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UniForm

User's Guide

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Preface

Congratulations on your decision to purchase *UniForm-PC*. It will open new avenues of communication between your computer and many others, giving you the ability to exchange diskettes full of information with people using other types of computers. We think you'll agree that *UniForm-PC* is one of the best additions you've ever made to your computer system.

UniForm-PC allows you to redefine the operating format of one of your floppy disk drives. You manipulate the data on the diskette with the tools you normally use: word processors, file transfer utilities, or other programs. *UniForm-PC* is invisible to you when it is in use.

If you are interested in using Apple or NorthStar CP/M diskettes, you need to have a **Match**Point-PC card installed in your computer before *UniForm-PC* will display those formats in its menu. See Section 4.4 for more information.

The Micro Solutions **Compati**Card diskette controller is the solution to all your disk drive interfacing problems. **Compati**Card is a half-size floppy disk controller card for the IBM PC, XT, AT, or compatibles. It can accomodate up to four drives in any combination of 5 inch (48 TPI, 96 TPI or high capacity AT), 8 inch, and 3.5 inch models. See Section 4.6 for more information.

If you would like to run 8-bit CP/M programs on your computer, you will need **Uni**DOS to do so. **Uni**DOS emulates a Z80 microprocessor running CP/M version 2.2, all on your DOS computer! See Section 4.5 for more information.

This manual assumes that you have a basic working knowledge of your computer system and the programs you will be using. If you have not yet learned to use COPY (for copying files between diskettes) and CHKDSK (for checking how much room is left on a diskette), you should read your DOS manuals and use a practice diskette to learn the basics of them. Once you know the basics, you can move on to *UniForm-PC*.

This user's guide will provide practical examples to supplement the self-prompting menus of *UniForm-PC*. If you want to know more about what *UniForm-PC* does, read the introduction, which follows. When you're ready to start using *UniForm-PC*, take just a moment to read about the documentation conventions used in this manual; then you'll quickly be on your way.

Table of Contents

1.0 Introduction

Since the introduction of the IBM PC, PCDOS and the PCDOS disk format have been accepted as the standard for many new computers. However, a large number of 5 inch diskette based CP/M computers exist in offices and homes around the world. Many of these computers are using the same databases, spreadsheets, and word processors that the PCDOS computers are using. The data files are compatible, but the diskette formats aren't.

In the past, when data files had to be moved from a CP/M diskette to a PCDOS diskette, people struggling with this problem used various means to solve it. For example, they transmitted data serially through a cable or used primitive file conversion programs to convert files from one diskette to another. These methods were time-consuming, laborious, and sometimes expensive. Now that *UniForm-PC* is available, information can be moved between computers quickly and easily.

UniForm-PC gives you the ability to directly read and write diskettes from almost all of the popular CP/M computers and to initialize blank diskettes in the format of your choice. *UniForm-PC* is also easy to use; it has clear, self-prompting menus and sensible warning messages. It works on your existing IBM PC or compatible computer with no modifications. *UniForm-PC* makes your computer think a CP/M diskette is a DOS diskette.

UniForm-PC is so easy to use that you will rarely need these written instructions. Once you have invoked *UniForm-PC* to select a diskette format to work in, you simply use the DOS commands you are already familiar with (such as COPY), your word processor, or your database to create, move, and manipulate text or data. (Your computer works the same way it always did.) To help you become familiar with *UniForm-PC*, we have provided directions that are as concise as possible and we have included plenty of practical examples.

Take a moment to read about the conventions used in this manual. Everything will then be much easier to understand.

1.1 Conventions Used in This Manual

To make reading this guide a little easier, we have clarified certain conventions and phrases:

- "ENTER" or "↵" means that you should press the **ENTER** key.
- "<ctrl>" in front of a character means that you should hold the **CONTROL** key down while pressing the character specified (just as with the **SHIFT** key).
- When a command to the computer is shown, your inputs will appear in **boldface**.
- The word "format" is used several ways in the computer world, which can lead to some confusion.

  In this guide, the word "format" is used to describe the layout of the data on a diskette. Different computers lay out the data differently and therefore use different diskette formats.

  In some manuals, the word "format" refers to the process of initializing a diskette to a particular format. Often this process is referred to as "formatting a diskette." To eliminate confusion, we will refer to the process as "initializing a diskette to a particular format."
- In this manual, DOS refers to either MSDOS or PCDOS, whichever you are using.
- Your computer needs to have a special type of diskette placed in drive A after the power is turned on. Putting the diskette in causes DOS to be loaded, and the "A>" prompt then appears on the screen. We will refer to this type of diskette as a "DOS system diskette." It has to contain at least the DOS operating system and probably has some utility programs on it. If you have an IBM PC-XT that loads DOS from your hard disk, your hard disk drive is considered to be your "DOS system disk."
- The *UniForm-PC* program will allow you to change the operating format of one of your floppy disk drives (usually the second drive on a dual floppy computer). We will refer to this disk drive as the "UniForm drive."

The first step in using *UniForm-PC* is to make a working copy of your diskette. Follow the directions in Section 2.0 of the manual and you'll be using *UniForm-PC* in no time.

1.2 System Requirements

Check the system requirements listed here to make sure that you have everything needed for proper operation of *UniForm-PC*.

- IBM PC, XT, AT, or 100% compatible computer
- one floppy disk drive
- 128K memory
- PCDOS/MSDOS version 2.0 or higher

Options:

- **MatchPoint-PC** if Apple or NorthStar CP/M diskettes are to be used
- **UniDOS** if 8-bit CP/M programs are to be run
- **CompatiCard** if single density is needed or 8 inch drives are to be attached
- Microsoft Mouse or equivalent

2.0 Installation

UniForm-PC must be properly installed on your DOS system diskette before it can be used. Check the system requirements in Section 1.2 to make sure you have everything needed for proper operation of *UniForm-PC*.

