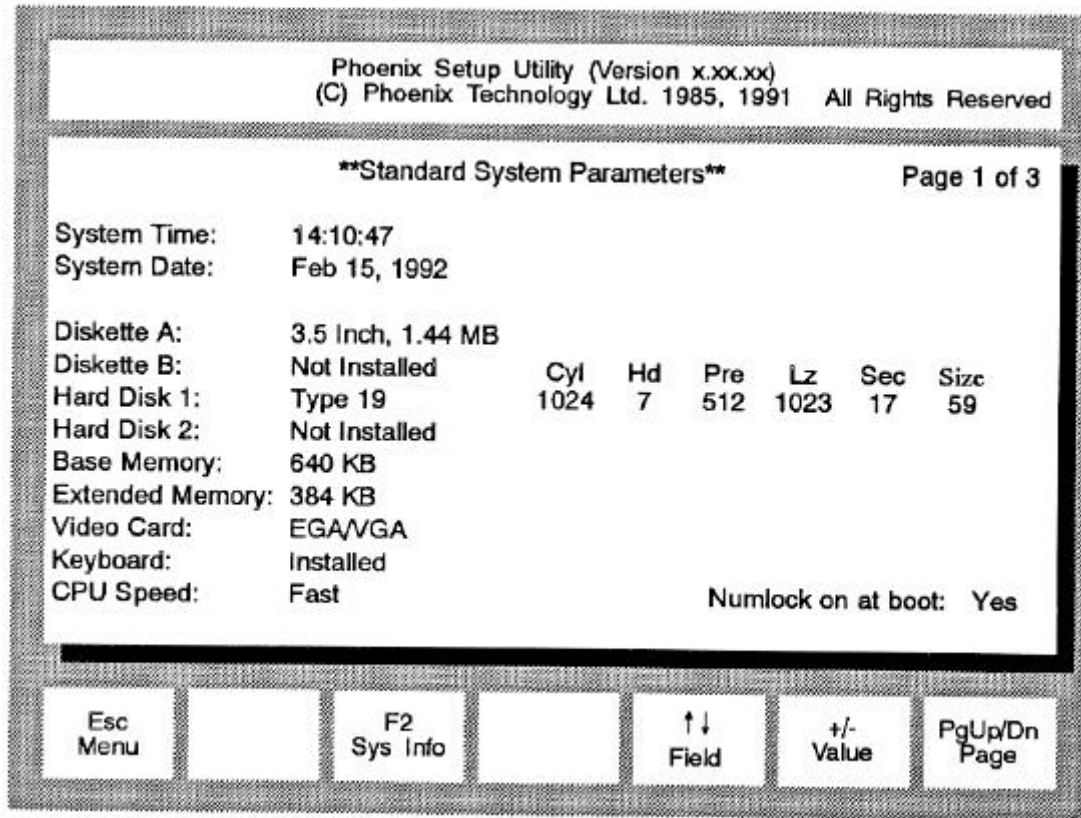


Figure D-1: Main BIOS Setup Screen

The following list provides the selections available for each option:

- Time:* Hour:Minute:Second
(HH:MM:SS)
- Date:* Day Month Date, Year
(day-of-week is automatic)
- Diskette A:* Not Installed
5.25-Inch, 360-KB
5.25-Inch, 1.2-MB
3.5-Inch, 720-KB
3.5-Inch, 1.44-MB
- Diskette B:* same selections as for Diskette A
- Hard Disk 1:* Not Installed
Type <1 - 49>¹
- Hard Disk 2:* same selections as for Hard Disk ¹
- Base Memory:* automatically configured²

<i>Extended Memory:</i>	automatically configured ²
<i>Video Card:</i>	Not Installed EGA/VGA CGA40 CGA80 MONO
<i>Keyboard</i>	Not Installed Installed
<i>CPU Speed:</i>	Fast - No slow down Slow - Slowing circuits enabled
<i>Numlock on at boot</i>	Yes No

¹ Drive types 48 and 49 are user-definable.

