

486 SLC Manual

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CHAPTER 1

SYSTEM OVERVIEW

Your WinBook notebook Personal Computer (PC) represents the leading edge of present day PC technology. Despite its amazing compactness, the WinBook incorporates all the functions and features of full sized desktop PCs. This amazing reduction in size and weight was accomplished by taking full advantage of the latest advances in VLSI (Very Large Scale Integration) technology. As a result, the WinBook is extremely light and more reliable due to the reduction in the number of on-board components. The WinBook is IBM AT and MS-DOS compatible and can run most software designed for use on IBM AT systems in an MS-DOS environment including Windows and Windows applications.

The Central Processing Unit

The Central Processing Unit (CPU) is the heart of any computer system, coordinating the flow of data and controlling the hardware in a system.

The WinBook used the CYRIX CX486SLC CPU, which includes a built-in 1 Kbyte cache to increase the speed of data access. The CPU uses a 32-bit internal data bus (path) and 16-bit external data bus. Thus it offers the speed of 32-bit processing while still remaining fully compatible with the 16-bit AT standard. Versions are available with a choice of CPU speed of 25MHz and 33MHz.

The WinBook uses the latest version of the CX486SLC CPU the “E” version. The “E” Version supports the System Management Interrupt (SMI) feature, which in turn gives the WinBook state of the art power management features (see chapter 8, for details).

Key Components

This manual contains full instructions for using all the functions of the WinBook. Some items in the WinBook may vary, such as the hard disk drive type, but all basic functions will be the same. In this section, a brief introduction to the various components in the system are given to give you an overall understanding of the key parts and the names that will be used in this manual to describe them.

The Main System Unit

By the main system unit, we refer to the bottom half of the whole system, i.e. the complete unit excluding the LCD display and the keyboard. Contained within the

main system unit is the power supply, the mainboard, and the storage devices including hard and floppy disk drives and an IC card unit (see below), the battery and all connectors.

Motherboard

The mainboard is contained within the main system unit and is not visible to the user. The mainboard contains the following key components:

- CYRIX CX486SLC 35/33 CPU
- Socket for 80387SX math coprocessor
- 2M (megabytes) of main memory (RAM) expandable to 4M or 8M
- ScatKat MCCA2038A chipset
- AMI BIOS with SETUP program and power management

Storage Devices

- One 3.5" 1.44 megabyte floppy disk drive.
- One 2.5" IDE (AT bus) hard disk drive (capacity varies)
- One PCMCIA Type 1/Type 2 IC card unit

Interface Ports

- One external serial (RS-232) port
- One external parallel (printer) port
- One external keyboard port
- One external analog VGA monitor port
- One docking system expansion port

The Keyboard

- 84 (USA) or 85 (European) key IBM AT compatible keyboard
- Integrated two-button trackball
- Integrated cursor keys and numeric keypad
- LED indicators for Num Lock, Caps Lock and Scroll Lock

The LCD Display

The WinBook comes with a built-in LCD (Liquid Crystal Display) with a resolution of 640 pixels (dots) by 480 pixels. This display takes the place of the monitor in conventional desktop computer systems. The LCD display is fully compatible with

the IBM VGA standard, which means that you will be able to run most software in VGA mode, which provides the highest resolution. VGA mode also allows you to run software, which was designed for EGA and monochrome displays.

Unpacking and Component Checklist

Your WinBook comes in a single carton. When you open this carton for the first time, check that all the items listed below are present:

1. One WinBook Computer.
2. One AC adapter and charger.
3. One AC power cable.
4. One battery pack.
5. Three 3.5" VGA Driver and Utility program diskettes.
6. One dual keyboard cable adapter.
7. This user's manual.

If any of the above items are not present, please contact the dealer from whom you purchased your system immediately.

Software Requirements

Please note that the WinBook comes in several configurations, some of which may include the MS-DOS operating system. Other configurations may also include certain software packages. The WinBook is compatible with IBM PC/AT standard and can run most software designed for that standard. Note that all configurations included a VGA driver and utility diskette, which is specifically for use with the WinBook.

Operating System

A (Disk) Operating System, abbreviated as DOS or OS, is necessary to be able to use your computer. This software controls the basic manipulation of data between the components of the computer and no other software can be run without it. MS-DOS, OS/2 and UNIX are examples of common operating systems and you must load one of these operating systems before you do anything else. Microsoft Windows is a graphical user interface (GUI) which takes over many of the functions of the operating system and is loaded on top of MS-DOS.

Applications Software

Applications software refers to software, which performs some task, such as a word processor or a spreadsheet. What applications software you should buy depends entirely on what you wish to do.

Most software comes in different versions according to the operating environment that it is to be used on; for example given software might come in a DOS version, an OS/2 version and a Windows version. You must use the correct version according to the operating system that you have loaded. Note that although Windows is loaded on top of DOS, only Windows version software will run in the Windows environment.

Most software is readily available in computer stores or by mail order and you should consult with your local dealer for advice on what software to buy.

Chapter 2: Basic Operation

Setting Up your System

Because the WinBook comes as a complete integrated unit, the setup procedures are quite simple, and even if you are new to computers, by following the instructions given here, you will soon be up and running. We assume that you will be running the WinBook off the AC power adapter when you use your system for the first time.

Connecting the Power Adapter

Turn the WinBook so you are looking at the rear of the system. Locate the power socket according to the diagram below.

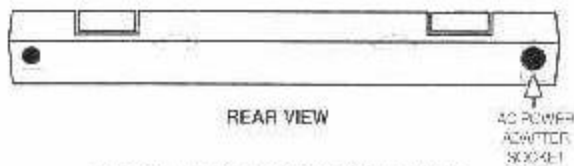


Figure 2-1 Locating the Power Adapter Socket

REAR VIEW

Figure 2-1 Locating the Power Adapter Socket

Plug the cable attached to the power adapter into this power socket. Plug the power cable into the socket on the power adapter, and then plug the other end of the power cable into an AC power outlet of any voltage from 90V to 260V. It is not necessary to select any particular voltage as the power adapter has an auto-select feature.

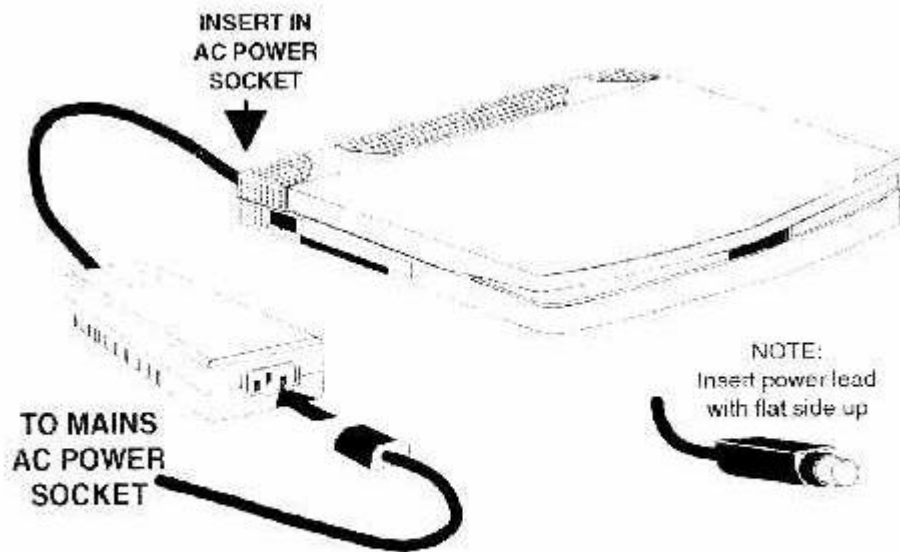


Figure 2-2 WinBook with Power Adapter Connected

Figure 2-2 WinBook with Power Adapter Connected

Opening the LCD Screen

Having connected the power adapter, turn the system so you are looking at the front. Slide the latch on the front of the system to the right, as illustrated below.

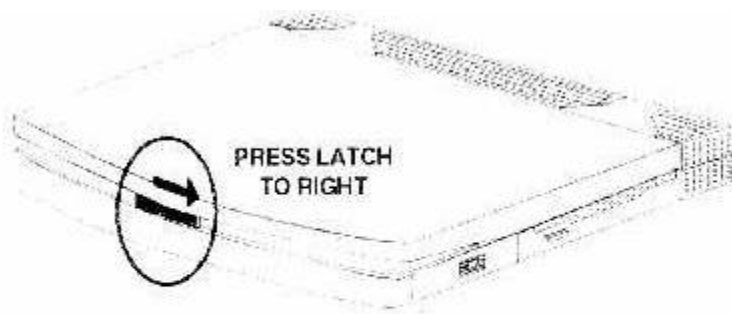


Figure 2-3 Opening the LCD Screen

Figure 2-3 Opening the LCD Screen

Raise the LCD screen until it is in the vertical position. You may then push the LCD screen slightly further back or forward according to your preference. The special hinge of the LCD allows you to position the screen at any angle and it will stay fixed at that angle. Usually to obtain the clearest image, the LCD screen should be positioned so you can look directly into it at 90 degrees, as shown in the illustration below.

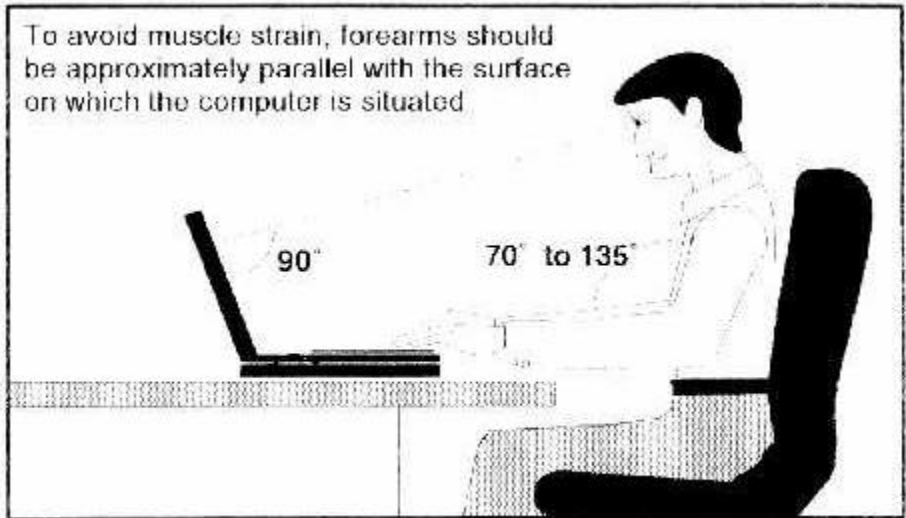


Figure 2-4 Ideal Seating Position for Maximum Comfort

Figure 2-4 Ideal Seating Position for Maximum comfort

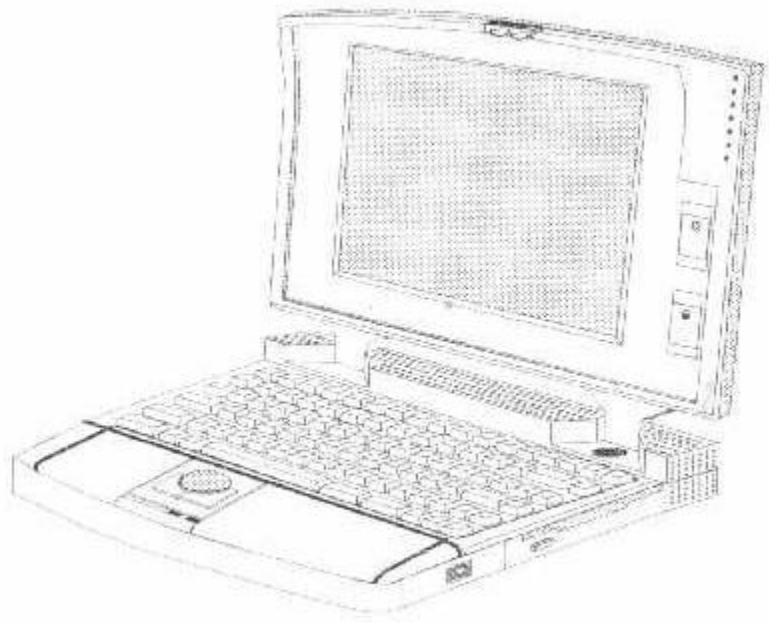


Figure 2-5 WinBook Set Up and Ready for Use

Figure 2-5 WinBook Set Up and Ready for Use

Turning the Power On

Locate the Power ON/OFF switch at the rear of the left side of the WinBook, as shown in the illustration below.

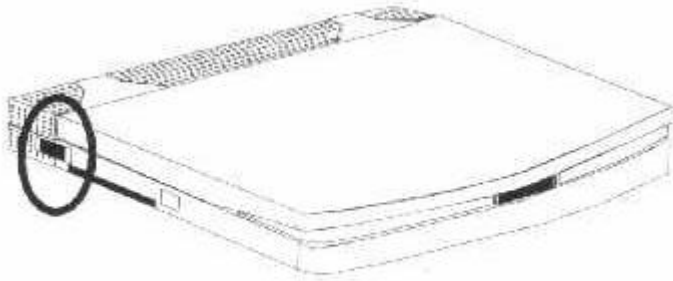


Figure 2-6 Locating the Power ON/OFF Switch

Figure 2-6 Locating the Power ON/OFF Switch

Press the switch and the Power ON LED indicator © on the top of your WinBook Will illuminate. The backlight of the LCD screen will also come on and the system will then start to boot up.

And that is all it takes to get started with your WinBook!