2.1 Making a Working Copy

The first thing to do is to make a working copy and save the original diskette as a backup. Use the following procedure to create a working copy of *UniForm-PC* on your DOS system diskette.

1) Turn on your computer and insert your DOS system diskette. Make sure you have the DOS system prompt "A>" before you proceed to the next step.

2) Place your *UniForm-PC* master diskette into an available disk drive.

3) Copy the *UniForm-PC* files to the DOS system diskette. For our example, we will assume that you put the master *UniForm-PC* diskette into drive B. If you inserted it into a drive other than B, substitute the correct drive letter in place of the B in the following command:

   A>copy b:*.* a:↵

   If you receive an "insufficient disk space" error message while you are copying the *UniForm-PC* files, it means that the diskette you are copying to is full. In this case, you must either erase some files from your DOS system diskette, using the DEL command, or try using another diskette and repeating the steps until you are successful.

4) *UniForm-PC* should now be on your DOS system diskette. You can therefore remove the *UniForm-PC* master diskette and put it in a safe place.

5) The *UniForm-PC* diskette has a file on it called PRINT.ME. The file contains additional information gathered since this guide was printed. Use the following command to list the file to your printer:

   A>copy print.me prn:↵

2.2 Running UINSTALL

The *UniForm-PC* diskette includes an automatic installation program for your convenience. UINSTALL will install *UniForm-PC* on your DOS system disk. If you are installing *UniForm-PC* for the first time, the UINSTALL program will ask you a couple of questions about your computer.

If *UniForm-PC* has already been installed, UINSTALL will not ask any questions about your computer. Instead it will allow you to make changes to the existing installation using an editing screen. If you have added any nonstandard disk drives that *UniForm-PC* can support, you must use UINSTALL to specify their characteristics and to inform *UniForm-PC* of their presence.

Use the following procedure to install *UniForm-PC* on your DOS system diskette:

1) Turn on the computer and put in the DOS system diskette containing UINSTALL (for fixed disk computers follow your normal system loading procedure). At this point the DOS system should prompt "A>".
2) Type the command:

   A>uinstall↵

3) UINSTALL will display a sign-on message and ask you to enter the drive letter that contains the DOS system disk from which you normally boot. For fixed disk users, this is usually drive C (if your system boots from the fixed disk).
4) The UINSTALL program will now ask a couple of questions about your computer. After you answer the questions, *UniForm-PC* will be installed on the DOS system disk and you will be returned to the DOS system prompt.
5) DOS must be rebooted before *UniForm-PC* can be used. This can be done by pressing **<ctrl–alt>Del**.

For more detailed information about the UINSTALL program, refer to Appendix A.

3.0 Using UniForm-PC

UniForm-PC can perform many functions, so you will see several options after you invoke it. One of the most important functions is the selection of the desired diskette format for a floppy drive (which is usually drive C on a two floppy drive system). Once you have used *UniForm-PC* to select a diskette format, you can put a diskette of that format into the drive and use it just as you normally would. *UniForm-PC* makes your computer think the diskette is in DOS format.

The diskette that you want to work on may have come from another make of computer, or you may want to put information on a new diskette and send it to someone with a different make of computer. If you are creating a new diskette, you will need to use the diskette initializer function to initialize the diskette to the proper format before you use it.

The most important feature of *UniForm-PC* is its simplicity. Once you've selected a format from the *UniForm-PC* menu, you simply use familiar commands to manipulate data on the diskette. You can work directly on that diskette with your word processor. You can easily copy files between your DOS format and the selected format by using the COPY command. You can, for example, display the directory of a diskette by using the DIR command or display the amount of space left on a diskette by using the CHKDSK command.

3.1 Disk Drive Letters

Before *UniForm-PC* is used, a brief explanation of disk drive letters is necessary to avoid confusion. Drive letters are assigned by DOS, in alphabetical order starting with A. The UniForm drive will be assigned the next letter available after your existing DOS disk drives. This means that the drive letter that DOS assigns to *UniForm-PC* (the UniForm drive) will not be an existing drive letter.

When *UniForm-PC* is used, one of the floppy disk drives is now accessed by either of *two* drive letters. The first letter is the same one you've always used to access that floppy drive (typically B in a two floppy drive system). The other letter is the UniForm drive letter (typically C in a two floppy drive system). When you use *UniForm-PC*, you will now have two drive

letters referring to the same floppy disk drive. The letter you use to refer to this floppy disk drive indicates to DOS whether you want to use a standard DOS diskette or a nonstandard format through *UniForm-PC*. You should never try to access a diskette through *UniForm-PC* using drive letter A or B. The drive letters A and B make *UniForm-PC* assume that you have a DOS format diskette in the drive; a read error is therefore produced if a non-DOS diskette is in the drive.

3.2 Selection of Disk Formats

Disk format selection allows you to choose the operating format for the UniForm drive. Having selected a new format, you can place a diskette initialized to that format in the UniForm drive and use it as you normally would, with any of your DOS programs.

1) Turn on the computer and put in the DOS system diskette containing *UniForm-PC* (for fixed disk computers follow your normal system loading procedure). At this point the DOS system should prompt "A>".

2) Type the command:

```
A>uniform↵
```

The format selection menu should appear.

Now look at the screen. At the top is the version of *UniForm-PC* and the computer make and model it's configured for. Below the version is a line showing the menu number you are looking at and how many menus there are.

Next you'll see a menu in which each entry is made up of a format letter, a diskette type, and a description of the make and model of computer that they are used in. The menu is in alphabetical order.