That is, you can change the parameters according to your drive specification. For example, If you have two hard drives and their parameters are not available from the table in Appendix B, you can tailor both hard disks to your drive specification. To do so, perform the following steps:

- a. Use the Down (↓) arrow key to move the cursor to Hard Disk 1:.
- b. Press the Plus (+) key to move the cursor to scroll through the drive types until you come to Type 48.
- c. Press the Down (↓) arrow key to move the cursor to Cyl, Hd, Pre. LZ. Sec, and Size
- d. Select the appropriate parameters according to your drive specification.
- e. Perform steps a - d above to set Hard Disk 2:.

² Detected by system. You may not make any entries in this field.

The second SETUP Screen provides the Embedded Feature Control used to configure the floppy and hard disk controllers and I/O ports:

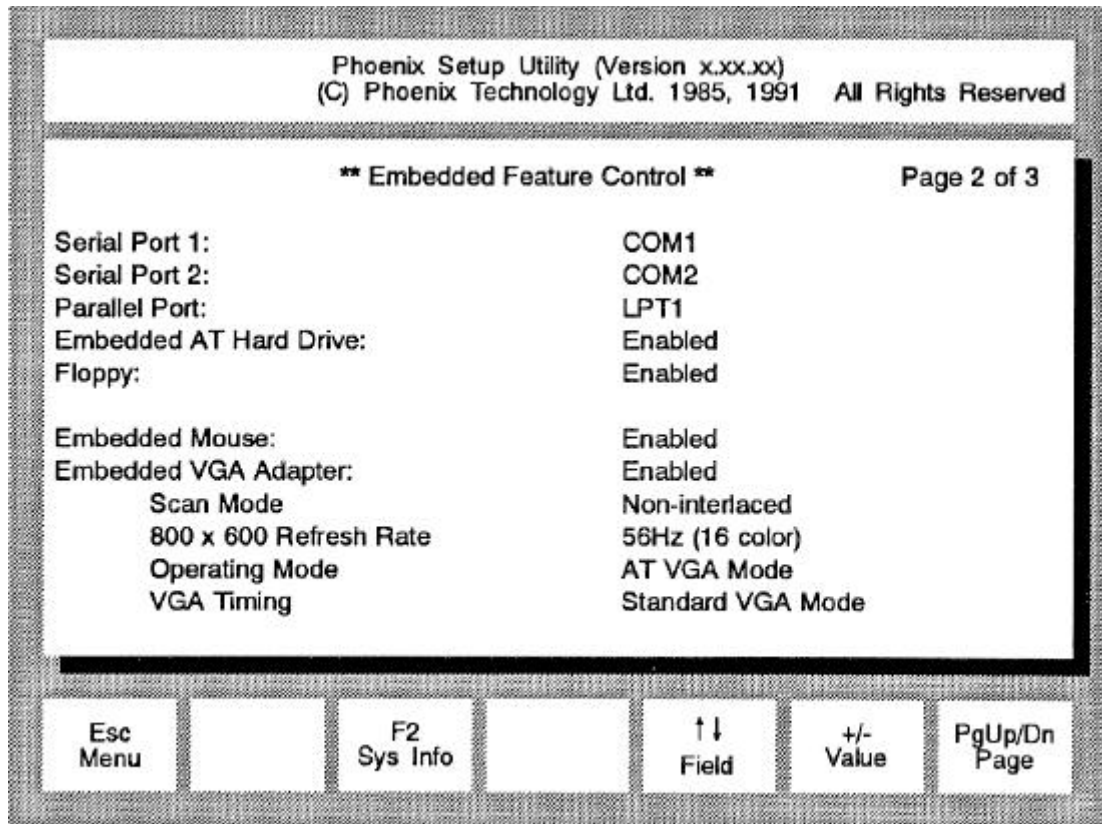


Figure D-2: Second BIOS SETUP Screen

The selections for each Embedded Feature Control are:

Serial Port 1: COM1
 COM2
 DISABLED

Serial Port 2: COM1
 COM2
 DISABLED

Parallel Port LPT1
 LPT2
 LPT3
 DISABLED

<i>Embedded AT Hard Drive Controller:</i>	ENABLED DISABLED ³
<i>Floppy:</i>	ENABLED DISABLED
<i>Embedded Mouse:</i>	ENABLED DISABLED
<i>Embedded VGA Adapter</i>	ENABLED DISABLED
<i>Scan Mode:</i>	NON-INTERLACED INTERLACED 1024
<i>800 x 600 Refresh Rate:</i>	56Hz (16 and 256 color) 60Hz 72Hz @ 16 56Hz @ 256
<i>Operating Mode:</i>	AT VGA MODE PS/2 VGA MODE
<i>VGA Timing:</i>	STANDARD VGA MODE MULTISYNC MODE ⁴

³ The Embedded AT Hard Drive Controller must be DISABLED if you install an optional hard disk controller.



