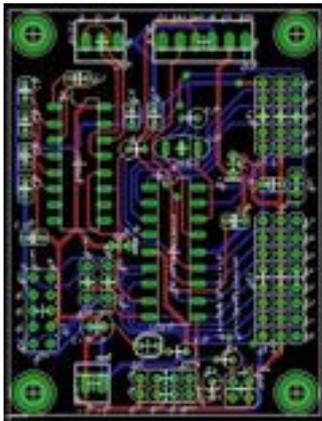


8 bit vs. 32 bit Microcontrollers

Screaming Circuits

There's a lot of talk these days about the new generation of 32-bit microcontrollers and the demise of the 8-bit controller. I'm a big fan of the [Beagleboard and mbed](#) [1] boards (ARM Cortex A8 and ARM Cortex M3). And the Cortex M0 processor looks to be a very promising low-end 32-bit ARM. By the looks of it, ARM could end up ruling the below-X86 world soon.



[2] But, one consideration to the 8 vs. 32 discussion that I haven't heard much about is the start-up effort required and the barriers to entry for non-experts. The new ARM Cortex-M processors look to be a great move toward addressing the low-cost and low-power end of the microcontroller market, but they don't really address the buildability issue and the category-entry issue.

At Screaming Circuits, we run into quite a few designs in industries that are just now beginning to automate. In many of these cases, mechanical engineers, not software or electrical engineers, are tasked with putting the brains into the product. These mech folks have to learn, design, layout, build and code. The PIC and Atmel processors, with their thru-hole or big SMT packages, easy 5V power, low clock-speeds and huge base of community support make an impossible job possible for the new entrants into the embedded world. If a thru-hole part with a 20MHz clock can do the job, novice designers can greatly increase their chances for a successful design than if they have to deal with fine pitch parts and 100MHZ clocks.

In a perfect world, this wouldn't be a concern, but as it is, a lot of companies need these parts that are easy to implement for a new designer. M0's may be priced in the sub-\$1.00 range, but piece price is not the only component of "cost".

Duane Benson
"Apple II forever"

[SOURCE](#) [3]

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Links:

[1] <http://blog.screamingcircuits.com/2009/12/my-screaming-favorites-from-2009.html>

[2] <http://screamingcircuits.typepad.com/.a/6a00d8341c008a53ef0133ec504387970b-popup>

[3] <http://blog.screamingcircuits.com/2010/03/8-bit-vs-32-bit-microcontrollers.html>