The diskette types are as follows:

```
SS - single sided (only one side is used)
DS - double sided (both sides are used)

SD - single density
DD - double density
HD - high density (IBM PC-AT only)

48 - 48 tracks of information per inch (TPI) of diskette
96 - 96 tracks of information per inch (TPI) of diskette
8" - 8 inch floppy diskette
3" - 3.5 inch micro floppy diskette

CPM - indicates a CP/M format
DOS - indicates an MSDOS format
```

Below the menu is a line showing the currently selected format and the UniForm drive letter. At the bottom is a prompt line showing which options you can enter at this time. Let's try the options out one at a time.

In case you can't remember what the options in the disk format menu are, *UniForm-PC* has a help screen to explain. Press **?** to see that screen. The disk format menu will then be replaced by the help screen, on which there is a brief description of each available option. After you read the screen, press any key to get back to the format selection menu.

3) Press **A**. The selected format shown above the prompt line now corresponds to the format at position A of the format selection menu. The selected format is also highlighted in the menu for easy recognition. By simply typing a format letter, you can select the format you want.

4) Press the **SPACE BAR**. The current format shown now indicates no format selected. Pressing the **SPACE BAR** disables the UniForm drive.

5) Press **2**. The menu number indicated now shows that you are on menu 2. Also, the menu of formats has changed to reveal the next group in alphabetical order. Try pressing other menu numbers. Note that when you select a nonexistent menu number, *UniForm-PC* will beep and print a message near the bottom of the screen. If it does this, just type a good menu number and continue. Take a moment to look at the various menus and, just for fun, try some numbers that don't exist.

6) Find the menu that has the "Kaypro II [SSDD:48:CPM]" format on it. Press the letter for that format. The current format should indicate "Kaypro II [SSDD:48:CPM]" above the prompt line. If you select the wrong format, just select another until you get it

right. At this point you have found and selected the format of your choice.

7) Press **ENTER**. *UniForm-PC* will return you to DOS. If you have followed this procedure correctly, a message indicating which format your UniForm drive has been set to should be printed on the screen as *UniForm-PC* exits. The message should look like this:

```
UniForm-PC Drive x set to: Kaypro II [SSDD:48:CPM]
```

where x indicates the UniForm drive letter. This message will be printed on the screen after every program finishes running. It is printed to remind you about the selected *UniForm-PC* format. You can suppress the message by turning off the *UniForm-PC* status line when you are installing *UniForm-PC* with the UINSTALL program.

The format selected for the UniForm drive will stay active until one of the following conditions occurs:

a) The computer's power is turned off.

b) The computer is reset by the pressing of **<ctrl–alt>Del**.

c) The **SPACE BAR** is pressed to select "no format" while you are in *UniForm-PC*'s format selection menu.

3.2.1 Cursor Keys and Mouse

When you are in the *UniForm-PC* format selection menu and after a format has been selected, the selected format can be changed using the cursor keys. The highlighting bar over the selected format can be moved up, down, left, or right when the corresponding cursor key is pressed. Following is a summary of the cursor keys and their uses:

↑ The cursor up key will move the selected format backward through the alphabetical list of formats. If the selected format is at the top of the left column, pressing the cursor up key will change it to the last format in the previous menu, if one exists.

↓ The cursor down key will move the selected format forward through the alphabetical list of formats. If the selected format is at the bottom of the right column, pressing the cursor down key will change it to the first format in the next menu, if one exists.

← The cursor left key will move the selected format to the same position in the column to the left of its current position. If the selected format is already in the left column, it will be moved to the same position in the right column of the previous menu, if one exists.

→ The cursor right key will change the selected format to the same position in the column to the right of its current position. If the selected format is already in the right column, it will be changed to the same position in the left column of the next menu, if one exists.

PgUp The PgUp key will change the selected format to the same position in the previous menu, if one exists.

PgDn The PgDn key will change the selected format to the same position in the next menu, if one exists.

Home The Home key will change the selected format to the first entry in the first menu.

End The End key will change the selected format to the last entry in the last menu.

If you have a Microsoft Mouse or equivalent and its driver installed in your computer, *UniForm-PC* will also use it to move the highlighting bar around. When you are in the format selection menu, the left button will correspond to the ENTER key and the right button will correspond to the SPACE BAR. When *UniForm-PC* asks you a question requiring a Y or N response, the left button will be a Y and the right button will be an N.

3.3 Initializing a Diskette

Your DOS system includes a FORMAT program to initialize diskettes to DOS format. *UniForm-PC* performs the same function for you, but with the following additions:

- *UniForm-PC*'s diskette initializer allows you to select your choice from a menu of formats, including your host format. For example, if you want the diskette to operate in a Kaypro II computer, simply

select "Kaypro II" from the menu. When *UniForm-PC* finishes the initializing, the diskette will be in the format used by the Kaypro II computer.

- *UniForm-PC* checks the integrity of each track on the diskette immediately after it has been initialized. If it detects an error, it will automatically try to initialize that track nine more times before deciding that the diskette has a bad spot there. At the end of the initializing procedure, *UniForm-PC* will report if it encountered any permanent errors while initializing the diskette.

To use *UniForm-PC* to initialize a diskette in the Kaypro II format:

1) Use *UniForm-PC* to select the "Kaypro II [SSDD:48:CPM]" format for your UniForm drive.

2) Put a blank diskette to be initialized to Kaypro II format into the UniForm drive. Press **<ctrl>I** (or **TAB** if your keyboard has a **TAB** key). Note the message: *Initializing a disk will erase any existing data on the disk*! Near the bottom of the screen you'll see that the diskette is going to be initialized in the "Kaypro II [SSDD:48:CPM]" format. If you change your mind at this point, you can reply by pressing **N** to avoid initialization. If you want to continue, press **Y**.

   In the middle of the screen you should see a message alternating between "Initializing" and "Verifying." This message will continue until the diskette is completely initialized. On occasion you may notice a "Retry" followed by a number flashing on the screen. This message tells you that *UniForm-PC* has detected an error while verifying the current track and is in the process of reinitializing that track. If the error persists after ten tries, *UniForm-PC* will consider that track to be permanently bad and will continue with the next track.

