About Your Enhanced Apple IIe: User's Guide

Copyright

About Your Enhanced Apple IIe
User's Guide

Contents

What the Apple IIe Enhancement Gives You

The Apple™ IIe enhancement gives your Apple IIe greater compatibility with the Apple IIc and lets you run state-of-the-art software that's been designed to take advantage of your enhanced machine. Some features this new software may include are pull-down menus, pictorial characters, faster and smoother-looking graphics, and the ability to use the computer to work on one document while the printer is printing another. The enhancement is installed by your dealer. It involves replacing four integrated circuit chips in your Apple IIe with these more powerful chips:

- A character generator ROM, which makes it possible for your enhanced IIe to run software that uses pictorial characters and pull-down menus.
- Two new monitor ROMs, which allow your enhanced IIe to run software that incorporates features such as faster scrolling and smoother-looking graphics.
- A 65C02 microprocessor, which replaces the 6502 microprocessor and gives your IIe the ability to run most Apple IIc software.

The Benefits of Enhancing Your System

The IIe enhancement by itself does not automatically give you pictorial characters, pull-down menus, and speed. You'll get the full benefit of your enhanced IIe when you use software that takes advantage of its enhanced features.

Pictorial Characters

The new character generator ROM not only generates all of the characters that you're used to seeing on your Apple IIe display, it also gives you pictorial characters that make learning intuitive and fun.

When you use software that takes advantage of this feature, you'll see that many of the keystrokes, commands, and concepts that used to be represented on the display in words are now represented in pictures. For example, with the enhanced IIe and appropriate software, instead of seeing "OPEN-APPLE" on the screen you'll see Ć.

To see how pictorial characters can simplify the display and make it easier to read, compare Figure 1 (a typical IIe display) with Figure 2 (the same display with many of the words replaced by pictorial characters).

Figure 1. Typical Display Without IIe Enhancement

```
DEMOPROGRAM                          v. 1.00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 OPEN-APPLE-?   for Help

 UP, DOWN, LEFT, RIGHT-ARROWS to Select
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -




          1. Editing Menu

          2. HOUSEKEEPING MENU

          3. Printing Menu




 (UPPERCASE indicates current selection)

