
Subject: [simpits-tech] Just a quick update.....
Posted by [dabigboy](#) on Tue, 10 Apr 2012 04:59:40 GMT
[View Forum Message](#) <> [Reply to Message](#)

Had great success with the Tracor CDU retrofit/rebuild over the past couple days:

<http://www.flickr.com/photos/alfamatt/6917304812/in/photostr eam>

<http://www.flickr.com/photos/alfamatt/6917304854/in/photostr eam>

<http://www.flickr.com/photos/alfamatt/6917304856/in/photostr eam>

Annd the current state of the sim! :-O

<http://www.flickr.com/photos/alfamatt/6917304890/in/photostr eam>

All that's left is to wire the keypad to a controller of some sort (which I already have traced and documented), and then actually write the CDU/FMS software. This is going very well. :)

Matt

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Just a quick update.....
Posted by [Roberto Waltman](#) on Tue, 10 Apr 2012 14:34:09 GMT
[View Forum Message](#) <> [Reply to Message](#)

dabigboy@cox.net wrote:

> Annd the current state of the sim! :-O

>

> <http://www.flickr.com/photos/alfamatt/6917304890/in/photostr eam>

Nice design, gives you a good view of the runway on short final ... ;)

--

Roberto Waltman

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Just a quick update.....

Posted by [Gene Buckle](#) on Tue, 10 Apr 2012 16:06:23 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Mon, 9 Apr 2012, dabigboy@cox.net wrote:

> Had great success with the Tracor CDU retrofit/rebuild over the past

> couple days:

>

Very nice Matt! What sized LCD are you using in there?

If you can wait, you could use a Raspberry Pi board with the GPIO breakout board to run that whole thing....

g.

--

Proud owner of F-15C 80-0007

<http://www.f15sim.com> - The only one of its kind.

<http://www.diy-cockpits.org/coll> - Go Collimated or Go Home.

Some people collect things for a hobby. Geeks collect hobbies.

ScarletDME - The red hot Data Management Environment

A Multi-Value database for the masses, not the classes.

<http://www.scarletdme.org> - Get it today!

Buying desktop hardware and installing a server OS doesn't make a server-class system any more than sitting in a puddle makes you a duck.

[Cipher in a.s.r]

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Just a quick update.....
Posted by [dabigboy](#) on Tue, 10 Apr 2012 23:52:27 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Gene Buckle <geneb@deltasoft.com> wrote:
> On Mon, 9 Apr 2012, dabigboy@cox.net wrote:
>
> > Had great success with the Tracor CDU retrofit/rebuild over the past
> > couple days:
> >
> Very nice Matt! What sized LCD are you using in there?
>
> If you can wait, you could use a Raspberry Pi board with the GPIO breakout
> board to run that whole thing....

Had a stroke of luck on sourcing a screen.....the original CRT is a lovely 3" unit which doesn't seem to match up to anything (I looked up portable TVs, security monitors, etc, I really wanted to use another CRT for its true-black'ness in a dark cockpit). I ran across a "Citizen" brand LCD on ebay for \$25 out of an ex-cop car, which just happened to be "about" 3". As it turns out, it's a little too small for the Tracor, but it's close. I had to completely dissect the screen to modify the diffuser, reposition the backlight, and even remove some glass from the LCD screen itself (!!!!) to make it fit. The clear/blank area of the LCD glass is blacked out with electrical tape, but I have a piece of clear plastic in front of the works to maintain a smooth front (and to protect the LCD glass). It's a pretty old, low-quality screen, but as I am going to just be doing a black screen with green text, it should look fine.

I do have a PI on pre-order, but it looks like it's going to be at least August before I get it.....but yes, I had the same thought. With good graphics support and built-in composite/RCA video output, it's a natural! Will probably go ahead and write the software, then port it to the PI (since I'm using all Linux here anyway).

Matt

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Just a quick update.....
Posted by [dabigboy](#) on Wed, 11 Apr 2012 00:12:53 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Roberto Waltman <fsim@rwaltman.com> wrote:
> dabigboy@cox.net wrote:
>
> > Annnd the current state of the sim! :-O
> >
> > <http://www.flickr.com/photos/alfamatt/6917304890/in/photostr eam>
>
> Nice design, gives you a good view of the runway on short final ... ;)

Hehe, that's the new VFR model!