NOTE: If you experience compatibility problems, try an option other than the default mode.

⁴ If you do not have a multi-sync monitor, but inadvertently configure your system for one through the BIOS Setup, your monitor display will become garbled. If this happens you should press down and hold the F12 key, press the reset button then release the F12 key when the display is legible. Your system will then come up configured for standard VGA.

A third BIOS SETUP screen can be accessed by using the PgUp or PgDn keys. This screen offers security features that allow you to upgrade the data stored in the “Flash” EPROM and enable password support.

Figure D-3 illustrates the third BIOS SETUP screen.

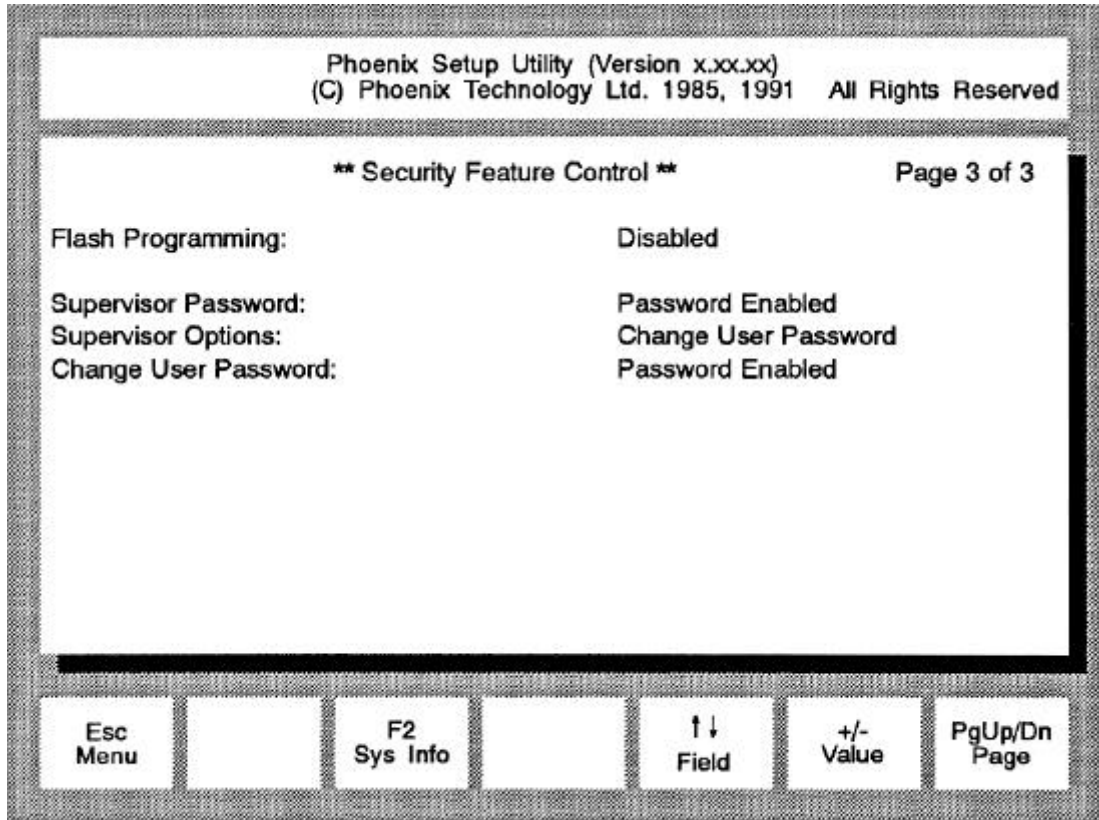


Figure D-3: Third BIOS SETUP Screen

The options available on the third BIOS SETUP screen are as follows:

