



# Tech Info Library

## Apple III: 12-volt 128K Internal Diagnostic

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Security: Everyone

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There is a RAM diagnostic built into the monitor ROMs of all Apple IIIs that's useful for testing the memory of a 12-volt 128K Apple III (typically, Apple IIIs with serial numbers less than 100,000).

NOTE: Before running this test, remove all peripheral cards from the Apple III, especially any ProFile interface cards and Grappler printer cards.

To run the diagnostic:

1. Hold down the CTRL and OA keys, and then press and release RESET key. The MONITOR prompt, a right arrow and a flashing underline, should then appear in the upper left corner of the screen.
2. Type F6E6G and then press the RETURN key.
3. The test should now begin to cycle: in the upper left hand corner of the screen you'll see, about every 20 seconds, a pattern of dots like this:

```

DIAGNOSTIC RAM
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

```

If the test runs for 20 minutes and displays only dots, the RAM isn't defective. If characters or inverse blocks show up in the matrix, however, the diagnostic has found defective memory chips.

The position of the non-dot character in the display (usually an inverse "1")

above corresponds with the chart below, which lists the chip location on the 12-volt memory board.

B9	B8	B7	B6	B5	B4	B3	B2
B17	B16	B15	B14	B13	B12	B11	B10
B9	B8	B7	B6	B5	B4	B3	B2
B17	B16	B15	B14	B13	B12	B11	B10
C17	C16	C15	C14	C13	C12	C11	C10
D9	D8	D7	D6	D5	D4	D3	D2
D17	D16	D15	D14	D13	D12	D11	D10
C9	C8	C7	C6	C5	C4	C3	C2

Replace the bad memory chip(s) and run the test again. If the system once again fails the memory board test, replace the memory board itself. If that doesn't help, replace the main logic board. (Error messages displayed below the DIAGNOSTIC RAM grid, by the way--such as "ACIA", "ROM", or "VIA"--indicate a problem with the logic board.)

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