

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

Source: <http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2008-06/msg00345.html>

- *From:* "Ulf Samuelsson" <ulf@xxxxxxxxxxxxxx>
 - *Date:* Thu, 12 Jun 2008 00:36:17 +0200
-

"David T. Ashley" <dta@xxxxxxxx> skrev i meddelandet
news:yaqdnfLQ1Z1-SNDVnZ2dnUVZ_orinZ2d@xxxxxxxxxxxxxxxx

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.

If you want to make this as simple as possible for the user, then you could implement a boot monitor with USB – CDC on your target. When such a device is connected to the USB bus a COM port appears on the PC, and you can use any application communicating over a serial port to send data to the target. Hyperterminal with X-Modem should always be available on a Windows PC.

The target should have USB and selfprogramming capability.

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

There are several AVR/AVR32/AT91SAM7 (ARM) circuits meeting those requirements.

If you do not mind the customers getting their own cable, then the AVR-ISP Mk II

will let you reprogram the device using a 6 pin header using the SPI port. This will allow you to use cheaper parts, because they will not need USB, nor selfprogramming.

The cable is \$36 at Digikey

—

Best Regards,
Ulf Samuelsson

This is intended to be my personal opinion which may, or may not be shared by my employer Atmel Nordic AB

.