

KISS-68030

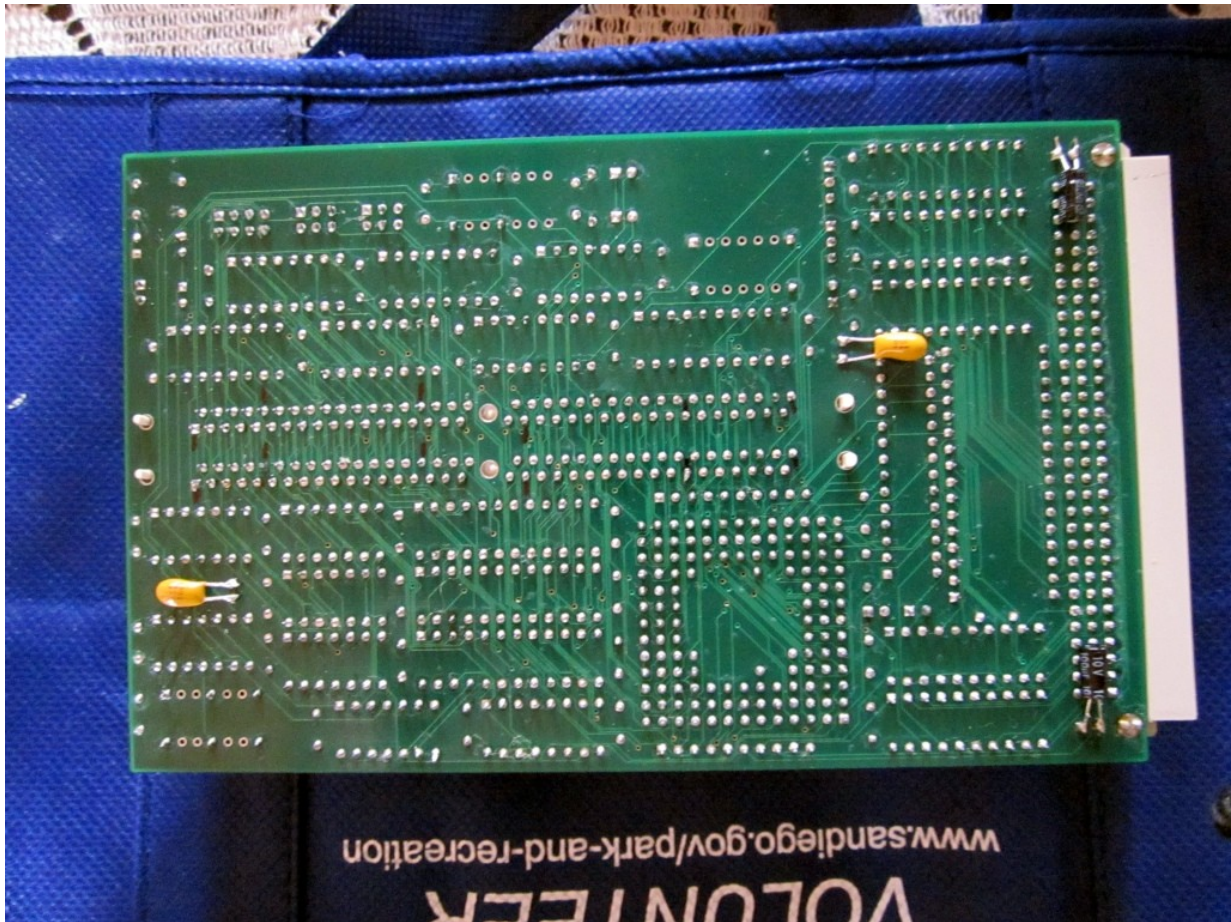
“The decoupling fix that didn't work”

29-July-2015

Excellent: The board passes all memory tests using aligned long word transfers.