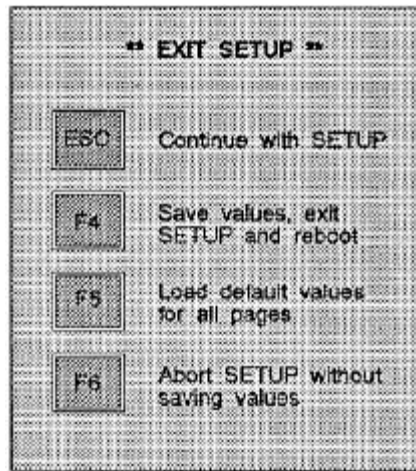
- | | |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| <i>Flash Programming:</i> | ENABLED
DISABLED |
| <i>Supervisor Password:</i> | PASSWORD DISABLED
ENTER PASSWORD |
| <i>Supervisor Options:</i> | CHANGE USER PASSWORD
ENABLE USER PASSWORD
DISABLE USER PASSWORD
CHANGE SUPERVISOR PASSWORD |
| <i>Change User Password:</i> | PASSWORD DISABLED
ENTER OLD PASSWORD
ENTER NEW PASSWORD |

If you are required to upgrade the “Flash” EPROM, you will be provided with the software and complete instructions by ALR.

If you wish to enable password support, follow the instructions later in this chapter.

Saving Configuration Changes

After making changes to any of the BIOS Setup screens, pressing ESC will prompt you with the following message window:



You are provided with the following options:

- ESC:* Removes the message window and returns to Setup.
- F4:* Save the new values you selected and records them in the CMOS. Your system will automatically reboot with your changes in effect.
- F5:* Loads default configuration values for all the SETUP screens.
- F6:* Exits SETUP without saving any of your changes.

Password Support

Your FLYER SD is capable of supporting supervisor and user passwords. This section describes the features that are supported and explains how to use this new password support.

Features

Supports User Password of up to 7 alphanumeric characters (defaults to no password)

Supports Supervisor Password of up to 7 alphanumeric characters (defaults to the string “power”)

Supports Supervisor Options which include:

- Enable user password
- Disable user password
- Change user password
- Change supervisor password

How to Access and Use Password Support

All password support options are accessed through the third screen of the SETUP program, which is activated by pressing the **CTRL-ALT-ESC** keys. There are three password support options on the SETUP screen:

- Supervisor Password
- Supervisor Options
- Change User Password

Each option has several different selections that you may scroll by using the **Plus (+)** and **Minus (-)** keys.

Your FLYER SD is shipped in “unprotected” mode (that is, no password is required to access the system). The following sections describe how to access and use FLYER SD password support in order to place your machine in a “protected” mode (that is, a user/supervisor password is required to access the system).



NOTE: When Supervisor Option: Disable User Password is selected, all password security is disabled until Enable User Password is selected.

Establishing a User Password

When your system arrives, there will be no user password (the default is no password). You can establish the initial user password through the SETUP program as follows:

1. Activate the SETUP program by pressing **CTRL-ALT-ESC**.
2. Press the **PgUp** or **PgDn** keys twice to access the third SETUP screen. The Security Features Control screen, similar to the illustration below, is displayed in Figure D-3:

