If for some reason you wish to remove the firmware link without re-booting DOS 3.3, you can do so by restoring the original contents of the three bytes at $BD12-BD14. For example, the monitor command "BD12:AA A0 0F" will do so. From inside Applesoft, you can POKE the values:

POKE 48402,176 : POKE 48403,160 : POKE 48404,15

If you use the INIT command to initialize a floppy disk after installing the RamFactor firmware link (with the IN#s command), the DOS image written on the floppy disk will include the firmware link. This means that the RamFactor card will have to be installed (and in the same slot) for that floppy to successfully boot. (If you have a Sider Hard Disk, you may have already discovered a similar fact about the Sider firmware link.)

Operating System Identification

The RamFactor firmware determines which operating system is in use by examining the contents of location $BF00. This technique was chosen to be compatible with the Apple Memory Expansion Card.

```
($BF00) = $00 -- Pascal
($BF00) = $4C -- ProDOS
($BF00) = $33 -- DOS 3.3
```

RamFactor Hardware

The RamFactor card has five addressable registers, which are addressed according to the slot number the card is in:

```
$C080+slot*16        low byte of RAM address
$C081+slot*16        middle byte of RAM address
$C082+slot*16        high byte of RAM address
$C083+slot*16        data at addressed location
$C08F+slot*16        Firmware Bank Select
```

After power up or Control-Reset, the registers on the card are all in a disabled state. They will be enabled by addressing any address in the firmware page $Cs00-CsFF.

The three address bytes can be both written into and read from. If the card has one Megabyte or less, reading the high address byte will always return a value in the range $F0-FF. The top nibble can be any value when you write it, but it will always be "F" when you read it. If the card has more than one Megabyte of RAM, the top nibble will be a meaningful part of the address.

What you should read next in this manual depends on how you will use RamFactor.

❑ If you will be using RamFactor only to improve the performance of a program written specifically for RamFactor or the Apple Memory Expansion Card, you may stop right here.

❑ If you want to use RamFactor and the AW 2 Expander disk to enhance the performance of AppleWorks, read the AW 2 Expander User's Manual included with the RamFactor package.

❑ Go on to Chapter 2 for details on using RamFactor as a RAMdisk.