

In version 3 of the IIc ROM, the value resulting from a status call to device 0 implies that there is always a real card connected; the ROM version 4 returns device connected only when there is RAM card present.

ProDOS

When you do an `ON_LINE` call to the ProDOS MLI and there is no RAM on the Memory Expansion Card, you get an error \$2D. This error is not a ProDOS error, rather it is a SmartPort error. The error is `BADBLOCK`, and basically tells you that the block requested was not available. If you try to catalog the RAM disk from BASIC, you will get a `PATH NOT FOUND` error.

Pascal

Formatting the RAM disk (unit #9) with no memory on the card returns no error. Doing a `UnitStatus` call will return zero blocks available, and trying to read the volume directory will result in an `IORESULT` of 8, which means no room is available on the volume. Doing the `Vols` command from the `File` will result in a `<no dir>` and `# of blocks = 0`.

DOS 3.3

If there is no memory on the card and you initialize it with an IN#4 (which returns a slash, appearing to have successfully initialized the RAM disk), you will get an I/O error (ONERR code = 8) if you try to read from or write to the RAM disk.

Important: Another significant ramification of the memory expansion capability is that the mouse firmware has been moved to slot 7. This change means that programs should scan the slots just as they would on a IIe to find what peripherals are installed. Since most programs have a scan routine in them for the IIe, it should be a relatively minor change to call this routine for whatever machine you are on. In fact, we strongly recommend that programs always scan the slots for peripheral devices regardless of the machine on which they are running.

The firmware ID bytes for this version of the machine are:

Original Expandable IIc

\$FBB3—\$06 \$FBC0—\$00 \$FBBF—\$03

Revised Expandable IIc

\$FBB3—\$06 \$FBC0—\$00 \$FBBF—\$04

Apple IIc Plus

\$FBB3—\$06 \$FBC0—\$00 \$FBBF—\$05

Further Reference

- Apple IIc Technical Note #6, Buffering Blues
- Apple IIc Technical Note #7, Existing Versions
- Apple II Miscellaneous Technical Note #2, Apple II Family Identification Routines 2.1
- Apple II Miscellaneous Technical Note #7, Apple II Family Identification
- Apple II Miscellaneous Technical Note #8, Pascal 1.1 Firmware Protocol ID Bytes