

nHOLD: memory expansion mode vs serial...



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Mar 12, 2009 nHOLD: memory expansion mode vs serial programming



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Mar 12, 2009 1. **nHOLD: memory expansion mode vs serial programming** Nov 21, 2007 12:15 AM

Standard serial mode requires that P55 (nHOLD) be held low to program. Sure enough, when I tied it high for expansion mode, I couldn't program it. But if I left it low, the chip would lock up as soon as I enabled expansion mode, because it became the nHOLD pin.

Rather than continue to plug/unplug/plug my expansion board (the board pulled nHOLD high), I added a tiny circuit to the underside of the M3A-0835 eval board. This pulls the nHOLD (and nRDY) low when the CNVss pin is pulled high (programming mode). In case it helps anyone else out, here's the schematics:

<http://www.delorie.com/electronics/m32c/cnvss-hold.html>



[msherman](#) 9 posts since

Jan 27, 2010 2. **Re: nHOLD: memory expansion mode vs serial programming** Feb 5, 2010 4:03 PM

Would you say for the M16C in memory expansion mode, this would be the same reasoning? Here's my situation: I am connected via E8a to my board. If I'm stepping through my code, as soon as I execute the line to set PM00 to 1, I get a communication timeout error for the emulator. Of course this is about 3 or 4 lines into the ncr0 assembly code. However, after reconnecting and restarting, when I click Go, I get past that point, but I can no longer communicate to the system. The only option available to me is to Halt the program, and when I click that, I get the timeout error. If I comment out the line where I set memory expansion mode and run it again, I can step through the program or execute the program, but I get stuck in an infinite loop waiting for a timer to get a signal. I can press the stop or halt button here and interact with it, but I cannot get to the rest of the code (no mem exp - lcd, etc.)

Ok, I hope that made sense.

nHOLD: memory expansion mode vs serial...



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Mar 12, 2009 3. Re: nHOLD: memory expansion mode vs serial programming Feb 7, 2010 10:05 AM

That was exactly what was happening to me with the m32c, so yeah, probably the same thing.



[FrankL](#) 1,100 posts since

Mar 16, 2009 4. Re: nHOLD: memory expansion mode vs serial programming Feb 8, 2010 12:52 AM

I'm not convinced that this will help.

First a small question, did you set the processor mode in the init dialog of E8a to memory expansion mode (in the first start-up window of E8a on the MCU setting register card)?

When E8a starts to program the device flash it actively pulls P55 (nHOLD) low and outputs "HIGH" to P50. So if you have a pull-up on nHOLD which is not too small (say > 2-3k) you should not have a problem with this. I have a hardware using 10K pull-up on nHOLD and nRDY which works fine.

But do you have a pull-up at all? Does your external memory use RDY and HOLD? As soon as you switch the processor mode to expansion mode, the processor will output ALL address signals on the bus independent of the address. So your external memory will also see all access to internal memory on the external bus.



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Jan 27, 2010 5. Re: nHOLD: memory expansion mode vs serial programming Feb 8, 2010 9:20 AM

Yes, on the MCU Setting page, I have the Processor Mode set to Memory Expansion Mode, Memory Space Expansion is set to Normal Mode, PM13 is '1' checked. There is a 100k pull up on HOLD.

Message was edited by: msherman



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Jan 27, 2010 6. Re: nHOLD: memory expansion mode vs serial programming Feb 8, 2010 12:42 PM

nHOLD: memory expansion mode vs serial...

Good news! Apparently our pull-up resistor was a bit too high to get a logic 1 on the HOLD pin, so we added a small(er) resistor in parallel and got the voltage up high enough to keep the chip awake during debugging. Thanks to both of you for your help!