```

About Your Enhanced Apple IIe

DEMOPR

⌘ ? f

↑ ↓

```
┌─────────────────────────────────────────────────────┐
│DEMOPROGRAM                                  v. 2.00  │
│- - - - - - - - - - - - - - - - - - - - - - - - - - - │
│⌘  ?  for Help                                        │
│                                                      │
│↑  ↓  ←  →  to Select                                 │
│- - - - - - - - - - - - - - - - - - - - - - - - - - - │
│                                                      │
│                                                      │
│                                                      │
│             ▭   Editing                              │
│                                                      │
│           ✓▭   Housekeeping                          │
│                                                      │
│             ▭   Printing                             │
│                                                      │
│                                                      │
│                                                      │
│                                                      │
│  ✓ indicates  current  selection                     │
└─────────────────────────────────────────────────────┘
```
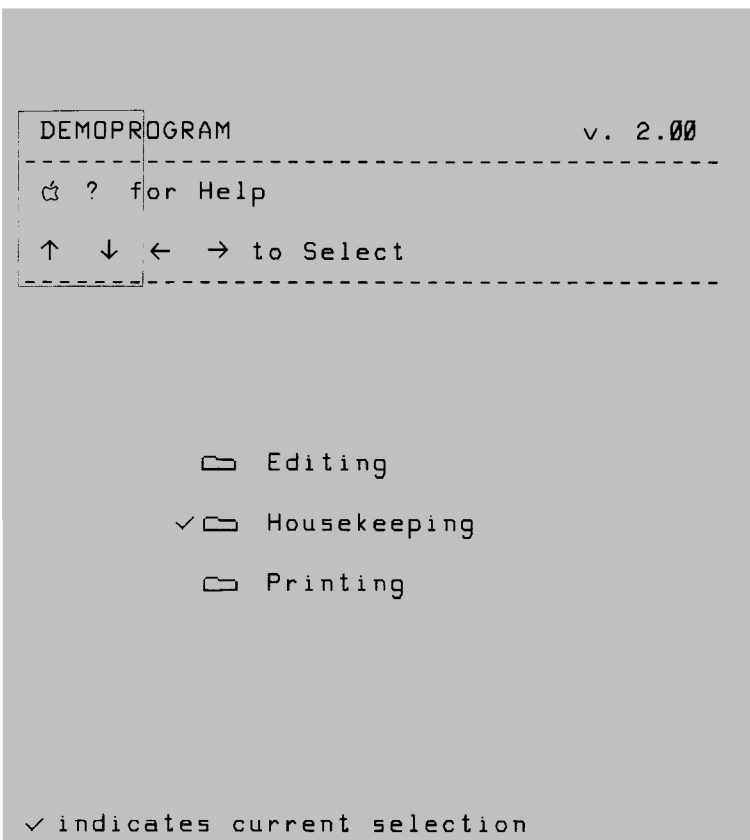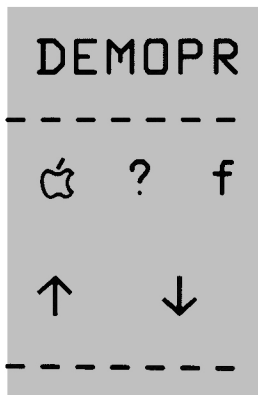
The pictorial characters included in the enhanced IIe and the more familiar alphanumeric characters they correspond to are shown in Figure 3. (Notice that some of the pictorial characters form a picture only when used side by side. For instance, the pictorial characters associated with the letters F and G form the image of a running man when they're put side by side. Those characters associated with X and Y form the image of a file folder.)

Figure 3. Pictorial Characters in IIe Enhancement

Figure 3. Pictorial Characters in IIe Enhancement
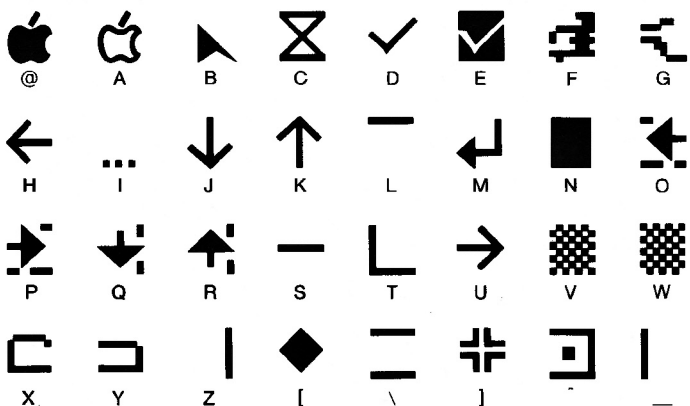
If you have an 80-column text card and want to display the pictorial character set on your own screen, you can do so by starting up ProDOS™ and then running this short BASIC program:

```
10   D$ =  CHR$  (4): REM   CONTROL-D
20   PRINT : PRINT D$;"PR#3": REM  TURN ON
     80-COLUMN CARD
30   INVERSE
40   PRINT  CHR$ (27);
     "@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_";:
     REM  PRINT ALTERNATE  CHARACTER SET
50   PRINT CHR$ (24);: REM  TURN OFF THE
     ALTERNATE CHARACTER SET
60   NORMAL : REM  TURN OFF INVERSE
```

Pull-Down Menus and Windows

With the IIe enhancement you can also run software that uses pull-down menus and windows. Your IIe can give you these features because some of the new pictorial characters are line-drawing characters — characters that are specifically used to create crisp-looking corners and rectangular images.

FYI: It's possible to have pull-down menus and windows without the IIe enhancement. However, they don't look as good, because they must be created with vertical bars (|) and underline characters (_) instead of pictorial characters.