User Controls

In order to get the most out of your WinBook it is essential that you have a good understanding of the controls and indicators on the system. In this section, a detailed explanation of all the controls on your WinBook is given and we recommend that you read the whole section through before you start using your system. Please refer to the illustration on the following page for a key to the location of the user controls and LED indicators.[SX/DX 2-4]

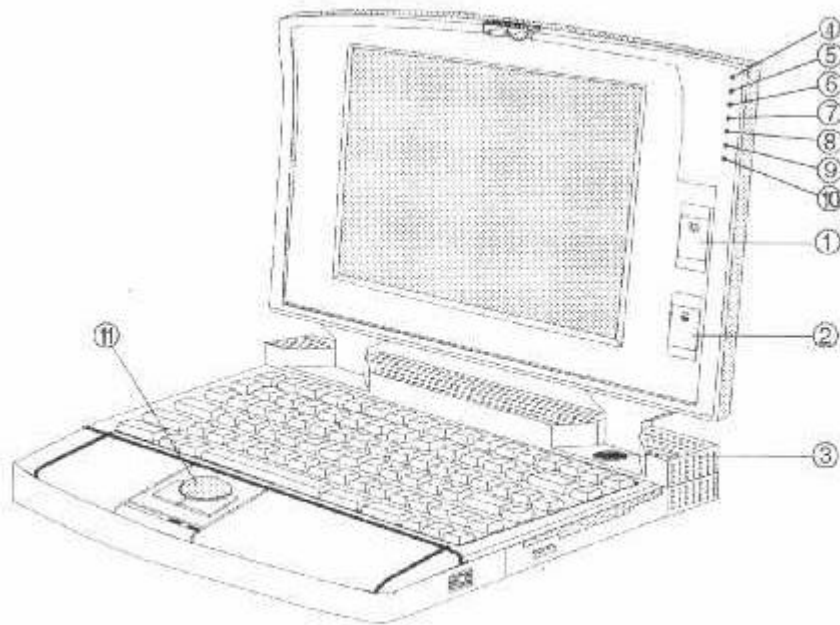


Figure 2-7 Key to User Controls and LED Indicators

Fig. 2.7 Key to User Controls and Indicators

1 – LCD Brightness Control

The LCD brightness control can be used to increase/decrease the brightness of the display. Slide the control up to increase brightness, down to decrease brightness. The setting of the brightness control will depend on the current lighting conditions and is important for obtaining the clearest possible image.

If nothing appears on the LCD screen when you turn on your computer, it may be because the brightness control is set at minimum brightness and you should always check the setting of this control first.

2 – The LCD Contrast Control

The Contrast control acts in exactly the same way as the contrast switch on a conventional monitor. By adjusting the contrast control you can adjust the comparative brightness between normal text and highlighted text. You can adjust the contrast switch during use to achieve the

optimum setting according to each individual software.[SX/DX 2-5]

3 - The Suspend Switch

The Suspend switch is situated on the top panel beneath the right hinge of the LCD display.

The Suspend switch is a power saving device that is useful when running your system off batteries. When you press the Suspend switch, the display will become blank and to all intents and purposes your WinBook will appear to have been turned off. In this state, your system is using a minimum of power. When in suspend mode, the Suspend LED on the LCD screen will illuminate.

To resume, simply press the Suspend switch again and the display will be returned exactly as it was before. The Suspend switch allows you to save power without having to turn your WinBook off and then on again, and is extremely useful when you wish to take a short break from what you are doing.

The LED Indicators

On the right side of the LCD screen is a row of seven LED indicators which indicate the status of certain functions. These are detailed below.

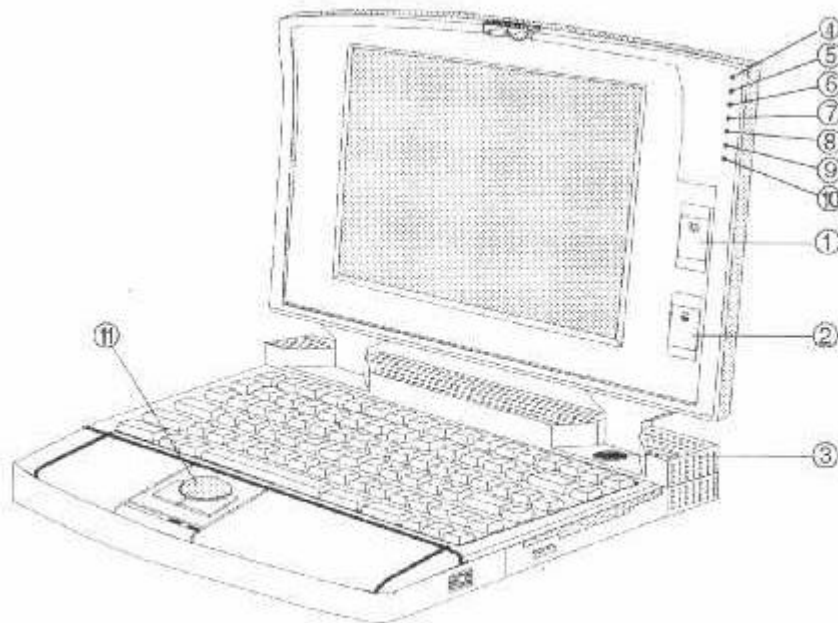


Figure 2-7 Key to User Controls and LED Indicators

Fig. 2.7 (from page 2.6)

4 – Power LED

The Power LED will be illuminated when your system is turned on, and will remain illuminated until you turn the power off. Note that the power Led is also visible on the top of the LCD panel so that when the LCD is in the closed position you can still see whether the power to the computer is turned on or not.

Note that the Power LED also functions as a battery low indicator. When the battery power is low, the Power LED will flash.

5 – FDD LED

The FDD (Floppy Disk Drive) LED will illuminate whenever data is being read from or written to the floppy disk drive installed in your system. As long as the floppy disk drive is not being accessed the FDD LED will remain unlit.

6 – HDD LED

The HDD (Hard Disk Drive) LED will illuminate whenever data is being read from or written to

the hard disk drive installed in the system. As long as the hard disk drive is not being accessed the HDD LED will remain unlit.

7 – Suspend LED

The SUSPEND LED will illuminate when the system has entered into Suspend mode by pressing the Suspend switch on the computer. Suspend mode is a power saving mode which can be entered to save battery power during usage.

8 – Num Lock LED

The NUM LOCK LED refers to the NUM LOCK key on the WinBook's keyboard. On a conventional keyboard, this LED is usually situated on the keyboard itself. When illuminated, the NUM LOCK LED indicates that the NUM LOCK key has been pressed, in which case the numerical keypad will be in numeric mode. The NUM LOCK will go off when the NUM LOCK key is pressed a second time. Please refer to the chapter on the keyboard for details of the NUM LOCK key.

9 – Scroll Lock LED

The SCROLL LOCK LED refers to the Scroll Lock key on the WinBook's keyboard. When illuminated, this indicates that the Scroll Lock key has been pressed. The SCROLL LOCK LED will go out when the Scroll Lock key is pressed a second time. Please refer to the chapter in this manual on the keyboard for details of the Scroll LOCK key.

10 - Caps Lock LED

The Caps Lock LED refers to the Caps Lock key on the WinBook's keyboard. On a conventional keyboard, this LED is usually situated on the keyboard itself. When illuminated, the Caps Lock LED indicates that the Caps Lock key has been pressed, in which case all letter keys will be typed in upper case (capital). The Caps Lock LED will go off when the Caps Lock key is pressed a second time. Please refer to the chapter in this manual on the keyboard, for details of the Caps Lock key.

11 - Built-in Trackball

The built-in trackball can be used to control cursor movement on the screen in much the same way as a mouse. The two buttons act as the left and right mouse buttons. The function of the two buttons will depend on the software being used, though in general, the left button is used to execute a command or select an item and the right button is used to cancel or quit a function.

Chapter 3: Data Storage Devices

INTRODUCTION

The data storage devices included on your WinBook consist of a 1.44 Megabyte (M) 3.5" floppy disk drive; one hard disk drive (optional); one Type 1/Type 2 IC card slot. It is via the disk drives and IC card slot that you can load different programs to run on your computer, and store the data that you create.

In this chapter we give a brief introduction to the use of floppy disk drives and diskettes, hard disks and IC cards for those of you who are new to computing. If you are an experienced computer user you will probably already be familiar with this information, and may skip this chapter. If you are a new user, then we recommend that you read this chapter to get an overall understanding of the basic use of disk drives and diskettes.

Floppy Disk Drives and Diskettes

Floppy disk drives are so called because they use flexible diskettes, which can be inserted and taken out as required. They can be broadly divided into two types – 5.25" and 3.5". This measurement refers to the size of the diskette that is used with each type, through your WinBook uses only the smaller 3.5" drive. This does not impose any limitation on the software you can use, since all popular software packages are available in both 5.25" and 3.5" packages.

The location of the floppy disk drive is shown in Figure 3-1.

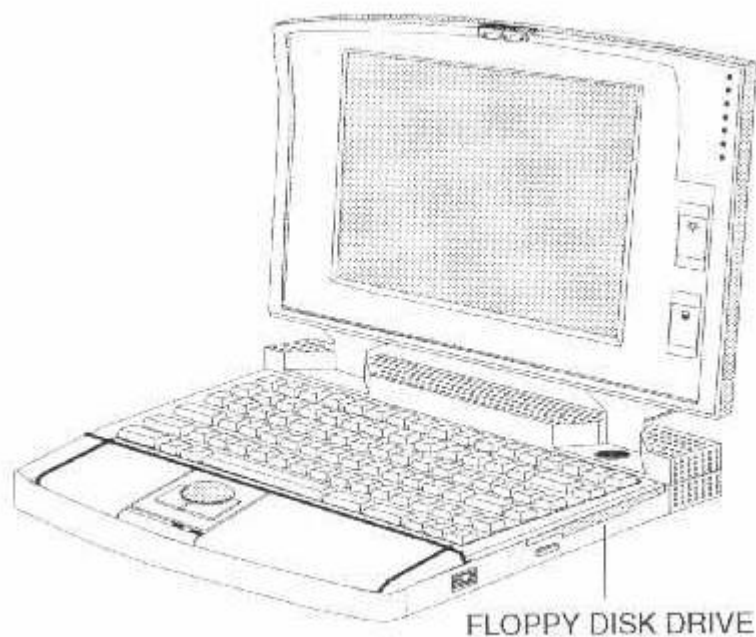


Figure 3-1 Locating the Floppy Disk Drive

Figure 3-1 Locating the Floppy Disk Drive

3.5" Disk Drives and Diskettes

3.5" floppy disk drives are smaller and have a larger capacity than 5.25" disk drives. 3.5" disk drives come in two capacities – 720Kbytes and 1.44M. The floppy disk drive installed in your WinBook is a 1.44M drive. In order to be able to take advantage of the full 1.44M capacity, high-density diskettes must be used. Such diskettes are marked 2HD.

Functionally, 3.5" drives operate in exactly the same way as 5.25" disk drives, though the diskettes used are different in many respects.

3.5" floppy diskettes come in a hard plastic case and are therefore far less susceptible to damage. The magnetic surface of the diskette is not exposed, being covered by a sliding metal cover, which is automatically opened when inserted into the disk drive. Rather than having a notch which must be covered by a sticker to make them read only, they come with a tab which can be set as read only or read/write.

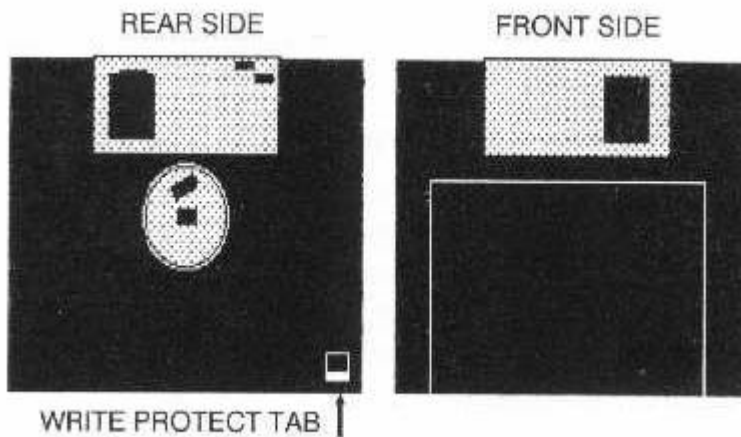


Figure 3-2 3.5" Diskette

Figure 3-2 3.5" Diskettes

Formatting Diskettes

When you purchase any type of diskette it is unformatted, and it cannot be used until it has been formatted. An unformatted diskette can be compared to a record before the groove has been engraved on it. All diskettes must first be formatted before they can be used to store data. If you insert an unformatted diskette into a floppy disk drive you will get an error message when you try to write to the diskette.

Formatting diskettes is a simple process and is achieved with the MS-DOS FORMAT command. For details of how to use this command, please refer to the chapter in this manual introducing MS-DOS or, for more complete information, to your MS-DOS user's manual.

IC Cards

IC cards are the latest advances in storage media, supporting storage of large amounts of data on a credit card sized unit. IC cards are divided into Type 1 and Type 2

categories and both are supported by the IC card interface installed in your WinBook, which is a 68-pin type fully compatible with the PCMCIA standard. Some Type 2 IC cards are actually a combination of hardware and software, a fax/modem IC card for example, which includes the fax modem hardware and the software to drive it.

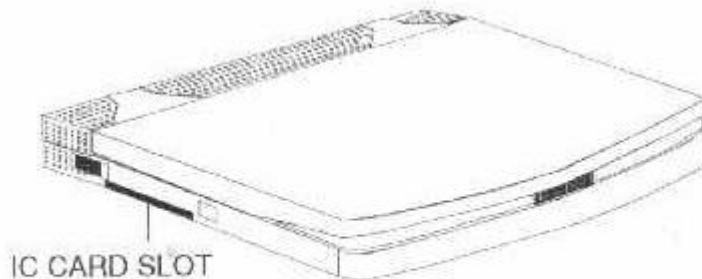


Figure 3-3 Locating the IC Card Slot

Figure 3-3 Locating the IC Card Slot

IC cards are simple to use and should be inserted directly into the IC card slot, which is situated next to the power switch on the left side of the WinBook. As you insert the IC card, a push button will protrude from the IC card unit. To remove the IC card press this button in and the card will be pushed partly out. You may then extract the card from the slot.

