Subject: SDC68k_2
Posted by gbm on Wed, 08 Dec 2021 11:49:42 GMT
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New kid on the block, a continuation of my SDC saga with a little mystery.

This is the smallest (so far) computer based on a classic microprocessor, this time with a MC68SEC000. Like the previous SDC models, it has a button, 4 LEDs, terminal interface via USB CDC and a mass storage (16 MiB) for emulating diskettes, so it's capable of running CP/M-68k or alike. RAM capacity is 512 KiB. Size approx. 1 x 1.5" or 2.5 x 4 cm. As with SDC68k, the real operational speed is equivalent to 1.7 MHz with no wait states. Vectored interrupt controller is implemented for demonstrating the capabilities of 68k interrupt system - I use the SDC computers for demonstrating various aspects of computer operation to students.

And now the little mystery: according to Motorola/Freescale/NXP docs, the 68EC000 and SEC000 models, unlike 68000 and like 68010, support MOVE from CCR and prohibit MOVE from SR in User mode. The hardware monitor shows something different - the CPU doesn't signal illegal operation on MOVE from SR in User mode and MOVE from CCR is undefined. Is this an error in the docs or my CPU is not the proper 68SEC000 (then what model it could be in this package?). Any ideas/explanations? The CPU is from ebay/China, so it could be fake but then it is still not clear what would it be "converted" (remarked) from. It is clearly low power CMOS.

File Attachments

1) 20211208_122229.jpg, downloaded 528 times
2) 20211208_122213.jpg, downloaded 517 times

Subject: Re: SDC68k_2
Posted by cbken on Fri, 10 Dec 2021 18:45:37 GMT
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I don't really have an answer to your question but I also have a few of the SEC000. Mine are AA20 (not FU20) and from Ebay but not (straight) from China. I built a proto board with one but could not get it to work right. Very weird behavior and I after much trouble shooting concluded that the chip was faulty somehow. I had made a breadboard breakout with another of them that seems to work fine. So I finally soldered up second proto board with a 3rd chip and that one so far works fine. Haven't done any extensive testing yet.
What gives? I suppose a chip can be faulty out of the box? But it does make one wonder considering they are from Ebay.

Didn't know about that difference with the EC/SEC so something I will test when I get that far.