The appeal of pull-down menus and windows is more than just cosmetic: they allow you to use a program without knowing its commands or the structure of its menus. Instead of memorizing commands and typing them, you can look at a menu and see what's available, then select what you want by pointing to it with the cursor.

To see an example of how pull-down menus and windows can save you time and frustration, compare Figures 4 and 5. Figure 4 shows a typical way of saving a file: by typing the command (/S) followed by the name of the file and the number of the disk drive to save it to. Here, you must memorize the command, the drive number abbreviation, and the syntax to put it all together.

Figure 4. Typing a Command

```
DEMOPROGRAM                           v. 1.00
---------------------------------------------

and hope we can do business with Inter-
national Hydrofrac soon again.

Joe says you'll stop by to pick up the
televiewer on Tuesday.  He claims the
new instrument is twice as sturdy and
half the cost of our old one.  Let's
meet for lunch and discuss it then.

                  Thanks again,

                  Bob




    /S letter3,d2
```
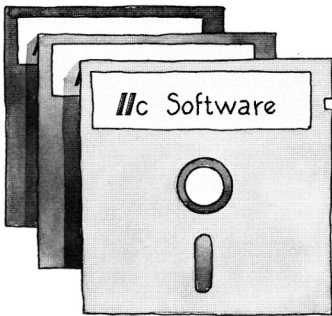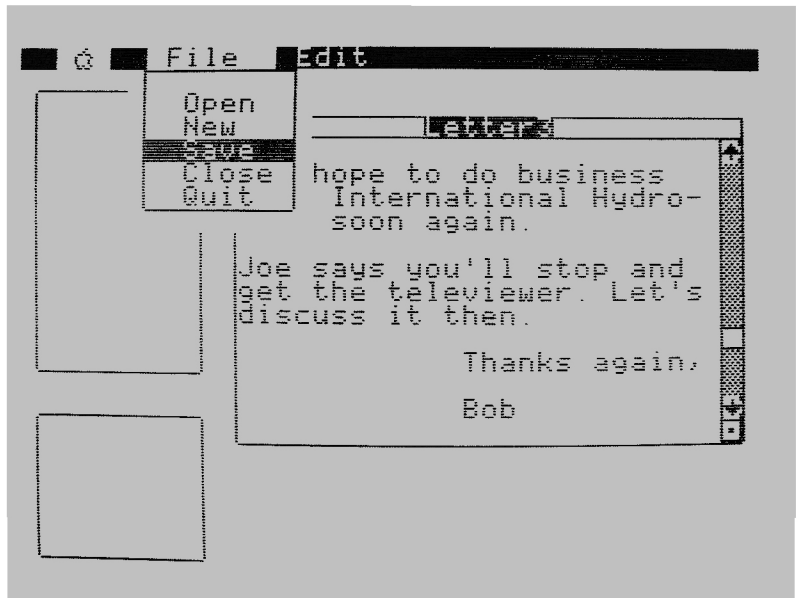
Figure 5 shows how to do the same thing using software that has pull-down menus and windows. You just point the cursor at the menu you want and pull it down to see the commands that are contained in it, then select the command you want with the cursor.

Figure 5. Selecting a Command From a Pull-Down Menu

```
  ◾ ⌂ ◾    File  ▐Edit▌
 ┌──────┐      │ Open │
 │      │      │ New  │────────────────────
 │      │      │▐Save▌│ ▐ Letter ▌        ▲
 │      │      │ Close│ hope to do business
 │      │      │ Quit │    International Hydro-
 │      │      │          soon again.
 │      │      │
 │      │      │ Joe says you'll stop and
 │      │      │ get the televiewer. Let's
 │      │      │ discuss it then.
 │      │      │
 │      │      │           Thanks again,
 └──────┘      │
               │           Bob              ▼
 ┌──────┐      └─────────────────────────
 │      │
 │      │
 │      │
 └──────┘
```

Software

With the IIe enhancement you can now run the new, easy-to-use software developed originally for the Apple IIc — and IIc upgrades of old favorites as well. This means that you have access to a larger volume of software, and software that has a more consistent, intuitive interface. The result: shorter learning time — and more fun!