3) When diskette initialization is complete, a message indicating the number of permanently bad spots on the diskette will be displayed. If there are any bad spots, you should discard that diskette. The price of a diskette is not worth the misery of losing data that may have taken you hours to create.

   Usually there won't be any permanent errors, and the message will confirm that fact. In this case the diskette is ready to use.

4) *UniForm-PC* will now ask if you want to initialize another diskette. Respond by pressing **N**, and you'll be returned to the menu of disk formats.

5) Remove the diskette that you initialized to Kaypro II format and press **ENTER** to exit *UniForm-PC*. Save this diskette because you'll use it later for learning how to copy files.

You should now have a diskette that is ready to be used in a Kaypro II computer. We could have created one in any of the formats in the menu.

3.4 Sample File Copying

If you have read the previous sections on selecting disk formats and initializing diskettes, you should now be able to copy files between one of your DOS diskettes and a diskette in the format of your choice. The following examples will use the DOS COPY command to copy a file first in one direction and then in the other.

3.4.1 Copying from DOS to Another Format

For our example, we'll assume that you have a file on a DOS diskette named SAMPLE.TXT. We want to place the file SAMPLE.TXT on a "Kaypro II [SSDD:48:CPM]" format diskette (the one initialized in Section 3.3).

1) Use *UniForm-PC* to select the "Kaypro II [SSDD:48:CPM]" format for your UniForm drive.

2) Put a diskette initialized to "Kaypro II [SSDD:48:CPM]" format into the UniForm drive. Put the DOS format diskette with the file SAMPLE.TXT into drive A. At the DOS prompt, type in the command:

```
A>copy a:sample.txt c:↵
```

   (In this example, "A" is a DOS format drive and "C" is the UniForm drive. Fixed disk systems may use different letters.)

The file SAMPLE.TXT will now be copied from drive A (DOS format) to the "Kaypro II [SSDD:48:CPM]" format diskette in the UniForm drive. If you get an "insufficient disk space" error, it means there was not enough room for the file on the receiving diskette.

You can see that copying files with COPY works the same way it always has. In fact, all your programs will work the same as they did before. *UniForm-PC* is invisible to both you and your programs when it is in operation. You can operate on the Kaypro II diskette directly, just as though it were in the DOS format.

3.4.2 Copying to DOS from Another Format

For this example, we'll assume that you have a diskette in your UniForm drive that is in the "Kaypro II [SSDD:48:CPM]" format (the one initialized in Section 3.3). The Kaypro II diskette has a file on it named SAMPLE.TXT. We want to place the file SAMPLE.TXT on a DOS format diskette.

1) Use *UniForm-PC* to select the "Kaypro II [SSDD:48:CPM]" format for your UniForm drive.
2) Put a diskette initialized to "Kaypro II [SSDD:48:CPM]" format into the UniForm drive. At the DOS prompt, type in the command:

   A>copy c:sample.txt a:↵

   (In this example, "A" is a DOS format drive and "C" is the UniForm drive. Fixed disk systems may use different letters.)

   The file SAMPLE.TXT will now be copied from the UniForm drive (Kaypro II format) to the DOS format diskette in drive A. If you get an "insufficient disk space" error, it means there was not enough room for the file on the receiving diskette.

You can see that copying files with COPY works the same way it always has. In fact, all your programs will work the same as they did before. *UniForm-PC* is invisible to both you and your programs when it is in operation. You can operate on the Kaypro II diskette directly, just as though it were in the DOS format.

4.0 Advanced Features

This section describes the many advanced features of *UniForm-PC*. Although the terminology is as simple as possible, it is geared to the experienced computer user.

4.1 Setting a Default Format

UniForm-PC allows you to define a default format for the UniForm drive. The default format will be set automatically every time the system boots up, without the use of the *UniForm-PC* menu. This feature is handy for applications using primarily one format. You can still change the selected format by using the *UniForm-PC* menu. Use the following procedure to set a default format:

1) Run the UNIFORM program and select a format for the UniForm drive from the menu.
2) Press **<ctrl>D** to set the default format.
3) *UniForm-PC* will prompt you for the letter of the drive that contains the system disk. If you boot the system from a floppy diskette, place the boot diskette into an available drive and respond with the drive letter.
4) *UniForm-PC* should display a message indicating that the UNIFORM.SYS file has been updated with the new default format. You should now press any key to return to the main menu.

Every time the system boots up, the UniForm drive will be set to the format that you selected, without the use of the *UniForm-PC* menu.

4.2 Single-line Operation

Often it is desirable to perform certain *UniForm-PC* operations without having to type responses to many prompt lines. *UniForm-PC* has the capability of changing disk formats and initializing diskettes by entering the responses to each prompt on the command line. This is sometimes referred to as batch processing of commands. Batch processing is very useful if you have to change formats or initialize a diskette from a BATCH file.

To use this feature, you must know every key that you type in response to each prompt line. These keys are then typed after the UNIFORM command.

Before using *UniForm-PC* functions from the command line, you should be aware of the following important points:

- At least one blank must be present between the *UniForm-PC* command and the prompt responses. After that point, blanks are ignored and can therefore be inserted between keystrokes to make the command more readable.
- Control characters cannot be entered on a command line, so *UniForm-PC* will accept the following character sequences in place of certain keys:

`/c` It is often desirable to accept a response from the keyboard in the middle of a command string. If the `/c` sequence is used in place of a keystroke, *UniForm-PC* will wait for the next response from the keyboard before continuing.

`/e` The `/e` sequence is used in place of the ESC key. The ESC key can be used instead of the ENTER key when you want to exit the format selection menu and go back to the DOS system prompt.

`/i` The `/i` sequence is used in place of the <ctrl>I key to indicate that you want to initialize a disk in the currently selected format. Be careful if you use this sequence, since initializing a disk erases everything on it.

