

Re: Keyboard and Video interfacing

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- *From:* "Abstract Dissonance" <Abstract.Dissonance@xxxxxxxxxxx>
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"David L. Jones" <altzone@xxxxxxxxxxx> wrote in message
<news:1142820676.845039.264370@xx>

Abstract Dissonance wrote:

I was thinking about trying to do a project that involves a PC keyboard (and maybe mouse) and possibly a PC video monitor.

Can someone point me in the right direction to get started? I'd like basically to "sense" or "transform" information between the data paths of the pc and these devices... the keyboard one is sorta like a data logger type of thing but actually is something else.

I'm sure the PS/2 port for the keyboard/mouse is very easy to handle but what I'm worried about is for USB keyboards... not sure if the protocol is standardized... if so then it should be pretty easy to interface using a PIC that supports USB?

The USB keyboard will be a pain, stick with the PS/2, that's real easy to decode with any micro. Lots of sample code around etc.

I have a pic that does USB so it can't be much more difficult than the PS/2.

What kinda signals come out from the graphics card to the video monitor?
I assume there are both analog and digital outputs since I've seen newer graphics cards with D/V out. Would it be relatively easy to "sample" the video output of a graphics card and transform it then send it along its way to the monitor?

Re: Keyboard and Video interfacing

Basically, forget it, it will be too difficult. You are talking very high speed sample rate ADC's, lots of memory, not to mention resolution and syncing problems in the hundreds of MHz range. It takes a massive custom ASIC device to do this.

It was very difficult when I did it back in 1994 with 640x480 LCD panels, and is now an order of magnitude harder. No one does it without a special purpose design VLSI chipset these days.

heh

1994 and 2006 is a huge difference. Surely they now have chips that interface between a pc graphics signal and a crt or LCD...

the AVG2510 from NS does just this except it does not allow custom graphics operation... What I need to do is be able to draw basic primitives and do bitmap testing which I could implement myself if I had access at the pixel level.

On the other hand, if you simply want to drive a VGA screen direct (at low resolution) from a micro or FPGA, that is pretty easy, and there are several around who have done this and sell a module like this one: <http://www.dontronics.com/micro-vga.html>
There are others too.

Dave :)

Well, I need something like that but also need to "get at" the underlying graphics that is sent out from the pc graphics card. Basically recreating a simple graphics card that sits inbetween the monitor and pc graphics card.

First things first I guess... need to work on the keyboard and get that done then I can worry about the video part. One thing I'm wondering though is what type of signal is output from the pc graphics card. Is it composite for analog and serial/parallel for digital(what else would there be for digital) where the bits represent pixel colors(like RGB format)?

Thanks,
Jon

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