

Re: Audio uC Development Board

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 - *Date:* Fri, 03 Feb 2006 10:25:58 +0000
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Spehro Pefhany <speffSNIP@xxxxxxxxxxxxxxxxxxxx> writes:

On Thu, 02 Feb 2006 23:58:09 +0000, the renowned John Devereux <jdREMOVE@xxxxxxxxxxxxxxxxxxxx> wrote:

I'm using the analog devices ADUC7024 in a new design. ARM7 CPU, with fast 12 bit ADC and dual 12 bit DACs. It seems to be a really nice chip. It's LQFP only, but you could perhaps get the development board for it and use it's prototyping area for the rest of your project.

Any comments on it yet?

Apart from "It seems to be a really nice chip" ? :)

OK, apart from the more obvious headline features:

– I have only used the dev board so far, but everything I tried seemed to work straight away – unusually for me. All the registers seemed to have sensible power-on defaults and simple configuration. I already had my toolchain (gcc etc) setup for the LPC2138, so was able to add support for the ADUC7024 quite quickly.

– The only real documentation I found was the datasheet (most similar devices tend to have a much thicker "programmers reference manual" too). However the information I needed was pretty much all there and presented in an admirably concise form.

– The device is missing the usual ARM vectored interrupt controller, i.e. you have to determine the interrupt source yourself from a bitmask in a status register.

– Built in core regulator, so only need to supply +3V3. 5V tolerant I/O.

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- It has some kind of PLA / FPGA built-in. Probably never use it but an interesting idea!
- single 32kHz XTAL
- I/O's can be set and cleared via writes to separate registers. For me this means that different pins of a port can be safely controlled from different execution threads without disabling interrupts. Unlike, say, the Sharp LH79520.
- No DMA, so the 1MHz ADC will need to use the FIQ, and some pretty tight assembly code, to be effective at full speed.
- +125'C operation. One of the very few devices specified for this.
- Good support. Free samples. I emailed a question about flash endurance at high temperatures which was answered quickly; apparently there is a new datasheet about to be released too. The actual endurance is nowhere near as dire as the Rev.0 datasheet would suggest!

John Devereux

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