Hard Disk Drives

Hard disk drives are also commonly known as fixed disk drives and Winchester disk drives. In this manual we shall refer to them always as hard disk drives. The main difference between hard disk drives and floppy disk drives is that the disks in hard disk drives are not removable. Thus, hard disk drives have no need for diskettes since the disks are built into the unit

Hard disk drives have a much greater storage capacity than floppy disk drives, and data can be accessed much faster. They are also much more convenient because it is not necessary to keep changing diskettes to load different programs.

Because of their greater storage capacity, you can copy all your commonly used programs from the various floppy diskettes onto your hard disk drive. The, whenever you want to use a program, you simply call up that program from the hard disk. You can also make hard disk drives “bootable”, which means that you can load MS-DOS directly from the hard disk and do not need to insert your MS-DOS diskette into a floppy disk drive every time you turn on your computer. The hard disk drive included in the standard configuration of the WinBook is a 2.5” AT bus version with various options on the storage capacity.

Taking Care of Hard Disk Drives

Since the disks in a hard disk drive are unremovable there is no risk of damage as with floppy diskettes. The drives themselves; however, are highly sensitive units. The hard disk drive installed in your WinBook is specially designed to be shock resistant since you will inevitably be moving your system around. The drive also features auto-park capability, which means that the sensitive magnetic heads are automatically locked in position when power is turned off, greatly reducing the change of damage. Despite this, every care should be taken to avoid subjecting your WinBook to heavy shocks or blows, which may result in the hard disk drive being damaged. Hard disk drives are sealed units and are not user serviceable. If used in the normal way the hard disk drive in your WinBook should give several years of trouble-free life.

Preparing Hard Disk Drives

Hard disk drives have to be formatted in the same way as diskettes before you can save data on them, though hard disk drives must undergo low level formatting followed by high level formatting. The drive in your WinBook has already been low level formatted. You can use the DOS FORMAT command to format your hard disk drive, and DOS also provides a special command, FDISK, for configuring your hard disk into partitions. Partitions are areas of a hard disk, which function as a totally separate disk drive. For instance, with an 80Mbyte hard disk drive you might wish to divide that drive into two partitions of 40Mbytes each. In this case, the first partition becomes the C: drive and second partition the D: drive. To all intents and purposes the two partitions function as totally separate disk drives, although physically they are of course the same drive.

Partitions must be created when you first format the hard disk drive. You cannot add in partitions once you have saved any data on your hard disk drive, so you must decide what partitions you want when you first configure your drive. If you want to change these partitions later you will

have to reformat the disk drive, destroying any data existing on it.



Formatting Hard Disk Drives

WARNING

The hard disk drives on certain WinBook configurations that include the MS-DOS operating system will have already been formatted, and the software loaded. Please be certain that your unit is not already formatted before continuing.

To be able to boot up your system from the hard disk drive you must prepare the hard disk drive and install the operating system on it. To do this you will have to use the following commands in MS-DOS:

- a. The FDISK command to partition the hard disk drive.
- b. The FORMAT command to high level format the hard disk drive and make it bootable.

Both these commands are external MS-DOS commands and can be run from the MS-DOS diskette(s).

NOTE

The hard disk drive installed in your WinBook has been low level formatted by the manufacturer so it is not necessary to low level format the hard disk drive.

How To Start FDISK

1. Place the MS-DOS system diskette in floppy disk drive A:
2. Turn on your computer and boot up the system with MS-DOS.
3. Insert the MS-DOS diskette containing the FDISK.COM command in drive A:
4. At the DOS prompt type

FDISK <Enter>

The FDISK main menu will appear on your screen as shown below.

Disk Options

Current fixed disk drive: 1

Choose one of the following:

1. Create DOS Partition or Logical DOS drive
2. Set Active Partition
3. Delete DOS Partition
4. Display Partition Data

Enter choice: [1]

Press ESC to return to DOS

Most of the FDISK menus display a default value. To choose the default value, press the <Enter> key.

Using FDISK to Create Partitions

To create a partition select the first item in the FDISK main menu, and the following menu will appear (if no extended partitions exist, the third option is not displayed):

Create DOS Partition

Current fixed disk drive: 1

1. Create Primary DOS Partition
2. Create Extended DOS Partition
3. Create Logical DOS Drive (s) in

the Extended Dos Partition

Enter choice : [1]

Press ESC to return to FDISK Options

You must create a primary MS-DOS partition first before you can create any extended MS-DOS partitions on your disk. In most cases, you will need only one MS-DOS partition for your entire disk.

To create a primary MS-DOS partition, press the <Enter> key to accept the default selection (1).

To **Create Primary DOS Partition** menu appears next:

Create Primary DOS Partition

Current fixed disk drive: 1

Do you wish to use the maximum size?

For a DOS partition and make the DOS

Partition active (Y/N)&ldots;&ldots;&ldots;&ldots;? [Y]

Press ESC to return to FDISK Options

To use your entire hard disk for MS-DOS you will use the FDISK program only once to create the primary MS-DOS partition. Press the <Enter> key to accept the default selection (Y).

FDISK then displays the following message.

System will now restart

Insert DOS diskette in drive A:

Press any key when ready. . .

Put your MS-DOS disk in drive A and press any key to restart MS-DOS. Now that you have created your MS-DOS partition you must format your hard disk so the MS-DOS can use it.

NOTE

Note that if you created a partition by not using the default values shown above you must make it active to enable you to boot from your hard disk drive.

Formatting Your Hard Disk Drive

After partitioning your hard disk drive with the FDISK command you must format the hard disk using the MS-DOS FORMAT command. Insert the MS-DOS diskette containing the FORMAT.COM command in drive A: and type the following command:

```
FORMAT C:/S<Enter>
```

Note

You must use the /S switch when formatting to transfer the MS-DOS system files onto the hard disk and make it bootable.

When you format a hard disk, FORMAT prompts you to verify the volume label:

Enter current Volume Label for drive

x:

If your hard disk does not have a volume label, press the <Enter> key. Notice; however, that if your hard disk has never been formatted before, or if it has a bad boot sector, FORMAT will not prompt you for a volume label.

If the volume label that you enter does not match the label on the hard disk, FORMAT displays the following message:

Invalid Volume ID Format failure

Otherwise it continues:

WARNING, ALL DATA ON NON-REMOVABLE
DISK

DRIVE X: WILL BE LOST!

Proceed with Format (Y/N)? _

If you want to format your hard disk drive, type Y (for Yes) and press the <Enter> key. If you do not want to format your hard disk, type N (for No) and press the <Enter> key.

When formatting is complete, FORMAT displays a message showing the total disk space, any space marked as defective, the total space used by the operating system (when you use the /S switch), and the space available for your files.

Your hard disk is now formatted and the system files have been transferred to the hard disk drive. You will now be able to boot your computer from the hard disk, and will no longer need to insert an MS-DOS diskette in the A: drive to boot.

Note: The above procedure is valid for MS-DOS version 4.0 and above. MS-DOS 3.3 limits the maximum size of a single partition to 32MB, so a 60MB drive will have to be split into a least two partitions when using MS-DOS version 3.3.

SLC CHAPTER 4: USING THE KEYBOARD

In order to get the most out of your computer, it is essential that you have a good understanding of your keyboard. Correct keyboard usage can save you a lot of time when typing data into your computer, and will make all your computing tasks more enjoyable.

The Keyboard on your WinBook is compatible with a conventional PC keyboard, and contains all the same functions. The layout, however, is slightly different. If you are familiar with a conventional PC keyboard, you will soon get used to the WinBook keyboard. Read through this chapter carefully to make sure you are well acquainted with the special function keys and key combinations.

The illustration below shows the layout of the WinBook keyboard.



Figure 4-1 WinBook Keyboard Layout

Fig. 4-1 Keyboard Layout

The Typewriter Keys

The typewriter keys make up the main block of keys on your keyboard, and it is these keys that you will use the most. As is obvious from the name, these keys are basically the same as found on a standard typewriter, with a few extras especially for computer use. The layout of the alphanumeric part of the keyboard (i.e. the part with the letters and numbers on it) is the same as a standard QWERTY Typewriter keyboard, and these are light colored. There are also darker colored keys, some of which have the same functions as typewriter keys (e.g. the Tab key and the Caps Lock key), some of which are not found on a typewriter, and some of which function both as typewriter keys and computer function keys. These will be explained individually later in this section.

If you are used to using a standard typewriter you will have no difficulty getting used to your computer keyboard. However, there are some important differences between using a typewriter and a computer keyboard.

- All the keys are “**typematic**” which means that they repeat as long as you hold them down. Many modern electric typewriters are also typematic, but manual typewriters are not.
- **The space bar** appears to work the same as on a typewriter, but there is an important difference. When you press the space bar you will see a space on your screen, just as when you press a typewriter space bar there is a space on the page. But a computer recognizes a space as a character, and treats it accordingly. Thus, especially in programming or when entering commands, the presence or absence of a space can make a lot of difference.
- The lower case **L** (l) and the number on (1) are not interchangeable as they are on a typewriter.
- The upper case **O** (O) and the zero (0) are not interchangeable as they are on a typewriter.

The darker colored keys to the right and left of the alphanumeric keys are detailed individually below.

The Shift Keys

The two **shift keys**, one on the left and one on the right, function exactly as typewriter shift keys. When you press either one of the shift keys and hold it down, any letters you type will be in upper case. As soon as you release the shift key, the letters will again be in lower case. Note that in MS-DOS and many other programs the Shift key can be used in combination with other keys for some special functions. Please see the section on Special Key Combinations in this chapter.

The Caps Lock Key

The **Caps Lock key** is a toggle key, which means that when pressed it stays engaged until pressed a second time. The Caps Lock LED indicator on the front panel of the LCD display will illuminate when the Caps Lock key is engaged. The Caps Lock key is somewhat different from that on a typewriter. It only affects the alpha characters (the letters from A to Z). Punctuation and symbols must be typed with the Shift key held down even when Caps Lock is engaged.

The Tab Key

The **Tab key** functions in the same way as on a typewriter, advancing the cursor to the next tab position. Pressing the Tab key in conjunction with the Shift key will tab to the left.

The Backspace Key

In MS-DOS and in most software, the **Backspace key** moves the cursor one space to the left, simultaneously deleting the character to the left of the cursor. The function of the backspace key may be different in some software.

The Enter Key

When typing in data, the **Enter key** functions in the same way as the carriage return key on a typewriter. It advances the cursor one line and returns the cursor to the left-hand side of the screen. In MS-DOS and most other software packages the Enter key must be pressed to execute a command.

The Control (Ctrl) Key

The **Ctrl key** is always used in combination with one or more other keys to perform some special function. Its use will vary from program to program. Please also see the section on Special Key Combinations in this chapter.

The Alternate (Alt) Key

The **Alt key** is always used in combination with one or more other keys to perform some special function. Its use will vary from program to program. Please also see the section on Special Key Combinations in this chapter.

The Escape (Esc) Key

The use of the **Esc key** will vary depending on the program you are using. In MS-DOS, and in many other software packages, the Esc key is used to cancel a command or exit from a program.

The Function Keys



Figure 4-2 The Function Keys

Fig. 4-2 The Function Keys

The **Function keys** are labeled **F1 to F10** with F1 and F2 keys doubling as **F11 and F12**. What the function keys do will depend entirely on what software you are using. Each software package may or may not allocate a certain function to some or all of the function keys. In this case you will have to consult the manual of that particular software to find out what the function of each key is.

To use the F1 key as F11, press and hold down the **Fn (Function)** key and then press the F1 (F11) key. Similarly, to access F12, press and hold the Fn key and press the F2 (F12) key.

In MS-DOS the **F1 function key** can be used to retype the last command issued one letter at a time. The **F3 function key** can be used to retype the last command issued with a single keystroke.

The Cursor Control Keys

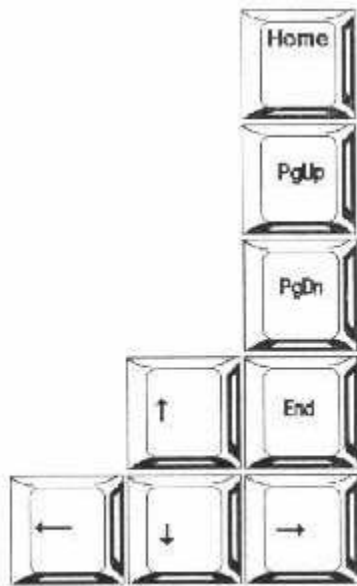


Figure 4-3 The Cursor Control Keys

Fig. 4-3 The Cursor Control Keys

The next group of keys is mainly used to control the movement of the cursor about the screen. The **Cursor Up, Cursor Down, Cursor Left and Cursor Right** are used by most software packages to move the cursor one space in the relevant direction. The **PgUp** and **PgDn** keys are usually used to scroll through data up or down one page (or screen) at a time, though their use may vary with different software. The **Home** and **End** keys are usually used to go to the beginning and end of a line, screen or document depending on the software. Please refer to your software applications manuals for the precise functions of these keys.

In MS-DOS the **Cursor Left key** acts the same as the Backspace key, deleting the characters to the left of the cursor. The **Cursor Right key** functions the same as the F1 key, retyping the previous command one letter at a time.

Special Function Keys

The Insert Key

The **Insert key** is a toggle key and in MS-DOS and many other software packages, is used to alternate between Insert and Overwrite modes. In Insert mode characters are placed in front of existing text; in Overwrite mode characters type replace the original text. Many software packages assign other special functions to the Insert key, details of which will appear in the relevant manual.

The Delete Key

In MS-DOS and many other software packages the **Delete key** is used to delete the character at the present cursor position.

The Prt Sc (Print Screen)/SysRq Key

When in DOS and most programs running in text mode, the **Prt Sc key** can be pressed to obtain a hard copy printout of the present screen display. The **Sys Rq key** is rarely used but may be assigned some special function in some software.