`/q` The `/q` sequence is the "quiet" option; and it doesn't replace any key. It is used in a command line when you don't want any console output to be sent to the screen. If you don't want any console output at all, you must enter the `/q` sequence before pressing any other key in the command line. Once the quiet option has been used, there is no way to turn the console output back on. Remember that if you have specified the quiet option and you are then prompted for a response, the prompt line will not be displayed and *UniForm-PC* may appear to lock up. *UniForm-PC* isn't really locked up, however; it's just waiting for you to type the proper response to its invisible prompt line.

`/r` The `/r` sequence is used in place of the ENTER key. Anywhere you would normally press the ENTER key, you will need to use this sequence instead, since an ENTER cannot be imbedded in a command line.

`/s` The `/s` sequence is used in place of the SPACE BAR, since spaces are ignored in the command line.

4.2.1 Single-line Examples

The following *UniForm-PC* batch processing commands are provided as examples. They should answer any questions you have about this feature.

```
A>uniform a /e↵
```

In this example, *UniForm-PC*'s format selection menu will appear, format "A" will be selected as the current format, and *UniForm-PC* will then exit to the DOS system.

```
A>uniform /q a /e↵
```

This command line will perform the same function as in the last example, but *UniForm-PC* will not display anything on the console.

```
A>uniform /q /s /e↵
```

This command will enter *UniForm-PC*'s format selection menu, disable the UniForm drive, and then exit back to the DOS system. All this will be accomplished without any console output.

```
A>uniform /s /r↵
```

In this example, the UniForm drive will be disabled and you will be returned to the DOS system.

```
A>uniform 2 c /i /c /c /e↵
```

This command line will enter *UniForm-PC*'s format selection menu, switch to menu #2, and select format "C" as the current *UniForm-PC* format. Then the `/i` will instruct *UniForm-PC* to initialize a diskette in the current format. The next response that verifies your intent to initialize the diskette will be taken from the keyboard. When you respond by pressing **Y**, the diskette will be initialized. Once the diskette has been initialized, the number of permanent errors discovered will be displayed on the screen, and *UniForm-PC* will again wait for you to type the next response. This has been done so you will have a chance to see if any permanent errors have been discovered on the diskette just initialized. After you press **N** to indicate that you don't want to initialize another diskette, *UniForm-PC* will display menu #2. Finally the `/e` sequence will cause *UniForm-PC* to exit back to the DOS system. Format "C" on menu #2 will be *UniForm-PC*'s current format.

4.3 Additional Disk Drives

UniForm-PC is capable of supporting many types of disk drives, including 48 TPI, 96 TPI, 96 TPI high capacity (IBM PC-AT only), 8 inch, and 3.5 inch. To add 8 inch drives, a Micro Solutions **CompatiCard** disk controller board will be necessary. The installation of disk drives should be done only by someone who has the proper hardware knowledge. We cannot supply specific instructions for adding additional disk drives to your system. If you must use this feature of *UniForm-PC* and you don't know how to add the drive, contact your computer dealer for assistance.

When adding drives to your system, note the following points:

- If you are adding an 8 inch drive to your system, you need a Micro Solutions **CompatiCard** disk controller. **CompatiCard** can be used as a direct replacement for the IBM diskette controller. It can also be used as a secondary controller for use with the IBM AT and computers that have built-in floppy disk controllers.
- If you are adding a 3.5 inch drive to your system, you should add the type of drive that connects directly to a 5 inch disk controller using a 34 pin connector.
- If you are installing a 96 TPI, 8 inch, or 3.5 inch drive on your system, you must know its physical drive address in order to configure *UniForm-PC*. The physical drive address should be a number between 0 and 3 and should not be confused with the logical drive letter (A, B, etc.) that you use to refer to disk drives. A unique physical address is assigned to each drive by a jumper on the drive itself. The first disk drive is usually assigned address 0, the next 1, etc.

Before you can access additional disk drives, you must configure *UniForm-PC* by using the UINSTALL program. Refer to Section 2.2 for instructions on how to run UINSTALL. You will need to specify the physical drive address of the additional drive and whether your drive is single or double sided.

If you have installed everything properly, *UniForm-PC* should now be ready to work with your additional disk drives.

4.3.1 Using an Additional Disk Drive

Once you have properly configured *UniForm-PC* for the additional drives, you should notice more formats in *UniForm-PC*'s format selection menu. You can identify the 96 TPI formats in the menu by the **96**, the 8 inch formats by the **8"**, and the 3.5 inch formats by the **3"** at the end of the "Type" column. When you select a 96 TPI format from the menu, *UniForm-PC* will make your 96 TPI drive the UniForm drive. You will still use the same drive letter to reference your UniForm drive, but *UniForm-PC* will select your 96 TPI drive instead. This will effectively assign more than one physical disk drive to the same drive letter, but *UniForm-PC* will use the proper disk drive according to the format you have selected. Similarly, when you select an 8 inch format or a 3.5 inch format from the menu, *UniForm-PC* will make the appropriate physical disk drive the UniForm drive.

4.4 Apple and NorthStar CP/M

UniForm-PC supports both Apple and NorthStar CP/M formats with the addition of a **Match**Point-PC card installed in your computer. The diskette controller in your computer can't access Apple or NorthStar CP/M diskettes. **Match**Point-PC works along with your existing diskette controller to give you this capability. Software is also included with **Match**Point-PC to give you the capability of reading and writing to Apple DOS 3.3, SOS, or ProDOS diskettes.

Contact your dealer or Micro Solutions for more information on **Match**Point-PC.

4.5 Running 8-Bit CP/M Programs

CP/M program files will not run with DOS because the two operating systems use different microprocessor chips. If you want to run 8-bit CP/M programs on your DOS computer, you should purchase **Uni**DOS.