Matt

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [Roberto Waltman](#) on Wed, 11 Apr 2012 00:57:43 GMT
[View Forum Message](#) <> [Reply to Message](#)

dabigboy@cox.net wrote:
... the original CRT is a lovely 3" unit which doesn't seem
to match up to anything

There are a few 2 point something and 3" rectangular CRT's here:

<http://www.sphere.bc.ca/test/crts2.html>

The rest of that site is worth exploring.

Roberto Waltman

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [Gene Buckle](#) on Wed, 11 Apr 2012 01:01:46 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Tue, 10 Apr 2012, Roberto Waltman wrote:

> dabigboy@cox.net wrote:

> ... the original CRT is a lovely 3" unit which doesn't seem

> to match up to anything

>

> There are a few 2 point something and 3" rectangular CRT's here:

>

> <http://www.sphere.bc.ca/test/crts2.html>

>

> The rest of that site is worth exploring.

>

Oh hell yes. That whole site has got more goodies than anyone has a right to have. :) I just wish they had more 4" round CRTs...

g.

--

Proud owner of F-15C 80-0007

<http://www.f15sim.com> - The only one of its kind.

<http://www.diy-cockpits.org/coll> - Go Collimated or Go Home.

Some people collect things for a hobby. Geeks collect hobbies.

ScarletDME - The red hot Data Management Environment

A Multi-Value database for the masses, not the classes.

<http://www.scarletdme.org> - Get it today!

Buying desktop hardware and installing a server OS doesn't make a server-class system any more than sitting in a puddle makes you a duck.

[Cipher in a.s.r]

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [phoenixcomm](#) on Wed, 11 Apr 2012 03:27:51 GMT

[View Forum Message](#) <> [Reply to Message](#)

On 4/10/2012 8:01 PM, Gene Buckle wrote:

> On Tue, 10 Apr 2012, Roberto Waltman wrote:

>

>> dabigboy@cox.net wrote:

>> ... the original CRT is a lovely 3" unit which doesn't seem

>> to match up to anything

>>

>> There are a few 2 point something and 3" rectangular CRT's here:

>>

>> <http://www.sphere.bc.ca/test/crts2.html>

>>

>> The rest of that site is worth exploring.

>>

> Oh hell yes. That whole site has got more goodies than anyone has a right

> to have. :) I just wish they had more 4" round CRTs...

>

> g.

>

Cool Stuff, Cool Site

Cris H.

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [dabigboy](#) on Wed, 11 Apr 2012 03:57:42 GMT

[View Forum Message](#) <> [Reply to Message](#)

Thanks for the link, looks interesting. Actually the original CRT tube probably still works, I just have no idea how to power or drive it, so I went the "easy" (HAH!) route. I would love to run the original 3" CRT, but I'm afraid such a feat is far beyond my meager electronics skills.

Matt

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [phoenixcomm](#) on Wed, 11 Apr 2012 15:22:31 GMT

[View Forum Message](#) <> [Reply to Message](#)

On 4/10/2012 10:57 PM, dabigboy@cox.net wrote:

> Thanks for the link, looks interesting. Actually the original CRT tube probably still works, I just have no idea how to power or drive it, so I went the "easy" (HAH!) route. I would love to run the original 3" CRT, but I'm afraid such a feat is far beyond my meager electronics skills.

>

> Matt

>

> Simpits-tech mailing list

> Simpits-tech@simpits.org

> <http://www.simpits.org/mailman/listinfo/simpits-tech>

> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

>

that would have be a hell of a project.. probably easier to get the one in the box to work.. all the deflection amps are there and most likely the HV power supply as well but you would have need the schematic or a pin-out as a starting point. But if I remember you have an OLD Tracor unit.. I looked for info on the web an found zilch, nada, zip, Just the crap on ebay, so it would have been a huge challenge.

For all you Facebook users.. I have put up a new page for DIY Flight Simulator, as there was only one very cruddy page for Flight Simulators and has never been updated.. So you can check it out.