The Scroll Lock Key

The **Scroll Lock key** is a toggle key. When engaged, the Scroll Lock LED indicator to the right of the LCD display will be illuminated. This key has no function in MS-DOS and its function, if any will depend on the individual software package.

The Pause/Break Key

This key can be pressed to pause execution of some programs and may have other uses in some software.

The Numeric Keypad

The final group of keys on your keyboard is the Numeric Keypad. On a conventional keyboard, the numeric keypad is usually a separate block of keys. On the 486SX/DX-WinBook these keys have been integrated into the main typewriter keys.

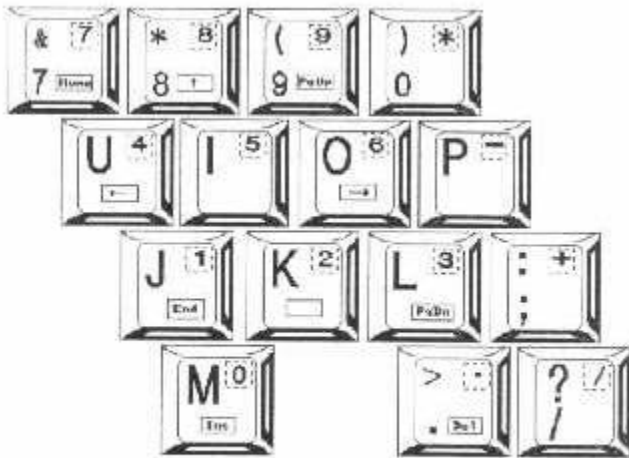


Figure 4-4 The Integrated Numeric Keypad

Fig. 4-4 The Integrated Numeric Keypad

NUM LOCK plus the Numeric Keypad

The keys in this group have two functions depending on whether the Num Lock Key is

toggled On or OFF, and whether the Fn key has been pressed.

When Num Lock is toggled on (the Num Lock LED in the control panel will illuminate), the M, J, K, L, U, I, O, 7/&, 8/*, and 9/(keys will function as 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 respectively. Thus, with the NUM LOCK toggled ON, if you press the “k” key a 2 will appear on your screen just as if you pressed the five key in the typewriter keys. In addition, the ./> key becomes “.” (decimal point); the //? key becomes “/” (division sign); the ;/: key becomes “+”; the P key becomes “-” (minus); and the 0/) key becomes “*” (multiplication sign). With Num Lock on the numeric keypad is especially convenient for users who frequently need to use the keypad as a calculator function.

To return these keys to their normal letter functions, simply press Num Lock a second time. The Num Lock LED will go out indicating that the Num Lock function has been terminated.

Fn plus the Numeric Keypad

If you press these keys with the **Fn** key depressed then a different function is accessed. If you press and hold the **Fn** key the ./>, M, J, K, L, U, O, 7/&, 8/* and 9/(keys become Del, Ins, End, Cursor Down, PgDn, Cursor Left, Cursor Right, Home, Cursor Up and PgUp keys respectively. The functions accessible by pressing the function key are printed on the relevant keys enclosed in a box, and duplicate the functions of the cursor keys described earlier.

Hot Keys

. <Ctrl> <Alt> F8

Toggles the display of screen images between normal contrast mode and automap contrast mode. In automap contrast mode, your computer adjusts the contrast automatically for certain applications software, such as Microsoft Windows.

<Ctrl> <Alt> F9

Toggles the display of screen text between normal video mode (black text on white background) and reverse video mode (white text on black background).

<Ctrl> <Alt> F10

If you connect an external CRT VGA monitor, press and hold down the <Ctrl> and <Alt> keys and press the F10 function key to toggle between Auto, LCD, CRT and SimulSCAN display modes. In Auto Mode, if an external CRT is connected, the display will automatically switch to the CRT monitor; in LCD mode, the display will appear only on the LCD; in SimulSCAN mode, the display will appear on both displays at the same time.

Common Key Combinations

As we have already mentioned, in addition to their individual functions, some keys can be used in combination with other keys to provide special functions. And, as in the case of the **Alt** and **Ctrl** keys, some keys only function when pressed in combination with other keys. Before reading about some of the more common key combinations, however, please remember one thing. As you start to use various software packages you will quickly learn

that each software has its own rules for the keyboard. Although many of the keys, especially the typewriter keys and cursor movement keys, have these same functions in most different software packages, some keys, especially the function keys F1 to F12, will often have completely different functions. For example, one software may use the F5 function key to delete a block of text, and another software might use the F5 function key to insert a block of text.

The special key combinations that we explain here are those that are commonly used by MS-DOS, your computer's operating system software. Since MS-DOS loads every time you turn on your computer before loading the particular applications software you wish to use, the better you know MS-DOS the easier your computing operations will be. Also, some of these key combinations will take effect even when you are using other applications software.

<Ctrl> <Alt> - The Warm Boot

To "boot up" your computer means to turn on your computer and load the operating system. When you first turn on your computer each session by turning on your computer's power switch, this is known as a cold boot. Sometimes when you are using your computer, it will "hang", which means that the display will freeze and nothing you type on the keyboard seems to have any effect. This is a fairly uncommon occurrence and is not a cause for panic. It can be due to any number of reasons such as a "bug" or defect in the software package you are using. If this happens, you can turn off your computer for a few seconds using the power switch. Then when you turn your computer on again, everything should be back to normal.

This is rather inconvenient, however, and a far quicker way is by using the "warm boot". All you have to do is press and hold the <Ctrl>, <Alt> and keys and your computer will reboot without you having to turn your computer on and off again.

Your computer will reboot whenever you press the <Ctrl> <Alt> keys no matter what software you are using. Therefore, make sure you only use it when necessary as it erases the current contents of RAM. If you are editing a document and have not saved it to floppy or hard disk, pressing <Ctrl> <Alt> will erase the document from memory and you will have to start again.

<Ctrl> S or <Ctrl> <Pause> - Pause Scrolling

Sometimes when you display data on your screen it will scroll off the screen faster than you can read it. To pause the scrolling of data, you need to press <Ctrl> S or <Ctrl> <Pause>. When you are ready to resume scrolling press <Ctrl> S or <Ctrl> <Pause> again.

<Ctrl> C – Interrupt a Command

This command is used to terminate a command already executed. When the command has been terminated you will be returned to the DOS prompt.

You will frequently use the special key combinations detailed above as you get accustomed to using MS-DOS and other programs. Please note that we have only explained a few of the most commonly used key combinations here, and for further details you should refer to your MS-DOS user's manual.

SLC Chapter 5 Basic MS-DOS Usage

CHAPTER 5

BASIC MS-DOS USAGE

Introduction

If you are a newcomer to computing you may be a total loss as to how to start using your computer. This section is especially for you. Here we explain what MS-DOS is, how it interacts with your computer, and why you need it no matter what software you intend to use. We also explain how to use the basic MS-DOS commands that are essential for managing the information stored on your hard disk and diskettes.

Your MS-DOS software comes with a complete user's manual with comprehensive instructions on how to use the program and it is this manual you will have to read to really understand all about MS-DOS. If you are new to computing, we strongly recommend that you take some time to read the first few chapters of the MS-DOS manual to gain a basic knowledge of PC usage. However, the information we provide here should be enough to get you started, and once you are started, you will quickly find out that computing really is as easy as everyone says it is.

What is MS-DOS?

MS-DOS stands for Microsoft Disk Operating System. Microsoft is the name of the company that produces the program and Disk Operating System (DOS) is a somewhat abbreviated description of what the program does. For the rest of this manual we shall refer to it simply as DOS since there are operating systems available from other companies besides Microsoft. DOS is also known as the system software or the operating system. What you call it is not important but what is important is this – You can do nothing with your computer before you have loaded DOS. No matter what software you want to use, be it WordStar, Lotus 1-2-3, Dbase III, a computer game, or even something that you have written yourself, you will not be able to load that software before you have loaded DOS.

The essential part of the DOS program acts as a bridge between your hardware and your software. It communicates with the hardware and controls the flow of information to and from your keyboard, disk drive and monitor. It also provides you with the tools for manipulating the data stored on your computer, allowing you to copy and delete files, see what files you have stored, rename files etc. etc. In short, no matter whether you like it or not, you are going to have to get used to using DOS. DOS includes many commands you may never use depending on what you intend to use your computer for, but you will use some commands every time you turn on your computer.

Loading Dos

There are basically two ways to load DOS – the first is to load it from a floppydiskette, the second is to load it from a hard disk. To load Dos from a hard disk you must have first installed it from the original floppy diskette onto the hard disk. To load DOS from a diskette you simply place the DOS system diskette in your floppy disk drive and turn on your computer. Note that we say the DOS

system diskette. Earlier versions of DOS came on a single diskette, but the latest versions such as 3.3, 4.00 and 4.01 consist of several diskettes. The reason for this is that more commands and features have been added, making it impossible to store everything on a single diskette.

When you load DOS from a floppy, the system files will be read from the diskette and the following will appear on your Screen:

Current date is Mon. 5-28-90

Enter new date (mm-dd-yy)

Details of how to set the date are given in the DOS user's manual, and for the moment we will skip this procedure.

To skip this step press <Enter> and the following will appear:

Current time is 18:12:51.26

Enter new time:

Press <Enter> again and the DOS prompt will appear on your screen, as below:

A>

The DOS prompt tells you that DOS has been loaded and that your computer is now ready to accept your commands. The DOS prompt also tells you what disk drive is currently being addressed. Above we have shown the DOS prompt as A>, but it could also be B> or C>. Each letter refers to the disk drives installed in your system. The letter A always refers to the first floppy disk drive. The letter B refers to the second floppy disk drive. If you only have one floppy disk drive installed both A & B refers to this disk drive. Letters C and above refer to the hard disk drives installed. To change from one disk drive to the other, you must type the letter of the drive followed by a colon (:), and press <Enter>. For example, to change from A drive to the B drive you must type the following:

A>B:<Enter>

B>

Note that the letter of the DOS prompt will change according to which disk drive you have selected. The DOS prompt may be changed with the DOS command PROMPT. Full details of this command are contained in the DOS user's manual. At this stage, the important point is to understand how the letter of the DOS prompt indicates the disk drive currently being addressed.

General DOS Usage

As we have explained, DOS controls the flow of information between the various components of your PC. It also provides you with the tools to organize the information on your disk drives and even check whether they are working properly. The core of DOS is a file called COMMAND.COM. This file contains the basic DOS instructions and is loaded into your system's

memory every time you turn on your computer. When we talk about “booting” your computer, this means to turn on your computer and load the COMMAND.COM. When the DOS prompt appears, this tells you that the COMMAND.COM file has been loaded and that you can start your computing operations.

Internal Commands

Internal commands are those that are automatically loaded into your PC’s memory every time you boot your computer. Because they are loaded into memory, they are always available for use even if you have removed the DOS diskette from your floppy disk drive. These commands are the most frequently used, and include CLS, COPY, DELETE, DIR, TYPE and VER, all of which are explained later in this chapter. There are many other internal commands, details of which are given in your DOS user’s manual.

External Commands

External commands are used less frequently, and must be loaded from a disk drive. These commands will only be loaded into memory when you type the command name, assuming your DOS diskette is inserted in the disk drive currently displayed in the DOS prompt. For example, if you loaded DOS from your A drive, then to load a program from the DOS diskette, you simply type the name of the command after the A> prompt. If the prompt is shown as B> (i.e. the B drive, the second disk drive, is currently being addressed) and you type the name of a DOS command while the DOS diskette is in the A drive, you will see an error message since your PC will not be able to find DOS in the B drive. In this case you would first have to type A: to change back to the A drive. Later in this chapter the CHKDSK and FORMAT commands both external commands, are introduced. Full details of all the external commands are to be found in the DOS user’s manual.

Basic Rules

We list here some basic rules for DOS usage, which apply in all cases:

- Commands can be typed in either uppercase or lowercase letters, or even combinations of both.
- To execute a command the < Enter> key must be pressed after the command has been typed at the DOS prompt.
- To change the disk drive currently being addressed type in the letter of that disk drive followed by a colon (:).
- In order to execute an external DOS command, the relevant command must be present on the disk drive currently being addressed, as indicated by the DOS prompt.
- To correct typing errors when typing in commands, use the < Backspace> or cursor left keys to delete the incorrect characters.

Loading Other Programs from DOS

When you have booted your computer you will most likely want to load some other program, such as a word processor or database program. By way of a simple example we will assume you have a

word processing program called WRITER, which is contained on a single floppy diskette. You have booted DOS from the A drive, so the A> prompt is shown. Remove the DOS diskette from you're a drive, and insert the WRITER diskette in its place. Then simply type the name of the command to run the Writer program, which for this example we assume is WRITER, as below:

```
A>WRITER<ENTER>
```

The WRITER program will then be loaded from the A drive and you may start your word processing operations. You could have also loaded WRITER from the B: drive. To do this, you could leave your DOS diskette in the A drive and insert the WRITER diskette into the B drive. Then to run the program you would have to type:

```
A>B:WRITER<ENTER>
```

Note that in this example, we did not first change to the B drive but typed B: before the program name to tell DOS from which drive you wish to load it. What command you have to issue to load a certain program will, of course, depend on which program you are using, and the relevant manual will tell you what it is. The important thing is that you understand the basic principle. Once DOS is loaded you can remove the DOS diskette

from the disk drive and load any other program you wish because the internal part of DOS has been stored in your computer's memory.

Common DOS Commands

To give you more confidence before you start the daunting task of pursuing your DOS user's manual, we outline here some of the more common and most basic DOS commands. The operative word here is "outline". For full details of all the possible functions with these commands you will have to refer to your DOS user's manual. The commands are divided into internal and external commands, starting with the former.

