Coleco ADAM XRAM Tester

© 2023 R. E. Pearson

Loading

The Coleco ADAM XRAM Tester should be run immediately after powering on the computer.

Running Test Program Again

If you want to test again you should completely power down the computer for 2 minutes before running the test again. Failure to do this may result in incorrect bank detection.

Bank Detection

The program will automatically try to detect how many 64K banks of expansion RAM are installed. A lower number of banks detected than what is available can be caused by a variety of reasons. Some examples are:

> 1. RAM problem in a bank. (e.g. If there are 4 banks of expansion RAM and only 1 is detected this will usually indicate a problem in bank 2)
> 2. Problem with Addressor card.
> 3. Dirty contacts on Addressor card, Expansion RAM card, Slot 2 or Slot 3.

Manual Bank Entry

After automatic detection completes the user has the option to manually enter the number of 64K banks to test. This may be necessary if automatic detection fails to detect all banks.

> NOTE: Entering more banks than exist will cause the XRAM Tester to test the last actual bank more than once. (e.g. If the user entered 8 banks and only 4 banks exist, bank 4 would be tested 5 times.)

RAM Tests

The ADAM RAM Tester performs 4 different tests on each bank of expansion RAM. Each bank takes approximately 4 minutes and 10 seconds to test;

- 55AA Test : The value 55h (0101 0101) written and read, then the value AAh (1010 1010) is written an read. This test is performed 5 times on each byte.
- Walking Ones : A bit pattern from 1,2,4,8,16,32,64 and 128 is written and read to each byte.
- Patten : Each block of 256 bytes is written a pattern of values from 0 to 255. The pattern is then read back.
- March C- : A March test applies patterns that "march" up and down the memory address while writing values to and reading values from known memory locations.

    Algorithm Steps:

    Increasing Address:

write 0s with up addressing order (to initialize)
Read 0s, write 1s with up addressing order
Read 1s, write 0s with up addressing order

Decreasing address:

Read 0s, write 1s with down addressing order
Read 1s, write 0s with down addressing order
Read 0s with down addressing order

Failure

If an issue is detected the memory counter will stop, the word "FAILED" will appear to the right of the memory counter. Below the "Testing Bank" line the value being tested will be indicated along with the value found and the bit pattern of the value found.

Passed

If all memory tests are successful the word "PASSED" will appear to the right of the memory counter and the text "All Tests Complete" will appear at the bottom of screen.