<http://www.facebook.com/DiyFightSimulator>

enjoy
Cris H.
phoenixcomm.wordpress.com

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Wed, 11 Apr 2012 16:49:04 GMT
[View Forum Message](#) <> [Reply to Message](#)

On 4/10/2012 10:57 PM, dabigboy@cox.net wrote:

> Thanks for the link, looks interesting. Actually the original CRT tube probably still works, I just have no idea how to power or drive it, so I went the "easy" (HAH!) route. I would love to run the original 3" CRT, but I'm afraid such a feat is far beyond my meager electronics skills.

>
> Matt

> _____
> Simpits-tech mailing list
> Simpits-tech@simpits.org
> <http://www.simpits.org/mailman/listinfo/simpits-tech>
> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

>
> Matt

I saw the working LCD nice.. for your keyboard dont re-invent the wheel.. a ps2 keyboard (downer) with the cable then a ps2 extension cable for your socket or rip one off a old dead motherboard, works really well. Check out my blog:

<http://phoenixcomm.wordpress.com/category/ps2-keybaord/>

there is a nice step by step tutorial here:

<http://www.instructables.com/id/Hacking-a-USB-Keyboard/>

<<http://www.instructables.com/id/Hacking-a-USB-Keyboard/>>

one note ps2 keyboard is a snap if you use usb you will need a USB shield, because you cant use the usb that goes to your host (wont work) then write a little lookup table and assign the keys: you have the full

alpha A-Z (but there shifted).
so use un-shifted first something like this:

```
/keyboardscanner(){
enum keys { MSG, ALPHA, CLR, ENTER }
//then the rest is a snap.. just use alpha keys but your going to have
to change them a little
raw = getchar(); // get first char
switch( raw ) {
case MSG: //do something
case ALPHA: {
    alpha_flag = 1; //shifts keybord for one char.
    raw = getchar();
    decodedchar = decoder( raw, alpha_flag )
    // send off the char
    alpha_flag = 0; // reset flag }
case CLR: // press once: clear last char or press twice: clear msg.
case ENTER: // does what it says.. no code.
default: {
    alpha_flag = 0; //make sure that the flag is reset
    decodedchar = decoder( raw, alpha_flag )
    // send off the char
    }}}
}
```

```
char decoder( char raw, int alpha_flag ){
// build a 2 dim lookup table (array) ie.. something in.. something
else out.. LOL
char keys[4][28]; //to make it simple do it in two passes..
keys[0] = { unshifted keys}
keys[1] = { shifted keys }
keys[2] = {outputed un-shifted keys }
keys[3] = {outputed shifted keys }

for( int n = 0; n < 29; n++ ){
    if( raw == keys[ alpha_flag][n] ) {
        return keys[ alpha_flag + 2 ][n];
    }
}
// error recovery ?
return -1;
}
/
```

BTW there is a ps2 keyboard library.. in the playground:

<http://www.arduino.cc/playground/Main/PS2Keyboard>
I have mine hooked up on a prototype shield (btw or maybe a gotcha?
the cheap proto shields on ebay ARE NOT STACKABLE!! beware!!!!

hopes this all helps just a little

Cris H.
phoenixcomm.wordpress.com
<<http://www.instructables.com/id/Hacking-a-USB-Keyboard/>>

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [dabigboy](#) on Thu, 12 Apr 2012 06:28:02 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Cris Harrison <phoenixcomm@gmail.com> wrote:

> >
> that would have be a hell of a project.. probably easier to get the one
> in the box to work.. all the deflection amps are there and most likely
> the HV power supply as well but you would have need the schematic or a
> pin-out as a starting point. But if I remember you have an OLD Tracor
> unit.. I looked for info on the web an found zilch, nada, zip, Just the
> crap on ebay, so it would have been a huge challenge.

Yep, I've had zero luck contacting anyone at BAE (who absorbed Tracor) or finding any docs on this thing. But it's ok, the LCD should work well enough. It is an old CDU, but it's a purdy one, and the keypad has proven to be pretty straightforward, so I feel lucky to have come across it...especially for so cheap!

