

# APPENDIX D

## **Programmer's Reference**

### **Introduction**

This chapter is intended for heavy-duty programmers interested in developing application software for the RamFactor card.

### **Description of RamFactor**

The RamFactor is a peripheral expansion card which functions primarily as a mass storage device. It works with ProDOS, Pascal 1.3, and DOS 3.3. RamFactor was designed to be totally compatible with virtually all software written for the Apple II Memory Expansion Card. It also provides some additional useful features not available on the Apple card. These features include:

- RamFactor Partition Manager firmware, which enables RamFactor memory to be subdivided into partitions, with each partition totally isolated from the others.
- Expansion port for addressing additional memory beyond the 1 Megabyte available on the main RamFactor circuit card.
- Connector for RamCharger, an optional uninterruptable power source for RamFactor RAM.

### **RamFactor Partition Manager Firmware**

When a blank RamFactor is first accessed by either ProDOS or Pascal 1.3, the RamFactor firmware dedicates all of RamFactor's RAM to that operating system as a formatted data disk. The RamFactor Partition Manager firmware remains inactive until called by a PR#s from BASIC or a Cs10G command from the Monitor. (This feature allows RamFactor to be fully Apple II Memory Expansion Card compatible, until the RPM firmware is called.) Once the RamFactor RAMdisk has been configured as a bootable device, the only way to access the RPM firmware without powering down is by the Cs10G command.

Do not use volume-copy options to copy another disk to a RAMdisk - use only the file-copy options. Remember that you are copying the contents of one disk to another; you are not duplicating a disk.

- ◆ *Note:* Only files which are not copy-protected can be copied to a ProDOS RAMdisk, although some copy protection schemes will allow files to be copied from a floppy disk to a hard disk or RAMdisk but not another floppy disk.

Once PRODOS and the required system file (e.g. BASIC.SYSTEM) are copied to the RAMdisk, it can be booted with the PR#s command, where s is the number of the slot containing the RamFactor card.

**Enhanced Apple //e users:** If RamFactor is installed in slot 7 the RAMdisk can be booted using the Control-Open Apple-Reset method. Or if you have RamCharger, your enhanced //e will be able to boot from the RAMdisk at power-up!

**IIGS users:** If you have a RamCharger connected to your RamFactor, you can boot from the RamFactor at power up. Set the Startup Slot option in the Slots menu of the Control Panel to the RamFactor's slot. See your IIGS owner's manual for more information on setting the startup slot.

Any attempt to access or format a RamFactor RAMdisk that has already been formatted under a different operating system will result in a "WRITE PROTECT" error message. To clear the RAMdisk, remove power from the RamFactor card by turning the computer and battery backup option switch OFF.

### **DOS 3.3 RAMdisk**

- ◆ *Remember:* When in DOS 3.3, you must use all caps.

To create a DOS 3.3 RamFactor RAMdisk:

- 1) Boot an Apple DOS 3.3 System disk.
- 2) At the BASIC prompt ( ), type IN#s where s is the number of the slot containing the RamFactor card.
- 3) Press Return.

The RamFactor card is now linked to the DOS 3.3 operating system in memory.