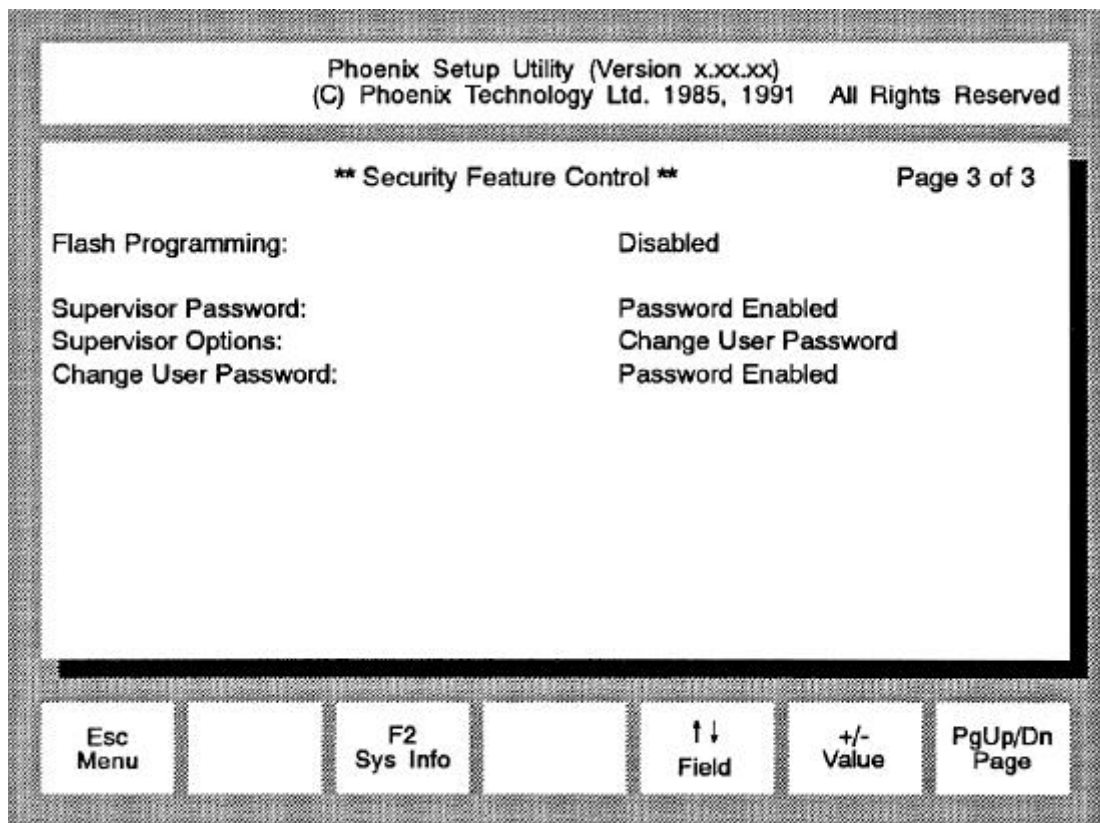
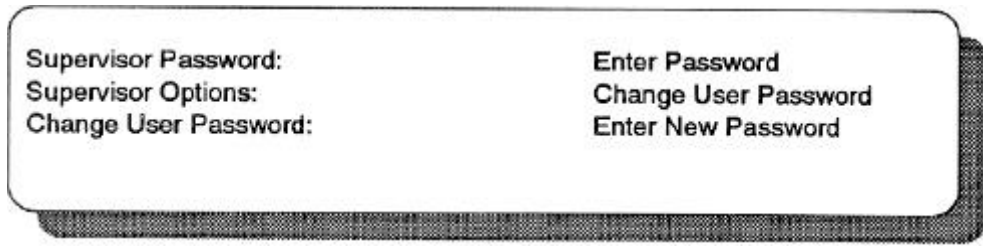


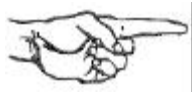
Figure D-3: Third BIOS SETUP Screen

3. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Options: option.
4. Use the **Plus** (+) or **Minus** (-) keys to scroll to the Enable User Password selection and press **<Enter>**.

The SETUP screen password support options will now display the following selections:



5. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the **Change User Password:** option.
6. Type the password you want to use and press **<Enter>**. The screen displays asterisks (*) for each character that you type in.



NOTE: The password may have from 4-7 alphanumeric characters (spaces are not allowed) and is not case-sensitive. For example, if you type the password as "MERMAID" now, and later you type the password as "mermaid" or "Mermaid," the system will still recognize the password.

If the password that you typed is invalid (for example, more than 7 characters), the system responds with:

INVALID Password

If the password that you typed is valid, the system responds with:

Password Accepted

7. Press the **ESC** key to automatically re-boot the system. (There is no need to enter the old password when you are establishing the initial password.)
8. Once your system reboots you will be prompted to enter your password. Type in the password you created in step 6. If you type in an invalid password, you will be notified of the error and re-quested to re-enter the password.



NOTE: The system allows you to make mistakes seven (7) times before locking up. If the system locks up, you will have to turn the system OFF and then turn it ON again.

Once you do type in the correct password and it is accepted, your system completes the booting sequence.

9. Type the new date and press **<Enter>**. The DOS prompt will appear and you can continue as usual.

Changing a User Password

The SETUP program provides two options for changing a user password.

