

Re: Adding USB Interface to Low-Cost 8-Bit Microcontroller

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- *From:* Tim Wescott <tim@xxxxxxxxxxxxxxxxxxx>
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David T. Ashley wrote:

Hi,

I work for a company that produces low-cost consumer electronics that use 8-bit microcontrollers. These have the standard 8-bit whistles, like SPI, SCI, etc.

We've kicked around the idea of allowing customers to re-FLASH our products. The re-FLASHing would be facilitated by code we write that runs in the microcontroller and reprograms a portion of the FLASH.

We have a handle on digital signatures and what would be required to prevent a customer from "forging" a software load.

However, what is required to implement a USB interface in the product (for an 8-bit microcontroller), and what is required as far as a driver on the PC side? The goal would be that we distribute a re-FLASHing application to the customer that runs on the PC. They would run this application with a USB cable connected from the PC to our product.

What all is required (hardware, driver development kits, etc.)?

Thanks for all.

At this late date I'm just adding my vote, but...

If I were in a hurry, or if my design team really didn't seem up to learning how to do the USB thing, then I'd consider one product rev with an FTDI chip or similar, talking serial to the other micro. It would probably be easier to implement the secure boot code, and it would give you a chance to learn half the problem then half again, but you'd spend a lot of money on the production floor.

Probably, I'd end up going to the microprocessors that include USB. There are plenty of inexpensive 8-biters out there, so you should have a wide range to choose from. Your production volumes are high, so you can (or at least should be) able to afford the time to make it work. Heck, if your volumes are high enough you should be able to arm-twist the processor vendor into making it all work for you, and you'll just have to put it in.

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Tim Wescott
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