Apple warns programmers NOT to use any page zero locations when calling the Protocol Converter firmware, saying that some page zero locations are used by that firmware. They do not say which locations they use, but investigations show that they use bytes in the range from $40 to $4F. What they do with those is push them on the stack, put their own data in them, and at the end restore the original contents from the stack. They use a substantial amount of stack, as many as 35 bytes. (The RamFactor firmware uses no more than 17 bytes of stack for Protocol Converter calls, including the two used by your JSR.) It is recommended that you can copy the PCADDR bytes up into your own program. You could even plug them in to every JSR to the Protocol Converter. For example:

```
        jsr   find.pc
        bcs   ...            ...no pc found
        lda   pcaddr
        sta   callp+1
        lda   pcaddr+1
        sta   callpc+2
        ...
        jsr   callpc
        .da   #cmd,parameters
        ...
callpc  jmp *   address filled in
```

Description of Protocol Converter Commands

Apple defines ten commands for the Protocol Converter firmware. These are not necessarily identical in function for all devices which use the Protocol Converter. In fact, Apple's memory card and Apple's UniDisk 3.5 use two of the commands differently. The Protocol Converter firmware in the RamFactor functions exactly the same way as that in the Apple Memory Expansion Card.

The following chart summarizes the ten commands as implemented in the RamFactor firmware.