Subject: KISS68030 running at 40MHz
Posted by denis2342 on Wed, 27 Mar 2024 12:59:09 GMT
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Hi

After converting the KISS68030 CPU board to a MAX707 chip for startup I was interested if it could run with 40MHz. On the logic analyser I could see it running for about 10ms but then it stopped. I assumed the board was accessing the MFPIC card which is way to slow for such speed even with the max Wait States. So I made a special version of the really awesome gogoboot.rom which puts the console on the USBFIFO card and disabled anything else accessing the MFPIC board.

Then I turned on and the board did run fine. Also started the Memtest and it is happily running without problems. I know this is not useful in any way. But I just want to report it anyway what this board is capable of.

Denis

PS: the max 707 chip monitors the voltage at startup and only releases the RESET line after about 200ms so the CPU starts after all other components have started.

Subject: Re: KISS68030 running at 40MHz
Posted by denis2342 on Fri, 05 Apr 2024 01:36:49 GMT
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After some exploring I changed all the wait states to the slowest setting so the mf-pic board can be accessed without errors and now the board runs linux happily with 40MHz and reports 9.6 Bogomips. I'm building the 6.8 Kernel now on native hardware and will append to this post if it did work out.

Subject: Re: KISS68030 running at 40MHz
Posted by denis2342 on Mon, 15 Apr 2024 11:20:58 GMT
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It took 10 days and 23 hours to build the kernel on native hardware. Don't know why so long since others reported something about 2 days. but it depends on so many things it hard to compare. But as a retro guy I think it is a small milestone that the hardware can build its own kernel and run it, so this is a success.

Linux version 6.8.0-kiss (root@darkerstar) (gcc (Debian 13.2.0-16.1) 13.2.0, GNU ld (GNU Binutils for Debian) 2.42) #25 Mon Apr 15 11:37:23 CEST 2024

In the meantime I could buy faster Crystal Oscillators with 44MHz and 44.9MHz. To my surprise the KISS Board runs fine and now reports "Calibrating delay loop... 10.57 BogoMIPS (lpj=52864)"

with the 44MHz crystal.

I also tried the 44.9MHz crystal, but that was too fast for the MF-PIC board, but I got console output and the CPU board seems to handle that fine.

So John Coffman, you did a great job, thank you very much!

Denis

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