Speed

Your enhanced Apple IIe has the potential to run software a lot faster, so it can give you faster scrolling, smoother-looking graphics, and quicker mouse response. With the IIe enhancement and software that takes advantage of it, your Apple doesn't have to spend time checking each device every few moments to see if it needs attention. Instead, devices can now ask for the attention of the computer directly. Software that takes advantage of this ability to "interrupt" the computer can run up to 30% faster on an enhanced IIe than it would on a IIe that has not been enhanced.

The enhanced IIe's ability to handle interruptions also allows you to perform some time-dependent functions that were difficult or impossible to do before. For instance, with the enhanced IIe and appropriate software you could print one document while you're working on another — because your enhanced IIe can format pieces of one document and send them to the printer during the spare bits of time when you're editing the other.

Flexibility and Convenience

The IIe enhancement gives you more flexibility and convenience in several ways:

ProDOS is the operating system for the Apple IIe that allows you to use both drives for flexible disks and mass storage devices (such as the ProFile disk drive).

- You can start up ProDOS from other devices besides the Disk II. For instance, you can now start up ProDOS from your ProFile™ hard disk.
- If you write programs, you don't have to buy an assembler. You can write small machine-language programs with the new Mini-Assembler.
- You can type Applesoft BASIC and ProDOS programs and commands in uppercase or lowercase. This means that if you forget to press CAPS LOCK, you won't get a SYNTAX ERROR message. Also, Applesoft now works in 80-column mode.

The IIe enhancement also offers several programming benefits. For details about these benefits and about the Mini-Assembler, see *About Your Enhanced Apple IIe: Programmer's Guide*, which you can get from your authorized Apple dealer at no extra cost.

How to Tell If You Have an Enhanced IIe

If you have this book, you probably have an enhanced IIe — but you can make sure either by checking the opening display or by lifting the lid and looking inside.

Look at the Opening Display

Start up your computer and look at the top of the first display.

If it looks like this, you have an enhanced IIe:

`Apple //e`

About Your Enhanced Apple IIe

If it looks like this, your IIe has not been enhanced:

`Apple ][`

Or Lift the Lid

Pull up on the back edge of the IIe's cover and lift it off.

If the part numbers associated with the 65C02 microprocessor, character generator ROM, and monitor ROMs CD and EF in Figure 6 match the part numbers on the same chips inside your IIe, you have an enhanced IIe.