Matt

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [dabigboy](#) on Thu, 12 Apr 2012 06:42:05 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Cris Harrison <phoenixcomm@gmail.com> wrote:

>
> Matt
> I saw the working LCD nice.. for your keyboard dont re-invent the
> wheel.. a ps2 keyboard (downer) with the cable then a ps2 extension
> cable for your socket or rip one off a old dead motherboard, works
> really well. Check out my blog:
> <http://phoenixcomm.wordpress.com/category/ps2-keyboard/>
> there is a nice step by step tutorial here:

Cris, you are a wealth of info. :) Thanks for the tips and code snippets, actually I have a couple of encoders out of old junked keyboards that I have been saving literally for YEARS, knowing that someday, somehow, I could use them in my sim....see, it pays to not throw stuff away! ;)

I'm actually going to be plugging directly into the PC itself, not the Arduino...my FMS software will be using Pygame (basically, SDL) on a host PC for now, probably switch to the Raspberry Pi once it arrives in another decade or so. :) It's going to save me a lot of work vs trying to make the Arduino do all the things the PC can already do handily. Pygame can do simple text, dots, and lines, which is sufficient for the old-school FMS and allows me to use an old cheap/free PC for now (actually Pygame/SDL can do all sorts of graphical stuff, including rendering full images, but if I need to do that it's usually simpler and quicker to just go straight to OpenGL and get better performance and features).

I am curious about using a PS2 keyboard directly with the Arduino, it sounds like it's pretty straightforward. I may look into that later on for other projects on the sim.

Matt

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Thu, 12 Apr 2012 15:05:30 GMT
[View Forum Message](#) <> [Reply to Message](#)

On 4/12/2012 1:42 AM, dabigboy@cox.net wrote:

> ---- Cris Harrison<phoenixcomm@gmail.com> wrote:

>> Matt

>> I saw the working LCD nice.. for your keyboard dont re-invent the

>> wheel.. a ps2 keyboard (downer) with the cable then a ps2 extension

>> cable for your socket or rip one off a old dead motherboard, works

>> really well. Check out my blog:

>> <http://phoenixcomm.wordpress.com/category/ps2-keyboard/>

>> there is a nice step by step tutorial here:

> Cris, you are a wealth of info. :) Thanks for the tips and code snippets, actually I have a couple of encoders out of old junked keyboards that I have been saving literally for YEARS, knowing that someday, somehow, I could use them in my sim....see, it pays to not throw stuff away! ;)

>

> I'm actually going to be plugging directly into the PC itself, not the Arduino...my FMS software will be using Pygame (basically, SDL) on a host PC for now, probably switch to the Raspberry Pi once it arrives in another decade or so. :) It's going to save me a lot of work vs trying to make the Arduino do all the things the PC can already do handily. Pygame can do simple text, dots, and lines, which is sufficient for the old-school FMS and allows me to use an old cheap/free PC for now (actually Pygame/SDL can do all sorts of graphical stuff, including rendering full images, but if I need to do that it's usually simpler and quicker to just go straight to OpenGL and get better performance and features).

>

> I am curious about using a PS2 keyboard directly with the Arduino, it sounds like it's pretty straightforward. I may look into that later on for other projects on the sim.

>

> Matt

>

> Simpits-tech mailing list

> Simpits-tech@simpits.org

> <http://www.simpits.org/mailman/listinfo/simpits-tech>

> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

>

shit man your going to tie up the pc with keyboard shit.. ok ..

did you look at the 2 articles about using your keyboard??

put the keybaord on the arduino.. and LEARN C

eclipse and gcc (gnu) c complier..

FASTER much CHEAPER beter CODE

and make your little pc a Linux box (try linuxmint)

and instead of 28 searches i can do it 5 with a Binary Search...
start in the middle so it would be 14 (half of 28)
test says is it higher or lower or equal..
but you will have to weight the table (sort) first..
Cris H.
btw did you ever get to my repository..
www.phoenixaerospace.us/downloads/nexgen
ltr

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Thu, 12 Apr 2012 15:17:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

On 4/12/2012 1:42 AM, dabigboy@cox.net wrote:

> ---- Cris Harrison<phoenixcomm@gmail.com> wrote:

>> Matt

>> I saw the working LCD nice.. for your keyboard dont re-invent the

>> wheel.. a ps2 keyboard (downer) with the cable then a ps2 extension

>> cable for your socket or rip one off a old dead motherboard, works

>> really well. Check out my blog:

