

Re: Keyboard and Video interfacing

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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?

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 sent it along its way to the monitor?

(I'm more interested in doing this in hardware than software)

Thanks for any info,
Jon

Hi, Jon. By far the easiest way to interface between a modern keyboard and a modern monitor is to put a PC between them.

Having said that, doing some things the old fashioned way can be educational. If you really want to do something like this, I'd recommend finding an old copy of Don Lancaster's "TV Typewriter Cookbook". It's a serious hobbyist-level book which shows how to interface a parallel input keyboard with a television, to show letters and characters on screen. If you can't scrounge a copy, they're available used from Amazon for a few bucks:

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<http://www.amazon.com/gp/product/0672213133/104-1780992-3603126?n=283155>

Look at the book carefully, because you're going to have to make some serious mods. The PROMs and some of the analog components in the book are obsolete (I think it's been 30 years), but you can work out substitutions. Go figure — you may be the only person on the face of the earth trying to do this.

Seriously, though, it would be really educational, and I would guess Don might be interested in hearing about your work. His website is:

<http://www.tinaja.com>

Another thing you might want to try is finding an old VT-100 terminal, and using a PIC to translate keypad inputs into RS-232 serial characters to send to the terminal screen. You might be able to do some curious things with ANSI-type graphics.

But interfacing a PC keyboard to a VGA display would basically be recreating the PC keyboard interface with whatever processor you want in the middle, and a VGA card from scratch. You should be able to get a PIC to interface with a keyboard (the AT keyboard interface is serial), but you need a lot more than a PIC to control a VGA card, and the VGA card itself would be a major engineering effort. This isn't realistic.

Good luck
Chris

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