- Change User Password: Enter Old User Password
- Supervisor Options: Change User Password

A typical user (that is, a person not signed on as a supervisor) must use the **Change User Password:** option. This option requires that the user's "old" password be entered first. This procedure is explained below.

A supervisor (that is, a person signed on with the supervisor password) can change a user password without knowing the "old" password through the **Supervisor Options: Change User Password** option (refer to "Using Supervisor Options" for detailed information on this procedure).

As a typical user, you can change a user password through the SETUP program as follows:

1. Activate the SETUP program by pressing **CTRL-ALT-ESC**. Press **PgUp** or **PgDn** until the third SETUP screen is displayed.
2. Use the **Up** (↑) or **Down** (↓) arrow key to move the cursor to the **Change User Password:** option.
3. Use the **Plus** (+) or **Minus** (-) keys to scroll to the **Enter Old Password** selection.
4. Enter your "old" password, as requested and press **<Enter>**.

The system will then display the Enter New Password selection.

5. Enter your “new” password, as requested and press **<Enter>**.

If either the “old” or “new” password that you typed is invalid (for example, more than 7 characters), the system responds with:

INVALID Password

If your password is accepted, the system responds with:

Password Accepted

6. When the system accepts your new password, press the **ESC** key to exit the SETUP screen.

Establishing a Supervisor Password



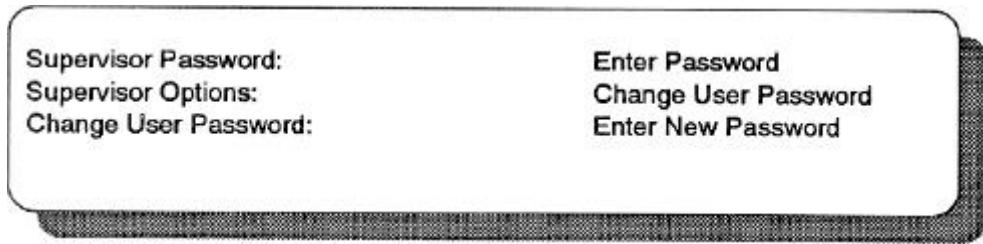
When your system arrives, the supervisor password default will be “power.” You can accept the default password or establish a different supervisor password through the SETUP program.

NOTE: Once user and supervisor passwords have been established, your system is in “protected mode” and either the user password or supervisor password must be entered to gain access to the system. If, in the unlikely event that the user and the supervisor both forget their passwords, call your authorized ALR dealer for information.

To establish a different supervisor password, follow the procedure below:

1. Activate the SETUP program by pressing the **CTRL-ALT-ESC** keys. Press the **PgUp** or **PgDn** keys until the third SETUP screen is displayed.
2. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Options: option.
3. Use the **Plus** (+) or **Minus** (-) arrow keys to scroll to the Enable User Password selection and press **<Enter>**.

The SETUP screen will now display the following selections:



4. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Password: option.
5. Type the password “power” and press <Enter>. The screen displays asterisks (*) for each character that you type in and then displays the message:

Password Accepted

6. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Options: option.
7. Use **Plus** (+) or **Minus** (-) keys to scroll to the Change Supervisor Password selection and press <Enter>. The system responds:

Enter New Password

8. Type the password you want to use and press <Enter>. The screen displays asterisks (*) for each character that you type in.



NOTE: Passwords may have from 4-7 alphanumeric characters (spaces are not allowed) and is not case-sensitive. For example, if you type the password as “MERMAID” now, and later you type the password as “mermaid” or “Mermaid,” the system will still recognize the password.

If the password that you typed is invalid (for example, more than 7 characters), the system responds with:

INVALID Password

If the password that you typed is valid, the system responds with:

Password Accepted

9. Press the **ESC** key to automatically re-boot the system.
10. When the system has rebooted you will be requested to enter your password.
11. Type in the password you created in step 8. If you type in an invalid password, you will be notified of the error and requested to re-enter the password.



