

Re: DSP System

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2007-07/msg02773.html>

- *From:* "David L. Jones" <altzone@xxxxxxxx>
 - *Date:* Fri, 20 Jul 2007 03:55:58 -0700
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On Jul 20, 6:05 pm, "Jon Slaughter" <Jon_Slaugh...@xxxxxxxx> wrote:

"David L. Jones" <altz...@xxxxxxxx> wrote in
messagenews:1184912759.591055.253980@xx

On Jul 20, 1:55 pm, "Jon Slaughter" <Jon_Slaugh...@xxxxxxxx> wrote:

How hard is it to actually implement a DSP system?

I've been looking at the TMS320C6720 and some conversion devices and it seems I can gather all the components needed but I really don't have a good idea about how to go and implement something like that. The pdf's I've looked at on TI's don't really go into detail about how to actually put something together(atleast the one's I've seen).

All I want to do is take an analog signal, add some digital filtering(well, whatever I want once I get into the software side), and output the signal.

The digital conversion's seems pretty straight forward and I was plan on using something like the PCM1741 and PCM1807 or something similar for the

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conversion(although I ultimately want to go to 192khz).

I think all I'll need is the converters, memory, and the dsp? (I don't think I'll need a controller?) Is it going to be much harder than just hooking all these up together and then downloading some code to the dsp?

At this point I do not need anything fancy and just want to apply some effects like reverb and chorus to a signal for a start. The biggest problems at this point is the IC packaging for these devices as most are out of my reach(BGA, for example) for prototyping.

Is such a conceptually simple project out of my ability as a hobbyist? Do I need to come up with some prototyping schematic and get some pcb's made for prototyping? I'm really not sure how to go about this and I can't find any documents online that can give me some details about the process ;/

Any ideas?
Thanks,
Jon

What you need is a DSP development board. They will usually contain all you need to get a project like this off the ground – the DSP chip, any required memory, a few ADC inputs and DAC outputs etc, many are targeted specifically for audio use. It's already done for you. TI have a complete range of them:

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<http://focus.ti.com/dsp/docs/dspsupporttnp.tsp?sectionId=3&tabId=2079...>

They aren't particularly cheap, but it can save you weeks of mucking around with hardware, when really a project like this is all about the software.

There is nothing really special about DSP's, they are essentially just a microprocessor with specialised hardware making them faster at math and signal processing functions than a regular microprocessor or microcontroller.

I've looked at that but I can justify the expense. Its got, what, about 20–30\$ worth of components and another 20–30\$ for the pcb (if that) yet they want 400 for just a starter? If theres something I'm missing that makes it worth it then please let me know about it but it seems like its not worth it.

Jon

I forgot to mention that you don't need a DSP for audio processing these days, many of the 16/32 bit processors on the market can easily handle it. You might be able to score a processor development kit with an audio interface for cheaper than the DSP offerings perhaps.

Dave.