Dir – The Directory Command

The DIR command is probably the most common DOS command and you will use it almost every time you turn on your computer. The DIR command gives you a directory, that is a list, of all the files stored on a diskette or disk. For example, suppose you have a diskette and you want to know what files are stored on that diskette, then, to find out, insert the diskette in your floppy disk drive and type DIR, as below:

```
A>DIR<Enter>
```

A list of file names will appear on your screen. Alongside each file name is the size of the file (in bytes) and the date and time at which that file was last modified.

Beneath the list of files you will also be told how many files are on the diskette and how many free bytes remain on the diskette or disk. The DIR command can be used for floppy diskettes or hard disk drives.

The DIR command can also be used to find information on one particular file. Suppose you have a

file called LETTER>TXT on your B: drive and you want to see the date on which the file was last modified, you could type:

```
A>DIR B:LETTER.TXT<ENTER>
```

Notice how the B: used to tell DOS to look on the B: drive is placed after the DIR command and before the file name. In response to such a command you would get a display similar to that shown:

```
Volume in drive B has no label
```

```
Directory of B:\
```

```
LETTER TXT 2340 5-01-90
```

```
1 File(s) 320000 bytes free
```

This tells you that the file LETTER.TXT consists of 2,340 bytes and was last edited at 04.53pm on the 1st of May 1990. You are also told that there are a total of 320,000 free bytes on the diskette.

If the list of files is very long, the text will continue scrolling off the top of your screen making it impossible to see the first files in the directory. To pause the scrolling, you need to press < Ctrl> S or < Ctrl> < Pause>. To restart the scrolling press either of these key combinations again. The DIR command has various parameters to display the list of files in different formats and you should refer to the DOS manual for details.

CLS – Clear Screen

To clear the screen so that it is blank except for the DOS prompt, type:

```
A>CLS<ENTER>
```

The screen will be cleared, with only the DOS prompt remaining in the top left hand corner.

DEL – Delete a File

The DEL command is used to delete a particular file, or a number of files from a diskette or hard disk. Suppose you have a file LETTER>TXT on the diskette and you no longer wish to keep this file. By deleting it you will create more space on the diskette for other files. To delete the file type:

```
A>DEL LETTER.TXT<Enter>
```

```
A>
```

If you now use the DIR command to view a directory of files on the A: drive you will see that the LETTER.TXT is no longer there.

If the file had been in the B: drive, you could have executed it as follows:

```
A>DEL B:LETTER.TXT<Enter>
```

A>

Obviously care should be taken when using the DEL command to ensure that you do not accidentally delete a file you wished to keep.

COPY – Copy a File

COPY is another command you will often use. As its name suggests it is used to copy files from one disk or diskette to another. For example, suppose you have a file called ADDRESS.TXT on a diskette in drive A: and you now want to copy this file to another diskette on drive B:. To do this you would type:

```
A>COPY A:ADDRESS.TXT B:<Enter>
```

1 File(s) copied

This tells DOS to copy the file ADDRESS.TXT on the A: drive, onto the B: drive. Actually it is not necessary to type A: before the file name ADDRESS. TXT, because since the A: drive is the current drive, as shown by the DOS prompt, DOS will naturally look on the A: drive for this file.

It is also possible to copy a file under a different name. Supposing you wish to copy the file ADDRESS.TXT to the B: drive and you want to change the name to OLDADDR.TXT. In this case you would type:

```
A>COPY A:ADDRESS.TXT
```

```
B:OLDADDR.TXT<Enter>
```

1File(s) copied

The COPY command is one of DOS's most useful tools and you should consult your DOS user's manual for full details.

VER – DOS Version Number

As we have mentioned, DOS has gone through various changes since its first release, each upgrade having a different version number. In order to find out the version of DOS you are using, type the VER command as below:

```
A>VER<Enter>
```

IBM Personal Computer DOS Version 4.01

As you can see the version number of the DOS being used will be displayed. The version number displayed will obviously depend on which version you are using. It is

sometimes necessary to know the version number because some programs will only run with certain versions of DOS. For instance, you may have a program which requires that you have

version 3.30 or above to run. If your VER command tells you the version you are using is 3.10, then that program may not run. The instance of this is very small and 99% of programs will run under any version of DOS above 3.00.

The VER command has no other use than to find out the version of DOS you are using.

TYPE – Type a File to the Screen

The TYPE command is used to view the contents of a file on your screen. It can only be used to view text files, not program files. Text files are the files that you have created with your word processor or other program. Not all text files can be viewed with the TYPE command, however. Some programs, such as WordStar, store their files in a special format and if you try to use the TYPE command to view them, you will get unintelligible garbage on your screen. For such files you will have to use the program that was used to create them to view them.

To use the TYPE command to view the contents of a file TAXFILE.TXT on your B: drive you would type:

```
A>TYPE B :TAXFILE.TXT<Enter>
```

The contents of this file will then scroll continuously onto your screen, and you may use the < Ctrl> S command to pause the scrolling. Note that text displayed with the TYPE command is not displayed in any particular format, and may appear very differently from how you saved it. This is because the TYPE command ignores all formatting commands entered in the program that was used to create the file, and simply displays the text. You cannot edit files with TYPE command that can only be used to view the file contents.

External Commands

FORMAT – The Disk(ette) Formatting Command

As we noted in Chapter 3. Diskettes and Disk Drives, all diskettes and hard disk drives must be formatted before you can use them. We shall only introduce the formatting of diskettes here, and if you require information on the formatting of hard disk drives then you should refer to your DOS user's manual since this is a complicated process.

When you purchase diskettes, they are normally unformatted. Before you can store data on a diskette, DOS needs to divide the diskette up into sections and prepare it for receiving data. The technical details are not important. What is important is that no matter what kind of disk drive or diskette you are using, the diskette must be formatted before anything can be done with it.

Because FORMAT is an external command you must have the DOS diskette containing the FORMAT command in your disk drive. To format a diskette, place the

DOS diskette containing the FORMAT command in drive A: and then type the following command:

```
A>FORMAT A:<Enter>
```

Insert new diskette for drive A:

And strike ENTER when ready

Make sure that the blank diskette is correctly inserted in drive A: and press < Enter>. The FORMAT command will count through the heads and cylinders on your screen and when the procedure is finished, the following will be displayed:

Format Complete

1457664 bytes total disk space

1457664 bytes available on disk

Format another (Y/N)?

If you wish to format another diskette remove the diskette just formatted, replace it with a new diskette and press “Y”. If you do not wish to format another diskette, press “N”. In the example above, a 1.44Mbyte diskette was formatted. To format a 720Kbyte diskette it will require a special format command “**FORMAT A: /F:720**” and the total disk space displayed will be 655,360.

CHKDSK – The Check Disk Command

The CHKDSK command is a diagnostic command, and it can be used to check the condition of a floppy diskette or hard disk. The command will give information on the diskette or disk being checked and will also give you information on the memory of your computer. Again, the CHKDSK command is an external command, so the DOS diskette must be in the current drive.

To check a diskette in drive A: with the DOS diskette in drive A:, type the following command:

```
C>CHKDSK A:
```

```
1457664 bytes total disk space
```

```
0 bytes in 1 hidden files
```

```
1337344 bytes in 69 user files
```

```
118272 bytes available on disk
```

```
655360 bytes total memory
```

```
566192 bytes free
```

The example above shows the information given by the CHKDSK command. It tells you that the disk being checked is a 1.44Mbyte diskette; that there is 1 hidden file with 0 bytes (a hidden file is one that will not show up using the DIR command); that there are 69 files on the diskette taking up a total of 1337344 bytes; and that there are 118272 bytes available on the diskette. It also tells you that your PC has a total of 655,360 bytes of memory, and that currently 566,192 of those bytes are

free.

The CHKDSK command can also be used to check the contents of a hard disk drive in a similar way. The CHKDSK command does not only look for information, however, but also detects if there are any errors among the files on the disk or diskette being checked. If there are, it will tell you so, and you can use the CHKDSK command to try and save any damaged files. For details of this, please refer to your DOS user's manual.

A Word of Advice

In this chapter we have barely skimmed the surface of DOS and the many commands available. The commands introduced here will soon become second nature to you as you use them every day. Many of the DOS commands not covered here offer other important functions that you will come to need as you become more acquainted with your PC, and as your requirements increase.

DOS is not a very user-friendly operating system and the average user will never use many of the commands provided. Indeed, many of these commands will be fairly unintelligible to people unfamiliar with programming or computer science. The more you know about DOS, the more you will get out of your computer. We suggest you gradually learn the various DOS commands (by referring to your DOS manual) as you come across them, rather than attempting to learn everything about DOS in a short period of time.

SLC Chapter 6 Connecting Peripherals

CHAPTER 6

CONNECTING PERIPHERALS

Your WinBook computer includes a number of ports to allow the connection of external peripherals. Although your notebook computer is a completely self contained unit which does not require the addition of any other device to function, you may at some time or other find it convenient to connect certain devices to your notebook. The WinBook supports the connection of a wide range of commonly used devices just as is possible with a conventional desktop PC. Devices include serial and parallel printers; a mouse or scanner, or any other device that requires a serial port; an external floppy disk drive; an external keyboard; an external monitor etc. Each of the on-board ports is detailed separately on the following pages. Please refer to Appendix B for details of the pin connections of each port.

The External Keyboard Port-PS/2 Mouse

The external keyboard port is situated on the left side of the rear panel of the 486SX/DX-WinBook.

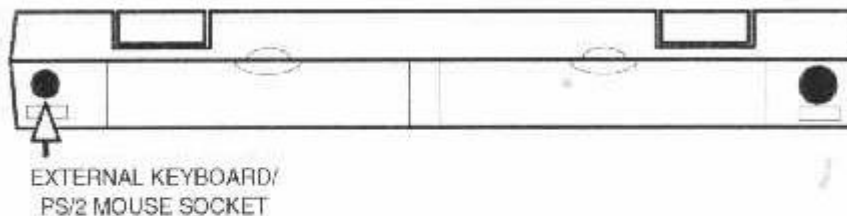


Figure 6-1 Locating the External Keyboard Port

Fig. 6-1 Locating the External Keyboard Port

Please note that the external keyboard socket is smaller than the connector found on standard desktop computer keyboards. In order to be able to connect an external keyboard you will need to use the adapter provided with the unit.

To connect an external keyboard, first turn your WinBook off. Then, plug the external keyboard into the external keyboard socket. Now turn your WinBook on again. When an external keyboard is connected, you may use either the internal keyboard or external keyboard to input data as both will be activated.

The external keyboard port doubles as a PS/2 mouse port and you may connect a PS/2 mouse directly to this port. Please note that the PS/2 keyboard/mouse port can only use one device at a time, either a mouse or a keyboard, not both.

The External CRT Monitor Port

The external CRT (Cathode Ray Tube) monitor port is located behind the right-hand cover on the rear of the 486SX/DX-WinBook as shown in the illustration below. To gain access to the external monitor connector, simply pull the cover open.

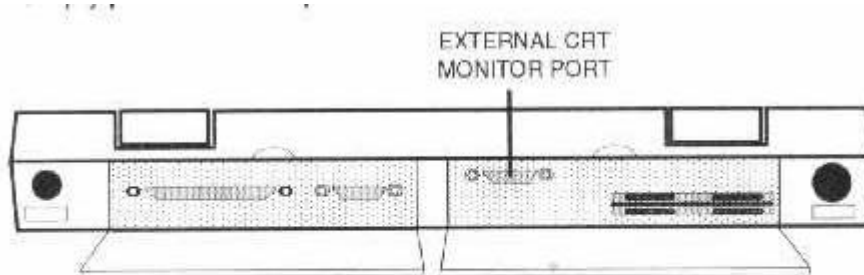


Figure 6-2 Locating the External CRT Monitor Port

Fig. 6-2 Locating the External CRT Monitor Port

The External CRT monitor port supports the connection of any analog VGA compatible monitor. You cannot connect a digital monitor such as a conventional monochrome, CGA or EGA monitor, to this port. The IBM VGA standard is an analog signal, and only an analog monitor will work with the WinBook. If you have a multi-frequency monitor this probably supports both digital and analog modes. If you wish to connect such a monitor to the 486SX/DX-WinBook you must configure the monitor in analog mode.

To connect an external monitor, first turn your WinBook off. Connect the 15-pin D-connector cable from the monitor to the external monitor port, and secure the connector in place by tightening the two screws. Now turn your system on again and turn the power to the monitor on.

With an external monitor connected, you may toggle the display between the external CRT, the LCD and both at the same time by pressing the < Ctrl> < Alt> F10 key combination.

The Serial Port

The serial port is located behind the left-hand cover on the rear. To gain access to the serial port, open the hinged cover.

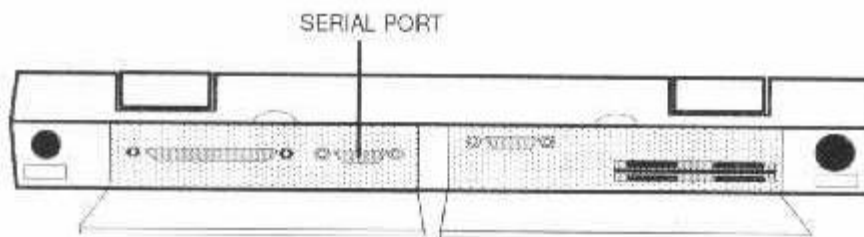


Figure 6-3 Locating the Serial Port

Fig. 6-3 Locating the Serial Port

Serial ports are often called RS-232 © ports, which refers to the industry standard for this kind of interface. Because the serial interface is an industry standard there is a wide range of devices that can be connected to the serial port. Basically, any device that is listed as a serial device and requires an RS-232 interface can be connected to your WinBook. Examples of such devices include a mouse, an external modem and a serial printer.

COM 1 and COM 2

The serial port on your WinBook is configured as COM1. The COM2

serial port is used by the built-in trackball. When you connect a device to your WinBook, you will have some software to configure and run the device.