>> <http://phoenixcomm.wordpress.com/category/ps2-keybaord/>

>> there is a nice step by step tutorial here:

> Cris, you are a wealth of info. :) Thanks for the tips and code snippets, actually I have a couple of encoders out of old junked keyboards that I have been saving literally for YEARS, knowing that someday, somehow, I could use them in my sim....see, it pays to not throw stuff away! ;)

>

> I'm actually going to be plugging directly into the PC itself, not the Arduino...my FMS software will be using Pygame (basically, SDL) on a host PC for now, probably switch to the Raspberry Pi once it arrives in another decade or so. :) It's going to save me a lot of work vs trying to make the Arduino do all the things the PC can already do handily. Pygame can do simple text, dots, and lines, which is sufficient for the old-school FMS and allows me to use an old cheap/free PC for now (actually Pygame/SDL can do all sorts of graphical stuff, including rendering full images, but if I need to do that it's usually simpler and quicker to just go straight to OpenGL and get better performance and features).

>
> I am curious about using a PS2 keyboard directly with the Arduino, it sounds like it's pretty straightforward. I may look into that later on for other projects on the sim.

>
> Matt

>

> Simpits-tech mailing list
> Simpits-tech@simpits.org
> <http://www.simpits.org/mailman/listinfo/simpits-tech>
> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

```
> *int* binary_search(*int* a[],*int* low,*int* high,*int* target) *{*  
>   *while* (low <= high) *{*  
>     *int* middle = low + (high - low)/2;  
>     *if* (target < a[middle])  
>       high = middle - 1;  
>     *else* *if* (target > a[middle])  
>       low = middle + 1;  
>     *else*  
>       *return* middle;  
>   *}*  
>   *return* -1;  
> *}*
```

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Thu, 12 Apr 2012 15:20:09 GMT
[View Forum Message](#) <> [Reply to Message](#)

On 4/12/2012 1:28 AM, dabigboy@cox.net wrote:
> ---- Cris Harrison<phoenixcomm@gmail.com> wrote:
>> that would have be a hell of a project.. probably easier to get the one
>> in the box to work.. all the deflection amps are there and most likely
>> the HV power supply as well but you would have need the schematic or a

>> pin-out as a starting point. But if I remember you have an OLD Tracor
>> unit.. I looked for info on the web an found zilch, nada, zip, Just the
>> crap on ebay, so it would have been a huge challenge.
> Yep, I've had zero luck contacting anyone at BAE (who absorbed Tracor) or finding any docs on
this thing. But it's ok, the LCD should work well enough. It is an old CDU, but it's a purdy one, and
the keypad has proven to be pretty straightforward, so I feel lucky to have come across
it...especially for so cheap!

>
> Matt
> _____
> Simpits-tech mailing list
> Simpits-tech@simpits.org
> <http://www.simpits.org/mailman/listinfo/simpits-tech>
> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!
>
dont pass the array a[] make it a global.. or just if this is custom a
built in..

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Thu, 12 Apr 2012 15:23:45 GMT
[View Forum Message](#) <> [Reply to Message](#)

On 4/12/2012 1:28 AM, dabigboy@cox.net wrote:
> ---- Cris Harrison<phoenixcomm@gmail.com> wrote:
>> that would have be a hell of a project.. probably easier to get the one
>> in the box to work.. all the deflection amps are there and most likely
>> the HV power supply as well but you would have need the schematic or a
>> pin-out as a starting point. But if I remember you have an OLD Tracor
>> unit.. I looked for info on the web an found zilch, nada, zip, Just the
>> crap on ebay, so it would have been a huge challenge.
> Yep, I've had zero luck contacting anyone at BAE (who absorbed Tracor) or finding any docs on
this thing. But it's ok, the LCD should work well enough. It is an old CDU, but it's a purdy one, and
the keypad has proven to be pretty straightforward, so I feel lucky to have come across
it...especially for so cheap!