Figure 6. Enhanced IIe Chips

65C02 Microprocessor
338-6503

Character Generator ROM
342-0265

Monitor ROM (CD)
342-0304

Monitor ROM (EF)
342-0303
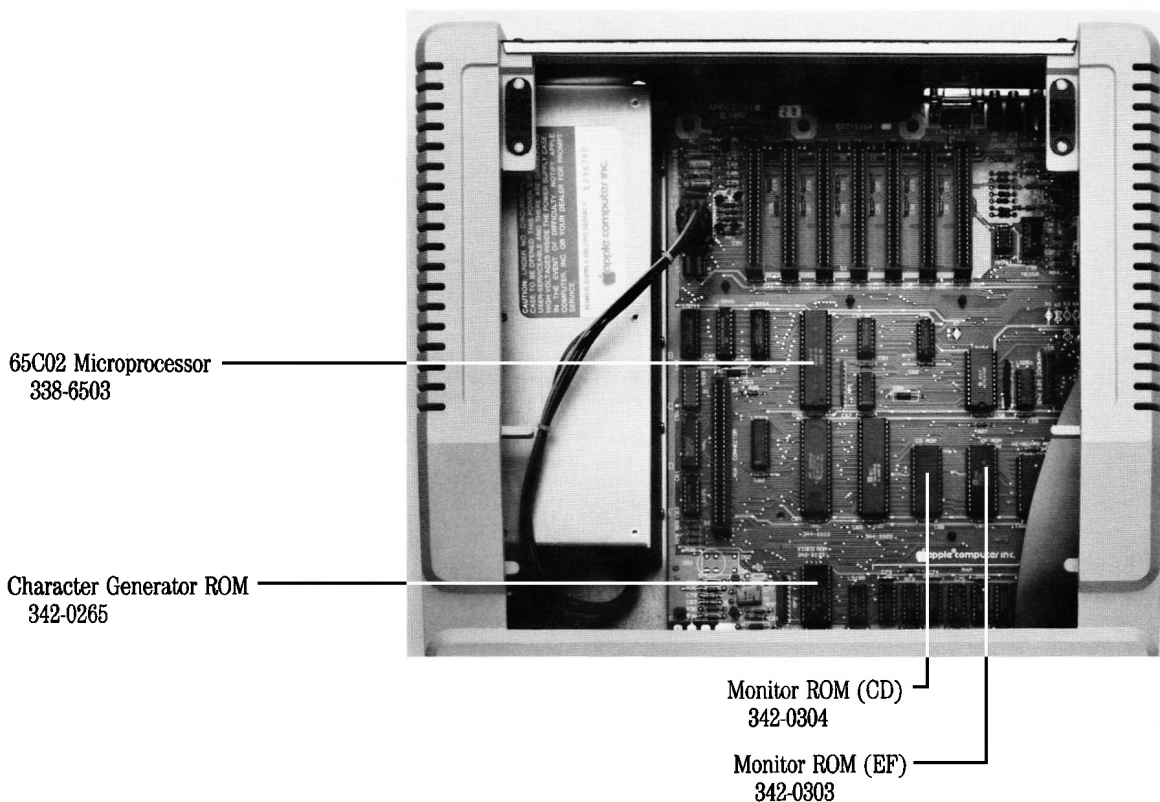
If the part numbers associated with the 6502 microprocessor, character generator ROM, and monitor ROMs CD and EF in Figure 7 match the part numbers on the same chips inside your IIe, your IIe has not been enhanced.

Figure 7. Chips in a IIe That Has Not Been Enhanced

6502 Microprocessor
370-6502

Character Generator ROM
342-0133

Monitor ROM (CD)
342-0135

Monitor ROM (EF)
342-0134
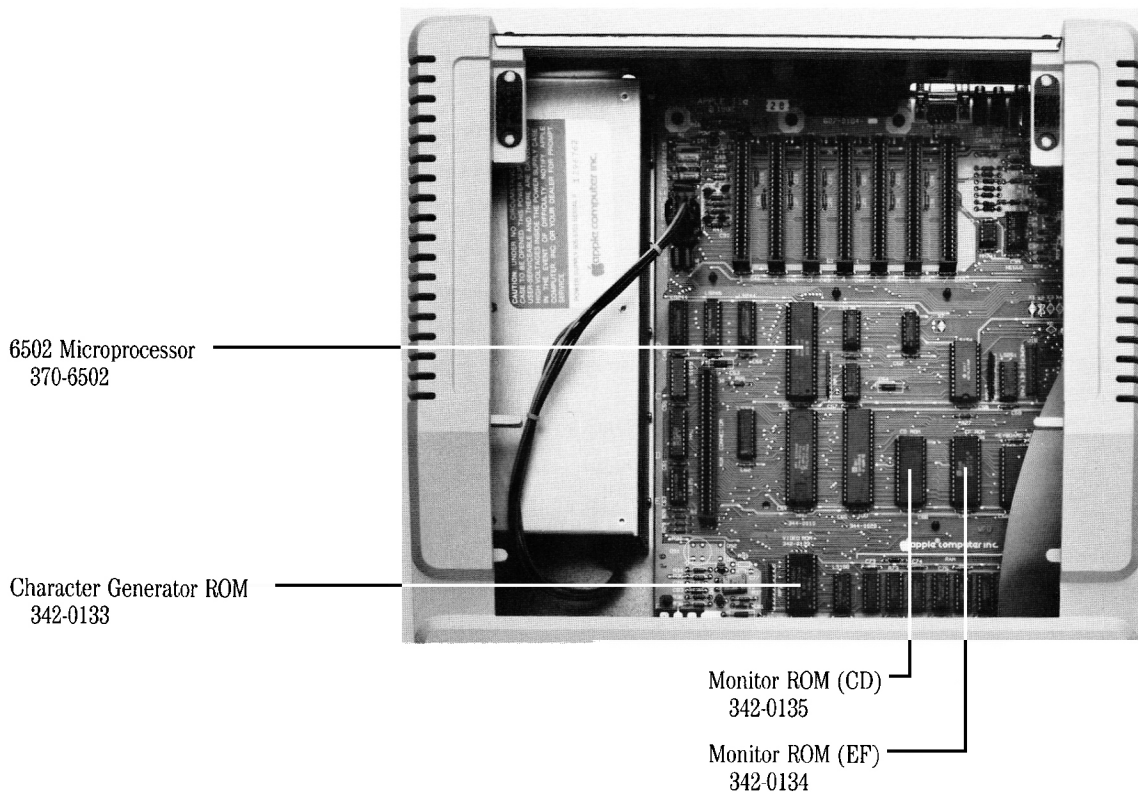
Check Your Software