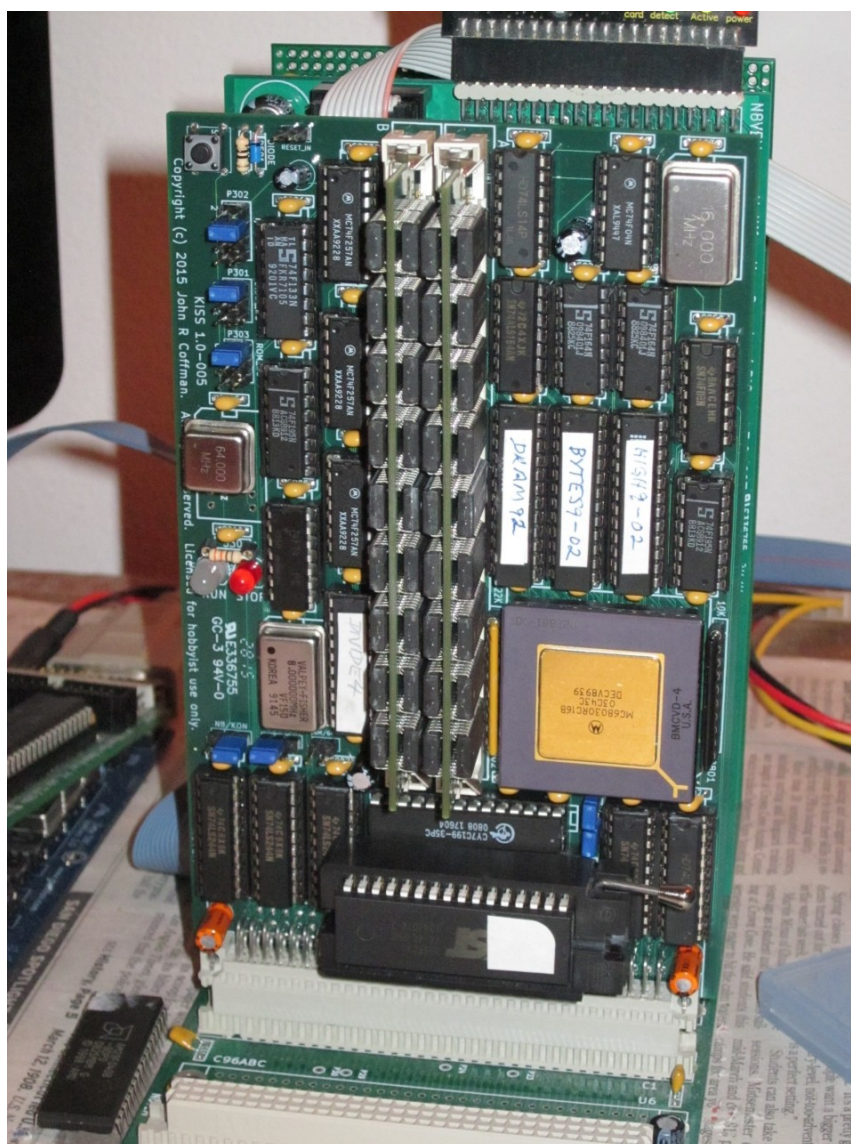
Good: After power has been on for 90-150 seconds, the board passes all tests with unaligned long words, as well as byte reads & writes in odd positions. Best of all, using MOVEM.L with unaligned transfers, no errors occur after the warm-up time.

Attempted fix: decoupling capacitors: (black) 100uF (2). See below:
No change in behavior.



Second attempted fix: decoupling capacitors (orange) 15uF tantalum (2). See above:
The warm-up time appeared to be reduced a bit, but the problem persists.

Here's my original board with 2 black 47uF electrolytics mid-board, and 2 orange 22uF electrolytics at each end of the DIN connector.



Once the warm-up period is met, the board runs the stringent memory tests without flaw. It ran overnight (8hrs) with no problem (16Mhz CPU clock).

In the cool morning garage, I turned it off for 2 hours. A 2 minute warm up was required; then the board ran the memory torture test without a “stop on error.” This afternoon, I turned the board off at 12:30 p.m. With the garage headed up to a very uncomfortable hot temperature I turned the power on at 3:00 p.m. No warm-up time was required. The thing runs fine.

BTW: the CPU is now a 25Mhz chip, so I can also test at 20Mhz. The faster clock requires a slightly longer warm-up time, but runs without error after that point.

I guess this board has a thermal problem. A lot will depend on the tests performed on other boards.

--John