In your software, you must configure the device as being connected to the COM1 serial port. For example, if you connect a mouse to the serial port, you must ensure that you use your mouse software to configure the mouse as being connected to COM1.

How to Connect a Mouse

By way of an example, we describe here the simple procedure for connecting a mouse, which is probably the most commonly used serial device, to your WinBook. The procedure for connecting any kind of serial device will be similar. An increasing number of software packages supports the use of a mouse, and a mouse can make the operation of such software extremely quick and easy. The most commonly used mice are serial devices and as such can be directly connected to your WinBook. Another kind of mouse is the bus mouse that usually requires a special interface card. You cannot connect this type of mouse to the serial ports, so make sure the mouse you wish to use is a serial mouse.

NOTE

The external serial port is COM1; the optional Fax/Modem is COM3. When using a serial mouse on COM1 there will be a conflict when using the Fax/Modem on COM3. If it is desired to use both a mouse and modem together, the best solution is to use the internal trackball or a PS/2 mouse instead of a serial mouse.

The serial connector on the WinBook is a 9-pin male D-connector. A male connector is a connector containing the pins, (a female connector is a connector with pinholes into which the pins on the male connector must be inserted). D-connector refers to the shape of the connector that has one long side and one short side.

Now look at the connector attached to your mouse. If the connector is a 9-pin female D-connector you may plug this directly onto one of the serial port connectors on your WinBook. Secure the mouse connector in place by means of the screws on either side, which should be screwed into the receptacles on the serial port connectors.

If your mouse is fitted with 25 –pin connector you must buy a 25-pin to 9-pin adapter. Such adapters are available at any good computer store. If you need to purchase such an adapter, make

sure that the 9-pin connector on the adapter is female.

Having obtained an adapter, plug this onto the connector on your mouse and secure with the attached screws/fasteners, and then connect the adapter to one of the serial ports on your WinBook and similarly secure it in place. Your mouse is now connected and ready for use. Please note, however, that a mouse requires a software driver that must be installed before you will be able to use it. The mouse should include a

software diskette containing such a driver, so please refer to the manual provided with your mouse for details of how to install the software driver in the WinBook.

The installation procedure for the 486SX/DX-WinBook will be the same as for any other PC.

The Parallel Port

The parallel port is located behind the left-hand cover on the rear of your WinBook. To gain access to the parallel port, open the hinged cover.

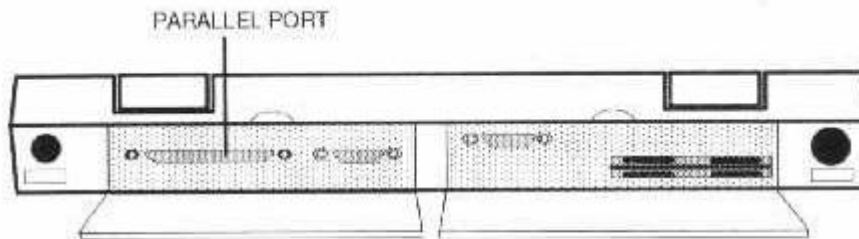


Figure 6-4 Locating the Parallel Port

Fig. 6-4 Locating the Parallel Port

Parallel ports are often referred to as Centronics or Printer ports, since a printer is the device most commonly connected to the parallel port. Again, this is an industry standard, so any device that requires a parallel interface can be connected to the parallel port. In addition to printers, common parallel devices include plotters and digitizers.

Connecting a Printer

If you wish to connect a printer to your WinBook first make sure the printer is a parallel printer and not a serial printer. The vast majorities of PC printers are parallel devices and can therefore be connected to the parallel port on your WinBook. Provided with the printer should be a printer cable. Connect the matching connector on this cable to your printer and secure it in place with the screws or fasteners on the cable connector. Plug the other end of the cable onto the parallel connector on your WinBook and secure it in place. And that is all it takes!

Most printers do not require any software drivers and you should be able to access the printer immediately without any further setup procedure. An easy way to test whether the printer is on line is to turn on your WinBook and turn on the printer, and then, when your WinBook has booted up, press the Prt Sc (Print Screen) key. This should cause the contents of the screen display to be

printed out. For details of your particular printer's operation, please refer to the printer manual.

Connecting the Optional Docking Station

An external docking station is available as an option for your 486SX/DX-WinBook. The docking station includes its own power supply and has space for interface cards just as in a conventional PC. The docking station will also allow the use of additional disk drives.

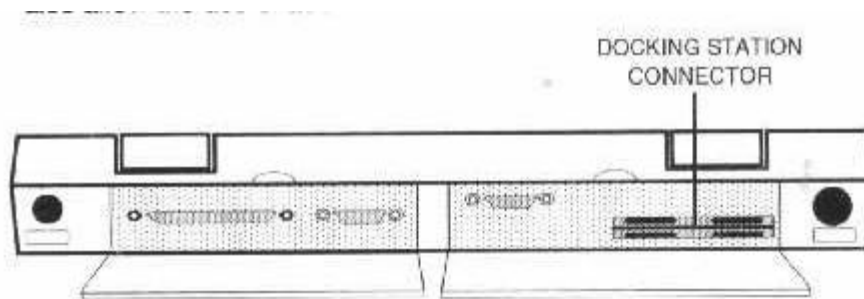


Figure 6-5. Locating the Docking Station Connector

Fig. 6-5 Locating the Docking Station Connector

The connector for the external docking station is situated behind the right-hand cover on the rear panel. The whole notebook should be "plugged in" to the docking station via this connector. For full details, please refer to the instructions included with the docking station.

Other Available Options

Note that the following options are also available for the WinBook, but these options are **NOT** ones the user can install, an authorized dealer must install them. For further information, please call your dealer.

Memory Options

The standard WinBook comes with 2MB of memory, which can be upgraded to 4MB or 8MB.

Optional Fax/Modem

An optional Fax/Modem can be installed in the unit, providing a 2400 Hayes compatible modem with send/receive capabilities.

Optional Math Coprocessor

The WinBook Supports an Intel 80387SX Math coprocessor, which will improve mathematical functions in math intensive software packages (note that the software packages must support a coprocessor).

SLC Chapter 7 Power Options

CHAPTER 7

POWER OPTIONS

The WinBook features the ability to run on AC power or the rechargeable internal battery for maximum convenience when at home or in the office or out and about with no access to a power supply. To maximize the efficiency of battery usage the WinBook also comes with a number of power conservation features, some of which can be tailored to your particular requirements.

Using the AC Adapter/Charger

When you have access to AC power you should normally use the AC adapter provided with your WinBook in order to save the battery for use when power is not available. The supplied AC adapter can be plugged into any power source from 90 volts to 240 volts since it is auto-adjustable.

When you turn on your system, as long as the AC power adapter is connected, power will be derived from this power supply and the battery will remain unused.

If the main power is accidentally cut off, or the cable is unplugged either from the WinBook or from the AC power outlet, the system will automatically switch to battery use with no break in operation. Thus, the on-board battery provides an Uninterruptible Power Supply (U.P.S.) function during AC power operations.

Using the Battery

The WinBook can also be run off the battery supplied, so you can use your system even when no AC power is available. The battery is inserted into the battery cavity in the WinBook that is accessed by removing the battery cover.

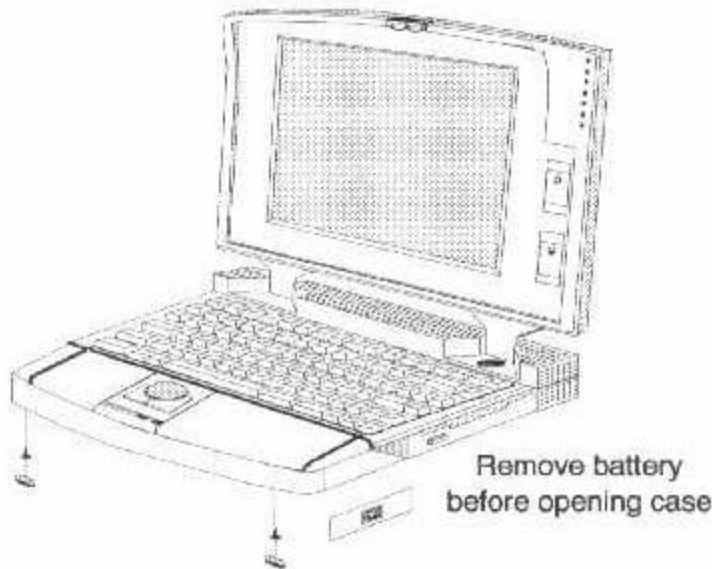


Figure 7-1 Inserting the Battery

Fig. 7-1 Inserting the Battery

To remove the cover, simply press firmly on the cover with your thumb and slide it downwards. When the battery is installed the battery cover should always be replaced.

The battery will provide at least two hours of usage before it will need to be recharged. If you run the POWER.EXE program, more than two hours of usage will be possible. Please refer to page 7-4 for details.

If you turn on your WinBook when the power adapter is NOT connected, the system will automatically use the battery. As soon as you connect the power adapter, the system will automatically use the power adapter.

Charging the Battery

The AC power adapter provided with your system is actually a combined power supply/battery charger. The battery used is a Nickel-Metal-Hydride type and you should only use the supplied charger to recharge this battery. The procedure for charging the battery is detailed below:

1. Turn off the power to the computer and insert the battery in the battery compartment.

NOTE

Make sure you insert the battery in the direction of the arrow on the battery.

1. Plug the power adapter in the computer and turn the power on. The power LED on the power adapter will illuminate.

2. As long as the battery is inserted and the power adapter is connected, the charge LED on the power adapter will illuminate, indicating that the battery is being charged. Due to the advanced design of the charger circuit, the battery in the WinBook will fully charge in 1 to 1.5 hours no matter whether you are using the computer or not.

3. When the battery is fully charged, the Charge LED on the power adapt will

flash.

1. The charger will automatically enter “trickle charge” mode to ensure the battery is kept fully charged. To obtain the best performance and prolong battery life, you should continue to charge the battery for a further 30 minutes after the full charge indicator has flashed.

6. When the battery is fully discharged the temperature of the battery will

be higher than normal. Please wait approximately ten minutes before recharging the battery.

1. If you do not intend to use your computer for a period of time, you should fully discharge the battery and remove the battery from the computer. **DO NOT RECHARGE THE BATTERY BEFORE REMOVING IT FROM THE COMPUTER.**

2. Note that to get maximum battery usage, you should recharge the battery before you use it.

SAFETY NOTES

- Recharge in a place 50°F (10°C) to 95°F (35°C).
- Do not short-circuit battery.
- Do not put into fire.

Saving Battery Power with POWER.EXE

Included with all MS-DOS/IBM DOS version 5.02 is a program called POWER.EXE, which can be loaded to maximize power usage. We recommend you load this program, especially if you frequently use your WinBook on battery power. The instructions for using this program are as follows:

1. Copy the POWER.EXE program from the diskette to the root directory of the C: hard disk by entering the following command under DOS:

```
COPY A:\POWER.EXE C:\
```

1. Enter the following statement in your CONFIG.SYS file:

```
DEVICE = C:\POWER.EXE
```

NOTE: For details on creating and editing the CONFIG.SYS file,

Please refer to your DOS user's manual.

1. Save the CONFIG.SYS file and reboot your computer. The POWER.EXE will automatically be loaded each time your computer is turned on and will ensure that power overhead is kept to a minimum by monitoring the system during usage.
-

SLC Chapter 8

CHAPTER 8

BIOS SETUP PROGRAM

One of the components on the mainboard inside your WinBook is the BIOS (Basic Input Output System). This consists of firmware (software burned into hardware) which handles basic routines. The BIOS also includes a SETUP program to allow you to configure the computer and set certain power management features. In this chapter we explain how to use the setup program and power management features to get the best performance from your WinBook.

Accessing the Standard SETUP Program

When you turn on your computer, the system will run a memory check, and you can see it counting through the memory on your screen. The following display will also appear on your screen:

Hit , If you want to run SETUP

As long as this message is present on the screen you may press the key to access the setup program. If this message disappears before you have pressed the key, reboot your machine to call the message back to the screen. When you press , the main menu of the SETUP program will appear, as shown.



Figure 8-1 The BIOS SETUP Program main Menu

Figure 8-1 The BIOS SETUP Program main Menu

You may use the cursor up/down keys to highlight the individual menu items. As you highlight each item, a brief description of that item's function appears in the lower window.

The first item in the main menu is the STANDARD CMOS SETUP. You must run this part of the

setup program in order to correctly setup your hardware configuration. Highlight **STANDARD CMOS SETUP** and press <Enter>. A warning message will appear on your screen as shown on the following page.

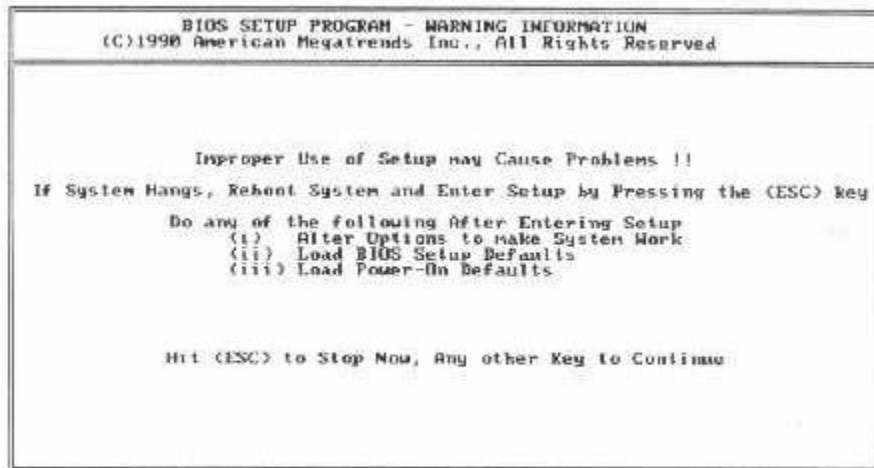


Figure 8-2 The BIOS SETUP Program Warning Message

Figure 8-2 The BIOS SETUP Program Warning Message

Read this message and then press any key to call up the STANDARD CMOS SETUP display, which will appear on your screen, as shown below.