UniDOS is a Micro Solutions product that lets you run 8-bit CP/M programs directly on your computer without additional hardware. **Uni**DOS emulates a Z80 microprocessor and creates a complete CP/M version 2.2 compatible environment for your programs. **Uni**DOS even imitates many popular video terminals, which you can select from a menu. **Uni**DOS is also available with a half-size 8 MHz Z80 card for maximum speed.

UniForm-PC and **Uni**DOS work together, allowing you to run their names! No modification to the CP/M files are needed; thus you can directly exchange CP/M program diskettes between CP/M and DOS computers.

The combination of *UniForm-PC* and **Uni**DOS gives you flexibility and capabilities that can't be matched by any other programs—and at a price that can't be beat! For more information about **Uni**DOS, contact your dealer or Micro Solutions.

4.6 CompatiCard Disk Controller

CompatiCard is a versatile floppy disk controller card for the IBM PC, XT, AT, and compatibles. It can accommodate up to four drives and includes a connector for two externally mounted drives. **Compati**Card will support any combination of 5 inch (48 TPI, 96 TPI, or high capacity AT), 8 inch, and 3.5 inch drives. It will also support both single and double density on all drives for maximum flexibility.

CompatiCard can be used as a direct replacement for the standard IBM floppy disk controller card used in the PC and XT. It can also be jumpered as a secondary controller for use with the IBM AT and computers that have built-in floppy disk controllers.

4.6.1 CompatiCard Features

- **Compati**Card is a half-size direct replacement for the IBM PC and XT diskette controller.
- It supports 8 inch drives (when used with *UniForm-PC*).
- It supports both single and double density on all types of drives.
- It supports up to four drives. Drives can be any combination of 5 inch (48 TPI, 96 TPI, or high capacity AT), 8 inch, and 3.5 inch.
- Up to four **Compati**Cards can be installed in a computer to support up to 16 floppy drives.
- **Compati**Card can be used in computers that already have a built-in disk controller.
- Connectors are provided to support four internally mounted drives or two internal and two external drives.
- **Compati**Card offers high quality construction backed by a one year warranty. Contact your dealer or Micro Solutions for more information on **Compati**Card.

Appendix A UINSTALL

The UINSTALL program is used to install *UniForm-PC* on a DOS system disk. If UINSTALL notices that *UniForm-PC* is not already installed, it will ask a couple of questions about your computer system. This is all that is usually necessary for most installations. If you have added disk drives or another diskette controller to your system, UINSTALL must be run again and some information about the disk drives must be entered. If *UniForm-PC* is already installed when you run UINSTALL, *UniForm-PC* will display a configuration screen. By moving a block cursor around this screen, you can make changes to the configuration of *UniForm-PC*.

This appendix will describe the various elements in the configuration screen. If you need instructions on how to run UINSTALL for the first time, see Section 2.2. This appendix assumes that you have already installed *UniForm-PC* for the first time and you are running UINSTALL again to make some additional changes to the configuration. Remember that UINSTALL will not display the configuration screen on a first-time installation. You must run it again to get access to the configuration screen.

Once you have run the UINSTALL program and entered in the drive letter for the system disk, a set of instructions will be displayed. After reading these instructions, press any key and the configuration screen will be displayed.

When the configuration screen is displayed, you should notice a block cursor (highlighted bar). This cursor can be moved around the screen with the cursor keys.

At the right side of the screen is a box that displays your options. The option list shows you which keys are valid responses. As you move the cursor around the screen, you will notice the options changing.

Following is a description of each of the parameters that can be changed using the UINSTALL program:

Drive Address

A drive address is a number between 0 and 15. This number is used internally by DOS to select, in hardware, which floppy drive to use. DOS keeps an internal table that correlates your specified drive letters with the correct physical drive addresses. Usually

the first floppy disk drive (A) is given the drive address of 0, the second is 1, etc. Each floppy drive has a unique address. On most systems it is determined by which of the connectors on the flat ribbon disk drive cable is attached to the drive. On some systems it is assigned with a jumper on the drive itself.

No matter what physical drive address you select, *UniForm-PC* will not interfere with a hard disk drive.

Step Rate

The step rate tells *UniForm-PC* how fast it can move the read/write head in the floppy drive from track to track. If this value is set too low, the drive may experience many read errors. If it is set too high, the drive will work properly, but it may make more noise than usual when moving the heads. The step rate varies among manufacturers. You should consult the drive manufacturer if you want to know the recommended step rate for your drive.

Drive Characteristics

UniForm-PC must be told the characteristics of a disk drive. The options that you will choose between will depend on the type of diskette drive and controller card you are installing. If you specify a drive that you do not have, *UniForm-PC* will not work properly.

UniForm Status Line

The UniForm status line is printed every time a program terminates as long as you have selected a format for the UniForm drive. If no format has been selected for the UniForm drive, the status line will not be printed. This option allows you to eliminate the status line.

Initialization Verify

When *UniForm-PC* initializes a diskette, you have a choice whether or not the diskette is verified. Verification will check the diskette for bad spots and report if any were found. Initialization of a diskette takes longer if verification is turned on.

Ask Before Installing

A portion of *UniForm-PC* is loaded into memory when the DOS system boots up. You can tell *UniForm-PC* to ask you if it should be installed when the system boots. This is useful if you are conserving memory space, since the resident portion of *UniForm-PC* takes up some memory.

Single Drive Copying

If you are running *UniForm-PC* on a single drive system, you must answer yes to this question. This option instructs *UniForm-PC* to prompt you when a diskette change is needed. This will enable you to copy files between two diskettes with only one disk drive.

A.1 Installing MatchPoint-PC

The Micro Solutions **Match**Point-PC card enables *UniForm-PC* to use Apple and NorthStar CP/M diskettes. After properly installing the **Match**Point-PC card according to the manual, you must tell *UniForm-PC* about it before any additional formats will appear in the menu.