NOTE: The system allows you to make mistakes seven (7) times before locking up. If the system locks up, you will have to turn the system OFF and then turn it ON again. Once you do type in the correct password and it is accepted, the following message is displayed:

****Password Accepted****

12. Type the new date and press **<ENTER>**. The DOS prompt will appear and you can continue as usual.



NOTE: When you have signed on as a supervisor, the **Supervisor Options:** option will be available. This option is not accessible if you are not signed on as a supervisor. The next section “Using Supervisor Options” describes all supervisor options and how they are performed.

Using Supervisor Options

When a supervisor logs onto the system using their supervisor password, the following Supervisor Options: become available:

- Change User Password
- Disable User Password
- Enable User Password
- Change Supervisor Password

The following sections describe how to access and use the FLYER SD password support as a supervisor. All supervisor options are performed through the SETUP program:

1. Activate the SETUP program by pressing **CTRL-ALT-ESC**. Press the **PgUp** or **PgDn** keys until the third SETUP screen is displayed.
2. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Options: option.

Change User Password

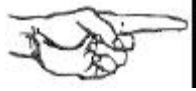
1. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the Supervisor Options: option.
2. Use the **Plus** (+) or **Minus** (-) keys to scroll to the Change User Password selection.
3. Press <**Enter**>. The system responds with the following:

Enter New Password

4. Type in the new password. The system responds with the following:

Password Accepted

5. Press **ESC** to reboot the system.



NOTE: Notice that the system does not require the entry of the user's "old" password as it does in the **Change User Password:** option. This is done so that the supervisor can change a user's password without knowing their "old" password; for example, in the case of an employee who has forgotten their password, or for an employee who has left the company.

Disable User Password

1. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the **Supervisor Options:** option.
2. Use the **Plus** (+) or **Minus** (-) keys to scroll to the **Disable User Password** selection.
3. Press <**Enter**>. The system responds with the following:

User Password Disabled

4. Press **ESC** to reboot the system.



NOTE: When **Disable User Password** is selected, all password security (user and supervisor) is disabled. When you reboot the system, it is in an unprotected mode, and all password support is suspended and remains so until **Enable User Password** is selected.

Enable User Password

When **Disable User Password** has been selected, all password security (user and supervisor) is disabled. This means that the system is in an unprotected mode, and all password support is suspended and remains so until **Enable User Password** is selected. Any user (not just a supervisor) can enable the user password by following the procedure below:

1. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the **Supervisor Options:** option.
2. Use the **Plus** (+) or **Minus** (-) keys to scroll to the **Enable User Password** selection.
3. Press <**Enter**>. The system responds with the following:

Password Enabled

4. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the **Change User Password:** option.
5. Type in the new password.
6. Press **ESC** to reboot the system.

Change Supervisor Password

1. Use the **Up** (↑) or **Down** (↓) arrow keys to move the cursor to the **Supervisor Options:** option.
2. Use the **Plus** (+) or **Minus** (-) keys to scroll to the **Change Supervisor Password** selection.
3. Press **<Enter>**. The system responds with the following:

Enter New Password

4. Type in the new supervisor password. The system responds with the following:

Password Accepted

5. Press **ESC** to reboot the system.



NOTE: When changing a supervisor password, be sure to make a mental note of the change. Once user and supervisor passwords have been established, your system is in protected mode and either the user password or supervisor password must be entered to gain access to the system. In the unlikely event that both the user and the supervisor forget their passwords, call your authorized ALR dealer for information.

Flash EPROM

The FLYER SD is yet another system from ALR to incorporate a “Flash” EPROM for the BIOS. Before explaining just what a “Flash” EPROM is, it may be useful to understand what a standard EPROM is and how it works.

EPROM stand for Erasable Programmable Read-Only Memory. This unique chip can have data stored in it, have the data erased and have new data recorded in its place. However, in order to erase the data, the chip must be exposed to ultraviolet light. This means of erasure is not exactly practical outside of a factory environment, and reprogramming the chip is not possible without special equipment. Until now, users had to physically replace EPROMs in their system with new ones that were programmed at the factory.

A “Flash” EPROM differs from a standard EPROM because it can be erased by simply applying a voltage to it. It can also be reprogrammed with software you can run on your system. This allows users to upgrade the information in their BIOS simply by running a program.

An EPROM is generally used in computers to store system configuration and BIOS information. If it becomes necessary to update your BIOS information, ALR will send you the software and instructions necessary to do so.