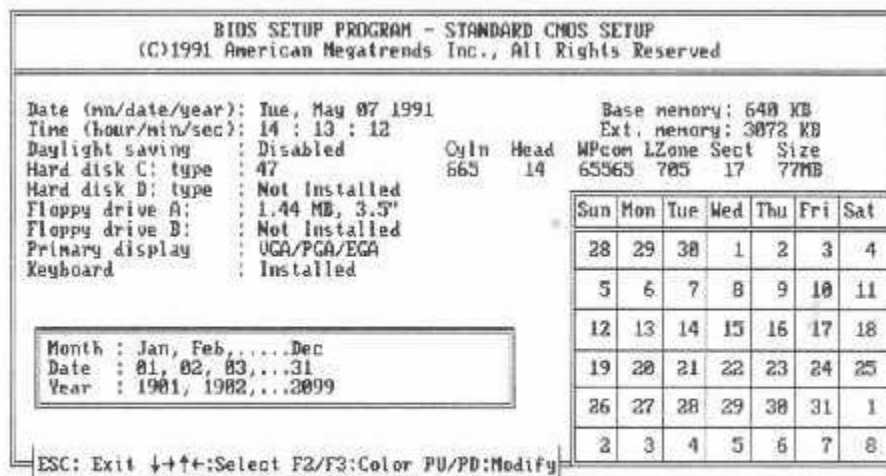


Figure 8-3 The Standard SETUP Screen

Figure 8-3 The Standard SETUP screen

In the top right corner the base memory size and the extended memory size are displayed. This is automatically read from your system, and you do not need to set these parameters.

The bottom right hand of the screen shows a calendar. The month displayed will depend on the date set in your system clock, and one day will be flashing indicating the current date. Since you have not yet set the time and date, the date displayed is probably incorrect.

Information on each item is given in the window in the left, with details of the available options for each item and examples of settings.

Setting the Date and Time

The date is the first item in the list on the left of the SETUP display. To move the cursor over the item you wish to change use the cursor up and down or left and right keys. To alter items use the **PgUp** and **PgDn** keys. When you set the date, you should set the year first. If you set the date and month first and then select the year, the date

and month will automatically change according to the year. To set the date, for example, position the cursor over the year and use the PgUp/PgDn keys to call up the current year. When you have selected the correct year, move the cursor to the month and date and again use the PgUp/PgDn keys to make the correct setting. Note, that the day (Mon., Tue, Wed&ldots;) will change automatically according to whatever date is set. When you have set the correct date, use the cursor right key to move down to the time, and in a similar way set the correct time.

You may use the Daylight Saving item to enable or disable Daylight Saving Time depending on whether daylight saving time is used in your area.

Hard Disk Type

For the hard disks, you must enter a type number, according to the type of hard disk drive you have installed. You can scroll through the different types by using the PgUp/PgDn keys. If none of the type numbers corresponds to the drive you are using, select type 47 and define the Cyl, Head, Wpcon, Lzone and Sec according to the specifications of your drive. Please refer to the sheet detailing hard disk configuration enclosed with this manual.

Floppy Drive Configuration

Use the PgUp/PgDn keys to scroll through the choices, which are 360 KB 5.25"; 1.2 MB 5.25"; 720 KB 3.5"; 1.44 MB 3.5", and Not Installed. Set floppy drive A: as 1.44 MB 3.5"; set floppy B: as Not Installed.

Primary Display

For the **Primary display** item you have a choice of monochrome, Color 40 X 25, VGA or EGA, Color 80 X 25, or Not Installed. Select VGA or EGA.

Keyboard Test

The **Keyboard** item is used to enable or disable a keyboard test when you turn your system on. To enable the keyboard test, select **Installed**; to disable the keyboard test, select **Not Installed**.

Having made all the above settings according to your system configuration, press <Esc> to return to the main menu. If you do not wish to use the advanced setup options you may now save the settings you made in the STANDARD CMOS SETUP by pressing the F10 key or highlighting the SAVE SETTING AND EXIT item in the main menu.

When you save the settings your system will reboot and these settings will be automatically implemented every time you turn your computer on.

The WinBook Advanced CMOS Setup

To access the advanced CMOS Setup Program, highlight ADVANCED CMOS SETUP in the main menu and press <Enter>. A warning message will appear on your screen and you may press any key to remove this and access the Advanced CMOS Setup program, as illustrated below.



Figure 8-4 The Advanced CMOS SETUP Screen

Figure 8-4 The Advanced CMOS SETUP Screen

The Advanced CMOS Setup allows you fine-tune certain features supported by the chipset and AMI BIOS. It also includes support for shadow RAM under which the contents of the ROM BIOS can be copied into memory at boot up, enhancing performance. When you first access the Advanced CMOS Setup program, the default settings will be loaded. If you change any of the settings you may recall the default settings at any time from the main menu. This is detailed later.

To get help on each item, highlight the relevant item and press the F1 key. A window will appear on your screen detailing the various options available for each item. A brief introduction of each of the settings in the Advanced CMOS Setup program is given below.

Typematic Rate Programming

Enable this item if you wish to be able to configure the characteristics of your keyboard. Typematic refers to the way in which characters are entered repeatedly if a key is held down. For example, if you press and hold down the “A” key, the letter “A” will repeatedly appear on your screen until

you release the key. This item is disabled by default.

Typematic Rate Delay (msec)

You can use this item to define the period after which the typematic function becomes active i.e. how long after you press a key the characters will be repeated.

Typematic Rate (Chars/Sec)

You can use this item to define the typematic rate delay of your keyboard, i.e. the rate at which characters will be repeated when a key is held down.

Mouse Support Option

Enable this item if you wish to use a mouse with the setup program.

Above 1 MB Memory Test

Enable or disable this function according to whether you want the system to run a test of memory above 1 MB at boot up or not.

Memory Test Tick Sound

Enable or disable this function according to whether you want an audible signal during the memory check or not.

Hit Message Display

Enable or disable this item according to whether you wish the message "Hit , If you want to use SETUP" to appear on your screen or not.

Hard Disk Type 47 RAM Area

If the hard disk type you wish to install in your system is not listed in the Standard CMOS Setup program, you can use the type 47 to configure a special setting according to the characteristics of your hard disk drive. You may use this item to define the area of RAM in which this information is to be stored.

Wait for <F1> If Any Error

Enable or disable this item according to whether you wish to press <F1> when an error is encountered or not. Pressing <F1> enables you to enter the setup program and make any necessary changes.

System Boot Up Num Lock

Use this item to enable/disable the Num Lock on your keyboard automatically at power-on.

Floppy Drive Seek at Boot

You may enable/disable this item to define whether the system will look for a floppy disk drive to boot from at power-on, or go directly to the hard disk drive.

System Boot Up Sequence

You may define whether the system will look first at drive A: and then at drive C: when booting up, or vice versa.

System Boot Up CPU Speed

Select High to configure your system in the turbo speed mode at boot up; select Low to configure your system in normal speed mode.

CPU Low Speed Select

This item defines the CPU speed when in normal speed mode, with a choice of CLK2/2 (CPU speed divided by 2) and CLK2/4 (CPU speed divided by 4).

Internal Cache Memory

Internal cache memory refers to the built-in 1K cache in the Cyrix CX486SLC CPU. This item should usually be enabled to obtain the best performance.

Fast Gate A20 Option

Retain the default setting for this item.

Password Checking Option

If you enable this item you can define a password which needs to be entered every time you boot up the system in order to gain access. Select Setup if you only want password protection for accessing the Setup program; select Always to have password protection every time you boot up your system.

Adapter Shadow

Shadow RAM is a feature whereby the contents of the ROM BIOS are copied into the top 384K of the first megabyte of memory each time the computer is turned on. Since this area of RAM is often not used as it is above the 640K of base memory, shadowing the BIOS makes maximum use of all available memory. Because data can be accessed much quicker from RAM than from ROM chips, this results in enhanced performance.

Enabling adapter shadow allows the shadowing of the contents of ROM BIOS's of devices other than the main BIOS. *IF your system has devices with ROM BIOS, enable adapter ROM shadow and this BIOS data will be shadowed at boot up. Adapter ROM shadow can be enabled in two blocks of 32K.

System ROM Shadow

The Main system ROM may also be shadowed as explained above. Shadowing the main system ROM will result in improved performance.

Set Display Type

This item has a choice of three options: LCD, Auto and SimulSCAN. Select LCD to use the built-in LCD display; select Auto to allow use of the LCD display for normal usage and automatic switching to an external CRT if one is connected; select SimulSCAN to allow simultaneous viewing of the LCD and CRT display.

Set Automap or Attribute

Retain the default setting for this item.

Power Management

Select **POWER MANAGEMENT SETUP** in the main menu make various settings to maximize power usage. If you wish to take advantage of these features, you must select **Enabled** for the first item, Power Management. When this item is enabled, you may then proceed to make the settings according to your requirements.

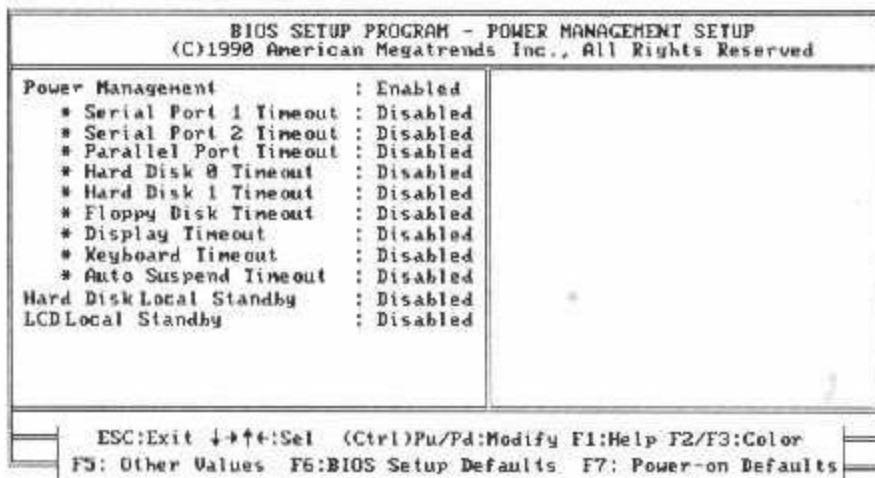


Figure 8-5: The Power Management Screen

Figure 8-5 the Power Management Screen

Serial Port 1,2 Timeout

Enter the amount of time of non-usage after which you wish power to the serial port to be shut off. For example, if you enter 10 (seconds), then if the device connected to

serial port 1 is not used to 10 seconds, power to the serial port will be shut off. As soon as the device is used, power will automatically be restored.

Parallel Port Timeout

Enter the amount of time of non-usage after which you wish power to the Parallel (printer) port to be shut off.

Hard Disk 0 Timeout

Enter the amount of time of non-usage, i.e. no data is written to or read from the hard disk, after which you wish power to the hard disk drive to be shut off. Note that the hard disk 0 refers to the hard disk installed in the WinBook.

Hard Disk 1 Timeout

As for hard disk 0 above, note that the WinBook only supports the use of one hard disk drive unless you are using the optional docking station.

Floppy Disk Timeout

Enter the amount of time of non-usage, i.e. no data is written to or read from the floppy disk, after which you wish power to the floppy disk drive to be shut off.

Display Timeout

Enter the amount of time of system non-usage, i.e. no input is made from the keyboard or other device, after which you wish power to the LCD display to be shut off.

Keyboard Timeout

Enter the amount of time of keyboard non-usage after which you wish power to the keyboard to be shut off.

Auto Suspend Timeout

Enter the amount of time of system non-usage after which you wish the computer to be automatically entered into suspend mode. The result of this will be the same as if you had pressed the suspend switch on the WinBook. Note that the Auto Suspend Timeout starts counting from when the longest of all the other items has elapsed. For example, if the Keyboard Timeout is set for 3 minutes and this is the longest timeout of any of the settings, the Auto Suspend Timeout will only start counting when the 3 minutes is up.

Note also that the Auto Suspend function will only work if a timeout period has been entered for at least one option. If all timeout options are disabled, Auto Suspend will not function.

Hard Disk Local Standby

Enter the amount of time of system non-usage, i.e. no input is made from the keyboard or other device, after which you wish power to the LCD display to be shut off.

Automatic Power Saving

In addition to the user configurable power saving modes detailed above, the WinBook features some transparent features to enhance power economy. These include a “Smart CPU” mode. This means that when the CPU is not being accessed it will automatically switch to a slow cycle mode in which it uses less power. As soon as the CPU is accessed it will switch back to high cycle mode.

Also, note that if you have installed the optional fax modem and are expecting an incoming call, you can set the computer in Suspend mode. As soon as the incoming call is received, the computer will return to normal mode in order to handle the call.

Restoring Default Settings

As mentioned in the warning screen, it is possible to make an incorrect setting in the setup program, which will cause your system to malfunction. In this case you may wish to restore the default settings in order to be able to successfully boot up your machine. The main menu has two items, **AUTO CONFIGURATION WITH BIOS DEFAULTS** and **AUTO CONFIGURATION WITH POWER-ON DEFAULTS** to enable you to do this.

To restore the default settings for the Advanced CMOS setup and Advanced Chipset Setup, select **AUTO CONFIGURATION WITH BIOS DEFAULTS** and a message will appear asking if you wish to restore the settings from the ROM table. Type “Y” to proceed or “N” to cancel. If you type “Y” the settings will be immediately restored. Please note that this will not affect the settings you have made in the Standard CMOS Setup, which will be retained, until you change them directly from the Standard CMOS Setup program.

If you wish cancel changes you have made and restore the settings used at power-on, select **AUTO CONFIGURATION WITH POWER-ON DEFAULTS**.