Follow these instructions to install *UniForm-PC* for the **Match**Point-PC card.

1) Run the UINSTALL program and proceed to the configuration screen.
2) Using the ↑ key, move the cursor block to the second disk controller area.
3) Press the + key until **Match**Point-PC appears as the second disk controller.
4) Press E (to exit) followed by ↵ (to save changes).

The *UniForm-PC* menu will now display the Apple and NorthStar formats in the menu.

A.2 Installing CompatiCard

UniForm-PC can support up to four diskette controllers in the same computer. The first diskette controller can be either a standard controller or a **CompatiCard**. The remaining three can only be Micro Solutions controller boards. **CompatiCard** can be jumpered to any of the four possible diskette controller numbers.

UniForm-PC supports up to 16 drive addresses (0 through 15). The controller number determines the range of drive addresses assigned to the controller. The first controller will be used for drive address 0 through 3, the second for 4 through 7, etc. For example, when specifying the drive address for the third drive on the second controller, you would use a drive address of 6.

Use the following instructions for installing *UniForm-PC* for use with a **CompatiCard** controller.

1) Install **CompatiCard** in your computer according to its manual. If you installed any non-standard diskette drives, make sure they are wired and jumpered according to the **CompatiCard** manual. If you have difficulty installing the drives, you should consult a qualified technician.
2) Run the UINSTALL program and proceed to the configuration screen.
3) Using the ↑ key, move the cursor block to the proper disk controller number. The controller number to use depends on the position of the two jumpers (J1 and J2) on the **CompatiCard**. Refer to the installation section of the **CompatiCard** manual for jumper settings.
4) Press the + key until **CompatiCard** appears for the disk controller.
5) Using the arrow keys, move the cursor block to the disk drive area. Alter the drive addresses, step rates, or drive characteristics as necessary for the drives that are attached to the **CompatiCard**.
6) Press E (to exit) followed by ↵ (to save changes).

Appendix B Messages

UniForm-PC may occasionally display a message to alert you to a possible error. If *UniForm-PC*'s audio warning alert is active, you will hear a two-tone sound before a warning message is displayed. The warning message will appear in a nondestructive window in the middle of the screen. The warning message will remain displayed until you press any key to continue.

The messages have been made as clear and concise as possible. Following are all the warning messages, with a brief explanation of each one.

A bad character was found in a CP/M filename; some files may not be accessable

This message indicates that there is at least one filename in the CP/M directory containing a character that is invalid in a DOS filename. Following is a display of valid characters for DOS filenames:

```
A-Z 0-9 ! $ & # % ' ' ( ) - @ { } _
```

If any CP/M filename has a character that is not in this display, you will not be able to access that file using *UniForm-PC*. If a file cannot be accessed because of an invalid character, you should rename the file using characters that are valid for a DOS filename. You will probably have to perform the renaming function on a CP/M machine because DOS won't let you use the invalid character in the rename command.

A disk format must be selected from the menu before you can initialize

You have tried to initialize the diskette in the UniForm drive without first telling *UniForm-PC* what format to initialize to. Make your choice from the format selection menu; then perform the initialization.

A file with a nonzero user number was detected in the CP/M directory

This message is trying to warn you that the CP/M diskette you are using contains at least one file on a user number other than zero. Since DOS does not have user numbers, you should not use CP/M diskettes that have files on a user number other than zero. You may still use this diskette with *UniForm-PC*, but you should be aware of the following points:

- When this diskette is accessed through *UniForm-PC*, all the filenames on it from all user numbers will appear in one directory.
- If the CP/M diskette contained files in different user numbers with the same name, unpredictable results may occur if you try to access those files from DOS.
- If you write anything to this CP/M diskette, *UniForm-PC* will translate all the files on the diskette to user zero. You may read from this diskette without disrupting the files in other user numbers.

Either the directory on your CP/M disk is bad or the selected format is wrong

This message is displayed when *UniForm-PC* finds something in the CP/M directory that it can't cope with. If you get this message, you should verify that the selected CP/M format matches the format of the diskette that you are trying to access. If you are sure that the format is specified properly, you should copy all the files to a blank initialized diskette using the PIP command on the CP/M computer; then try the new diskette.

Not a valid option; try again or press ? for help

The character you pressed did not correspond to any of the allowable inputs. Read the prompt line near the bottom of the screen to find out what the allowable inputs are. If you are unsure what they mean, press ? and a help screen that explains their functions will appear. Try again when you're ready.

Out of directory space on CP/M disk; deletion of some files will be necessary

The CP/M diskette that you were writing to doesn't have enough space in its directory to hold another file. This isn't a fatal error as long as you delete a file from the CP/M diskette before you remove the diskette from the machine.

Permanent errors were detected when verifying the disk

While initializing the diskette in the UniForm drive, places that would not initialize properly were found. You have either a bad diskette or a hardware problem with your computer. Try another diskette. If you determine that the diskette is bad, throw it away. Bad diskettes cause a lot of misery when you lose valuable data.

Subdirectories are not permitted on CP/M disks and should be removed

This message is telling you that you just created a subdirectory on your CP/M diskette. Since CP/M does not support subdirectories, you should remove it (using the RMDIR command) before you bother putting any files into it.

That menu does not exist, use 1 thru #

The number you entered while in the format selection menu does not correspond to a valid menu screen. The "#" in the message will be replaced by the highest menu number available when it appears on your computer. Near the top of the screen is a message showing the number of screens available. Use a number in that range and try again.

The UniForm menu must be used to select a format before using this drive

This warning message is telling you that you tried to access the UniForm drive before telling *UniForm-PC* what format you wanted to use. You must select a format from the *UniForm-PC* menu before attempting to access the UniForm drive.

This selection can only initialize
Do you want to ignore this selection and exit the program (y/n)?