Most IIe software will run just the same on an enhanced IIe as it does on a IIe without the enhancement. However, in a few cases software will behave differently. That's why it's a good idea to check all of your existing software right after you get the IIe enhancement. That way, if you have a piece of software that doesn't work properly, you'll know — and avoid the confusion of trying to track the problem months later.

Of the few programs that are affected by the IIe enhancement, most are only superficially affected: in some programs, highlighted uppercase characters are displayed as pictorial characters instead. Here's why: The original character generator ROM had two identical sets of highlighted uppercase characters. The enhanced character generator ROM has only one set of highlighted uppercase characters, and replaces the other set with pictorial characters (the characters shown in Figure 3). Hence, programs that used the other set of highlighted uppercase characters now display pictorial characters in their place. To see an example of how highlighted uppercase characters in a few older programs may be affected, compare Figures 8 and 9.

Highlighted characters are dark on a light background, like the word "MEM:" in this phrase:

MEM: FULL

```
DEMOPROGRAM                          v. 1.00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Filename                         Space Allotted

LETTER                       8    blocks
DON.822                      2      "
CHAP6                       15      "
MARKLET                      3      "
MEMO.46                     10      "
REVISE1                     11      "




Total blocks left on disk:    150
```

Figure 9. Pictorial Characters in Affected Program

```
DEMOPROGRAM                          v. 1.00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Filename                         —pace Ållotted

LETTER                       8    blocks
DON.822                      2      "
CHAP6                       15      "
MARKLET                     3       "
MEMO.46                     10      "
REVISE1                     11      "




Total blocks left on disk:    150
```

The difference in characters does not have any effect on program operation. You can go ahead and use the program as you always did — it will work just fine.

A few programs will encounter these more serious problems:

Apple reserved parts of the old ROM for future uses — such as this enhancement.

■ Programs that use reserved locations in ROM may stop in midstream. (Very few programs encounter this problem.)

■ The copy-protection schemes of some programs may cause them not to start up. (This problem is confined mostly to game software.)

If you encounter these problems, contact your dealer or the developer of the software to find out if an upgraded version of the software is available. Upgrades of most popular programs are available.

To Find Out More

If you're a programmer, you'll want to find out about some of the new things you can do with Applesoft and Pascal. For technical details about the IIe enhancement, see *About Your Enhanced Apple IIe: Programmer's Guide* (Apple part number 030-1143-A). You can get this manual at no extra cost from your authorized Apple dealer.