Change Password

In the Advanced CMOS Setup program is an item to allow you to set password protection as Setup or Always. When Always is selected, a password must be typed in

each time the system boots up; when Setup is selected you must enter a password each time you wish to access the setup program.

Warning

Password protection is used as a security feature. However, if the password is lost or forgotten, the only way to get past the security access is to send the notebook to an authorized dealer! To prevent any problems, make sure you write the password down, and keep it in a safe location.

Whichever item is selected, you should select **CHANGE PASSWORD** in the main menu to type in the password you wish to use. Until the password is entered, this function will not be in effect. The first time you select Change Password the following message appears:

“Enter CURRENT Password:”

The first time you run this option simply press <Enter>. It is possible that the default password “AMI” is enabled. In this case, pressing <Enter> will not allow you to enter a new password, since you must enter the default password first. In this case, you must first type in “AMI” as the default password before you can enter a new password.

You will then be prompted to enter your new password. You may type in up to six characters for your password and then press <Enter>. You will be asked to verify the password and then this password will be stored in the CMOS and must be entered every time you boot up your system or access the setup program.

You have three chances to enter the correct password. If you fail to enter the correct password on the third attempt the system will hang.

Hard Disk Utility

Included within a BIOS is a program to allow you to format, auto interleave and carry out media analysis on hard disk drives installed in your system.

WARNING

The Hard Disk Utilities built into the BIOS will perform several operations on your hard disk. Each of these options will DESTROY DATA that is on the drive. Before performing any of these functions, make certain all of the information on the drive is backed up.

Select **Hard Disk Utility** from the main menu and press <Enter>. A screen will appear with the specifications of the hard disk drives installed in your system listed at the top of the screen according to the type number you entered for your hard disk drive(s) in the Standard CMOS Setup program. You may then select **FORMAT, AUTO INTERLEAVE or MEDIA ANALYSIS** to perform the relevant operations.

Saving Your Settings

When you have completed adjusting all the settings as required, you must save these settings into the CMOS RAM. Select **WRITE TO CMOS AND EXIT** and press <Enter>. When you confirm that you wish to save the settings your machine will be automatically rebooted and the changes you have made will be implemented. You may call up the setup program at any time to adjust any of the individual items by pressing the <Esc> key during boot up.

If you wish to cancel any changes you have made, select **DO NOT WRITE TO CMOS AND EXIT** and the original settings stored in the CMOS will be retained.

Have you checked the configuration in your software? Is the mouse supposed to be on COM1 or COM2? Are you using a serial mouse? Have you loaded a mouse driver?

I configured my mouse as being on COM2 and it will not work.

The built-in trackball uses COM2. The external serial port must be configured as COM1.

SLC Chapter 9

CHAPTER 9

TROUBLESHOOTING

Your WinBook computer was designed to be transported around and provide trouble free service for a long time. Nevertheless, certain basic precautions should be taken to ensure that the system remains in good working order. In this chapter, we make some recommendations as to how to achieve the most reliable performance for the longest possible time, and how to solve some of the problems that you may encounter.

Basic Precautions

The WinBook is built and designed to be a rugged notebook computer. However, we suggest that when transporting the notebook, pack it into a briefcase or a notebook carrying case. In this way, the plastic shell will be less liable to become scratched or damaged during transportation. In addition, please note the following points:

- Do not subject the WinBook to excessive shocks or severe vibration. The hard disk drive installed in the system was designed to be shock resistant, but within reason.
- Do not place heavy objects on top of the WinBook.
- Do not place the WinBook near to any heat source or subject it to extreme temperature changes.
- Avoid using the computer in an excessively hot or cold environment.

Cleaning the WinBook

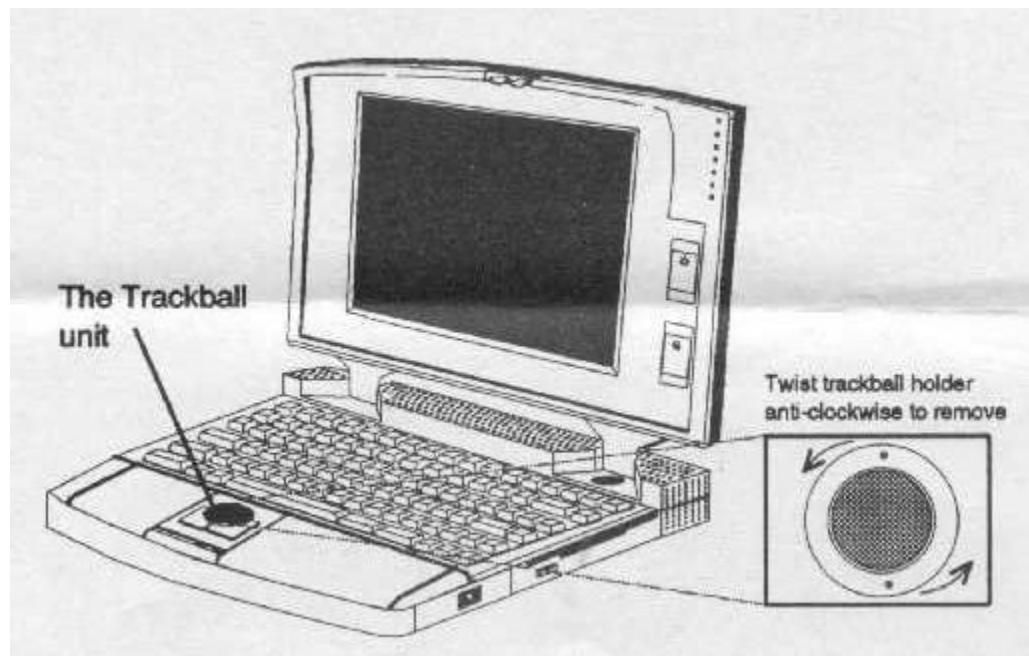
You may use a slightly damp cloth to clean the plastic shell of the system. Take great care that no liquid enters between any of the seams of the shell or into any of the connectors.

Glass cleaner may be used to clean the LCD screen. Do not spray cleaner onto the screen, however, but rather dampen a soft, clean cloth and gently rub the screen. Do not let any liquid run between the LCD and the surrounding frame.

Cleaning the Trackball

After a long period of use, dust and small particles may enter the trackball unit resulting in uneven movement. This can be remedied by removing the trackball and cleaning it, as instructed below:

There are two small recesses on the trackball holder. Insert the two prongs of a pair of spring clip pliers or tweezers into the two recesses and turn anti-clockwise.



Figure

9-1 The Trackball Removal

1. Remove the ball from the trackball recess and wash it in warm soapy water to remove any dirt that may have adhered to the ball itself. Make sure the ball is thoroughly dry before re-inserting.
2. Use a cotton swab soaked in industrial alcohol to clean the inside of the trackball recess to remove any dust or fine particles that have entered the trackball unit, and to clean the two rollers to ensure the roller surface is smooth.
3. Replace the ball in the trackball recess and twist the trackball holder back into place.

Problem Solving

The WinBook was designed and manufactured according to very stringent quality standards. As such, with careful use, there is no reason why it should malfunction. The field of personal computing; however, includes such a diversity of software and hardware combinations that problems will inevitably arise. It is important that you understand how to differentiate between problems caused by hardware malfunction and those that arise out of an incorrect setting or software configuration.

The ability to accurately pinpoint the source of problems will only come with experience, but always adopt a methodical approach to trying to solve problems. If nothing appears on your LCD display when you use a particular software, it does not necessarily mean that the display is faulty, it may mean that the software is not configured correctly for the display. If your mouse is not working it does not necessarily mean that the mouse or serial interface is faulty. Maybe your software is expecting to find the mouse on COM2 and you have connected it to COM1.

There are a million different scenarios most of which are beyond the scope of this manual. In this chapter we mention only some of the more basic hardware problems that are directly linked to the WinBook, and how to solve these problems.

Power Problems

I can boot up the computer but cannot run my software as the screen freezes.

This may occur infrequently when running the WinBook from the battery and when the battery is very low. Connect the AC adapter and recharge the battery. Remember that you can still use the WinBook while the battery is charging.

Nothing happens when I turn on the power switch.

If running from the power adapter, check that the adapter is correctly plugged into both the AC outlet and the WinBook, and that there is power in the power outlet. The power LED on the power adapter should be on. When running on the battery, check that the battery is correctly installed. Check also that the battery is not totally discharged. If it is, recharge it by connecting the power adapter to the system.

Boot Up Problems

The power is reaching my WinBook but the system "hangs" before it is booted up.

Boot up problems are usually caused by an incorrect configuration or statement in the CONFIG.SYS file (see your DOS user's manual). To test whether this is the case, try booting up from a floppy diskette inserted in the A: drive (this diskette must be a bootable system diskette). If this works, edit the CONFIG.SYS file on the hard disk drive and then try booting from the hard disk drive again.

Display Problems

I can see nothing on the LCD display even though my system appears to have booted up correctly.

Adjust the LCD Brightness and Control. Adjust the position of the screen so you are looking directly into it at right angles. Select a different location for the system away from bright light shining directly into the LCD.

I connected an external monitor but the display still only appears on the LCD.

Check the **Set Display Type** item in the Advanced CMOS SETUP in the BIOS SETUP program. Select auto or SimuSCAN to view the display on a CRT monitor.

I connected an external monitor but nothing appears on the external monitor even though the BIOS SETUP setting is correct.

Have you plugged in the power lead from the monitor? Check that the monitor is analog VGA compatible model. Digital monitors such as standard monochrome, CGA or EGA models will not work with the external video outlet on the WinBook.

Peripheral Connection Problems

SLC Appendix A: Connector Pinouts

APPENDIX A _____

CONNECTOR PINOUTS

For your reference, we list here the pin signals of the external connectors on the WinBook user's manual. It is not necessary to use this information to connect peripherals, as all connectors conform to the industry standards.

EXTERNAL VGA MONITOR CONNECTOR

Pin No. Signal

1. Red Signal
2. Green Signal
3. Blue Signal
4. Monitor ID2
5. Ground
6. Ground
7. Ground

Ground 5 1

1. NC
2. Ground
3. Monitor ID0
4. Monitor ID1
5. Horizontal Sync. 15 11
6. Vertical Sync.
7. NC

EXTERNAL SERIAL PORT CONNECTOR

Pin No. Signal

1. Carrier Detect
2. Receive Data
3. Transmit Data
4. Data Terminal Ready
5. Signal Ground
6. Data Set Ready
7. Request to Send
8. Clear to Send
9. Ring Indicator

EXTERNAL PARALLEL PORT CONNECTOR

Pin No. Signal

1. Strobe-
2. 9 Data 0-7
- 10 Ack-
1. Busy
2. PE
3. SLCT
4. Auto Feed
5. Error-
6. Init-
7. SLCTIN-
8. 25 Ground

EXTERNAL KEYBOARD CONNECTOR

Pin No. Signal

1. PS/2 Data

2. Keyboard Data
3. Ground
4. + 5V
5. PS/2 Clock
6. Keyboard Clock

EXTERNAL DOCKING STATION CONNECTOR

PIN NO.	SIGNAL	PIN NO.	SIGNAL	PIN NO.	SIGNAL	PIN NO.	SI
1.	IOCHK-	1.	SA10	1.	MEMW-	1.	H
2.	GND	2.	DACK2-	2.	SD12	2.	G
3.	SD7	3.	SA9	3.	SD8	3.	V _i
4.	RESET	4.	TC	4.	SD13	4.	B
5.	SD6	5.	SA8	5.	SD9	5.	M
6.	IRQ9	6.	BALE	6.	SD14	6.	M
7.	SD5	7.	SA7	7.	SD10	7.	IN
8.	DRQ2	8.	OSC	8.	SD15	8.	M
9.	SD4	9.	SA6	9.	SD11	9.	T
10.	OWS-	10.	MEMCS16-	10.	GND	10.	D
11.	SD3	11.	SA5	11.	MDATA	11.	W
12.	SMEMW-	12.	IOCS16-	12.	MCLK	12.	M
13.	SD2	13.	SA4	13.	KDATA	13.	R
14.	SMEMR-	14.	IRQ10	14.	KCLK	14.	W
15.	SD1	15.	SA3	15.	RX0	15.	D
16.	IOW	16.	IRQ11	16.	RX4	16.	R
17.	SD0	17.	SA2	17.	RX1	17.	FI
18.	IOR-	18.	IRQ12	18.	TX0	18.	H
19.	IOCHRDY-	19.	SA1	19.	RX2	19.	W
20.	DACK3-	20.	IRQ15	20.	TX1	20.	S
21.	AEN	21.	SA0	21.	RX3	21.	H
22.	DRQ3	22.	IRQ14	22.	TX2	22.	H
23.	SA19	23.	BHE-	23.	ACK-	23.	G
24.	DACK1-	24.	DACK0-	24.	PD0	24.	G
25.	SA18	25.	LA23	25.	BUSY	25.	G
26.	DRQ1	26.	DRQ0	26.	PD1	26.	G
27.	SA17	27.	LA22	27.	PE	27.	S
28.	REFRESH-	28.	DACK5-	28.	PD2	28.	A
29.	SA16	29.	LA21	29.	SLCT	29.	A
30.	SYSCLK	30.	DRQ5	30.	PD3	30.	W
31.	SA15	31.	LA20	31.	AFD-	31.	S
32.	IRQ7	32.	DACK6-	32.	PD4	32.	V
33.	SA14	33.	LA19	33.	ERR-	33.	S
34.	IRQ6	34.	DRQ6-	34.	PD5	34.	S

35.	SA13	35.	LA18	35.	INIT-	35.	H
36.	IRQ5	36.	DACK7-	36.	PD6	36.	PI
37.	SA12	37.	LA17	37.	SLIN-	37.	II
38.	IRQ4	38.	DRQ7	38.	PD7	38.	II
39.	SA11	39.	MEMR-	39.	STB-	39.	A
	IRQ3		MASTER-		R		G

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