You have tried to set the UniForm drive to an improper format by exiting the format selection menu with an "initialize only" format selected. Press Y to return to the main menu with no format selected. Press N to go back and select a format that is not "initialize only" for the UniForm drive.

Warning! Initializing the disk will erase any existing data.
Are you sure that you want to initialize this disk?

Information on a diskette is stored magnetically. Writing new information erases anything that was there previously (just as recording music on a cassette tape does). Initializing a diskette will write information on the entire diskette, so it will wipe out anything that previously existed. Don't initialize a diskette that has any valuable information on it.

Your diskette has a write protect label on it

You have just tried to write some information on a diskette, but the "write protect" notch on the diskette is covered. This inhibits the write operation. Remove the tape from the "write protect" notch and try again. On 8 inch diskettes the opposite is true. The tape must be placed over the notch before you can write to the diskette.

Your UniForm files have different version numbers
UNIFORM.SYS Version X.XX
UNIFORM.EXE Version Y.YY

The *UniForm-PC* system consists of a device driver UNIFORM.SYS and the format selection menu UNIFORM.EXE. The version numbers of these two files must match before *UniForm-PC* will proceed. Make a new working copy of *UniForm-PC* from your master diskette and try again.

Appendix C Troubleshooting

If you experience trouble using *UniForm-PC*, it could be for one of several reasons. Read the following problem descriptions to see if any match those you are experiencing. If you can't resolve the problem, see Appendix F (Technical Support).

When you are running the UNIFORM program, it tells you that UniForm-PC is not installed in your system.

This problem occurs when *UniForm-PC* doesn't find its resident portion in memory. The resident portion UNIFORM.SYS must be loaded by DOS when the system boots. Make sure you have properly installed *UniForm-PC on your system disk*; then reboot your computer.

After you have properly selected a diskette format, the diskette won't read properly.

Make sure you are trying to access the diskette *using the UniForm drive letter.* You should never try to access a diskette through *UniForm-PC* using drive letter A or B. The drive letters A and B make *UniForm-PC* assume that you have a DOS format diskette in the drive; a read error is therefore produced if a non-DOS diskette is in the drive.

A number of disk formats may not work reliably on the IBM PC (because it uses the NEC 765 disk controller chip). There is a way around this problem; therefore, these formats were not eliminated from the *UniForm-PC* menu.

If you find a disk that will not work properly, place a "write protect" label over the index hole on the diskette. The index hole is the small hole just to the side of the large hole in the center of the diskette. When you put the label over the hole, don't press down very hard. You want to keep the label from sticking to the diskette inside the jacket. Before using the diskette, make sure the inner part still moves freely inside the jacket.

This modification will not affect reading or writing to the diskette. The label must be removed if you want to initialize the diskette.

The programs copied from CP/M diskettes are not running with DOS.

CP/M program files will not run with DOS because the two operating systems use different microprocessor chips. If you want to run 8-bit CP/M programs on your DOS computer, you should purchase **Uni**DOS. See Section 4.5 for more information on **Uni**DOS.

Data files have been copied from a CP/M diskette over to a DOS diskette using the DOS COPY command. When the file is accessed by a DOS program, the data appears incorrect.

The DOS COPY command and *UniForm-PC* will not modify the files in any way. Apparently the program that is accessing the data file is processing the file differently than the program that created it. We recommend that you use the same program (but a DOS version) to access the data on your DOS computer. If a DOS version of the program doesn't exist, the CP/M program can be run on the DOS computer using **Uni**DOS. Contact your dealer or Micro Solutions for more information on **Uni**DOS.

UniForm-PC doesn't seem to support the Apple or NorthStar CP/M formats even though you heard that it does.

UniForm-PC does support both the Apple and NorthStar CP/M formats if you have a **Match**Point-PC card installed in your computer. See Section 4.4 for more information on **Match**Point-PC.

Appendix D Use on the PC-AT

The IBM Personal Computer AT has a 96 TPI high capacity disk drive as standard equipment. A 48 TPI disk drive is available as an option and is highly recommended for full use of *UniForm-PC*'s capabilities. *UniForm-PC* will work in a limited fashion on the PC-AT with the standard high capacity drive. When using *UniForm-PC* on the PC-AT, you should be aware of the following important points:

- *UniForm-PC* will allow you to read, write, and initialize 96 TPI formats using the high capacity drive.
- If you have the optional 48 TPI disk drive, *UniForm-PC* will use it when you specify a 48 TPI format. This will allow you to read, write, and initialize 48 TPI formats reliably on your PC-AT.
- If you want to connect an 8 inch drive, you will need a Micro Solutions **Compati**Card diskette controller.

Appendix E Update Policy

Since *UniForm-PC* is updated periodically with new formats and features, registered users can send in their master diskettes for updating to the latest version. Please note the following policy for updating *UniForm-PC* master diskettes:

- There is a nominal charge for updating *UniForm-PC* master diskettes. Contact Micro Solutions for the current update charge before sending your master diskette. Payment for the update must be included with the diskette.
- In order to obtain an update, you must send in your original master *UniForm-PC* diskette. Copies will not be accepted.
- A registration card for your copy of *UniForm-PC* must be on file with us before your diskette will be updated. If you did not receive one with your package or if you lost it, contact us and we'll send one to you. You can then return the completed card along with your disk for updating.
- UniForm is available for many different machines, and each version is considered a different product. We will not update your UniForm to run on a different machine.

Appendix F Technical Support

Most questions about *UniForm-PC* and its operation are answered in this manual. If you are still in need of help, contact Micro Solutions and ask for *UniForm-PC* technical assistance. Please have your *UniForm-PC* master diskette and the following information handy before calling:

- The make and model of the computer you are using.
- The *UniForm-PC* version number (from the menu).

Our technical assistance staff will be happy to answer your *UniForm-PC* questions Monday through Friday during normal business hours at (815) 756-3411.