>
> Matt
>
>

Simpits-tech mailing list
> Simpits-tech@simpits.org
> <http://www.simpits.org/mailman/listinfo/simpits-tech>
> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

>
but with this technique.. my array in the code i sent was keys[4][28]
with a binary search.. you could put all of the return values in a
keys[2][56] where 0 is both shift and unshifted
and 1 is the value you return.. you can search this in 8 trys!

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [Gene Buckle](#) on Thu, 12 Apr 2012 16:00:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Wed, 11 Apr 2012, dabigboy@cox.net wrote:

>
> I am curious about using a PS2 keyboard directly with the Arduino, it
> sounds like it's pretty straightforward. I may look into that later on
> for other projects on the sim.

Just be aware that a pc keyboard does not use a diode isolated switch matrix, so you'll only be able to hold 3 or 4 "keys" down at once before the keyboard stops responding to inputs.

g.

--
Proud owner of F-15C 80-0007
<http://www.f15sim.com> - The only one of its kind.
<http://www.diy-cockpits.org/coll> - Go Collimated or Go Home.

Some people collect things for a hobby. Geeks collect hobbies.

ScarletDME - The red hot Data Management Environment
A Multi-Value database for the masses, not the classes.
<http://www.scarletdme.org> - Get it _today_!

Buying desktop hardware and installing a server OS doesn't make a server-class system any more than sitting in a puddle makes you a duck.
[Cipher in a.s.r]

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [dabigboy](#) on Thu, 12 Apr 2012 23:52:09 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Gene Buckle <geneb@deltasoft.com> wrote:

>
> Just be aware that a pc keyboard does not use a diode isolated switch
> matrix, so you'll only be able to hold 3 or 4 "keys" down at once before
> the keyboard stops responding to inputs.

Yep, I'd noticed that. That's why I've only ever considered it for the FMS or another keypad'ish task, where I will probably never be pressing more than one button at a time.

I do seem to recall coming across some USB keyboards recently that could handle a ton of inputs at once, have you noticed this? I'll have to check the one on my radar PC next time I fire it up.

Matt

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [dabigboy](#) on Thu, 12 Apr 2012 23:58:43 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Cris Harrison <phoenixcomm@gmail.com> wrote:

> >

> shit man your going to tie up the pc with keyboard shit.. ok ..

> did you look at the 2 articles about using your keyboard??

Sure did.....great resources and I do understand it (I think). But I'm using an entire PC just for the FMS anyway, there are no other keyboard inputs to worry about. Sooo, might as well use them and save my \$30 Arduino for something else. :)

> and instead of 28 searches i can do it 5 with a Binary Search...

> start in the middle so it would be 14 (half of 28)

> test says is it higher or lower or equal..

> but you will have to weight the table (sort) first..

> Cris H.

> btw did you ever get to my repository..

> www.phoenixaerospace.us/downloads/nexgen

I don't think I got that link before, thank you! Now I gotta go get the login info from your other email. :)

Matt

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [Roberto Waltman](#) on Fri, 13 Apr 2012 01:04:27 GMT
[View Forum Message](#) <> [Reply to Message](#)

dabigboy@cox.net wrote:

> I do seem to recall coming across some USB keyboards recently that could handle a ton of inputs at once, have you noticed this? I'll have to check the one on my radar PC next time I fire it up.

The key phrase (pun intended) is "N-Key-Rollover". So, a 4-key rollover keyboard can detect 4 simultaneous presses, and so on.

--

Roberto Waltman

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [phoenixcomm](#) on Fri, 13 Apr 2012 05:09:28 GMT

[View Forum Message](#) <> [Reply to Message](#)

On 4/12/2012 1:42 AM, dabigboy@cox.net wrote:

> ---- Cris Harrison<phoenixcomm@gmail.com> wrote:

>> Matt

>> I saw the working LCD nice.. for your keyboard dont re-invent the

>> wheel.. a ps2 keyboard (downer) with the cable then a ps2 extension

>> cable for your socket or rip one off a old dead motherboard, works

>> really well. Check out my blog:

>> <http://phoenixcomm.wordpress.com/category/ps2-keyboard/>

>> there is a nice step by step tutorial here:

> Cris, you are a wealth of info. :) Thanks for the tips and code snippets, actually I have a couple of encoders out of old junked keyboards that I have been saving literally for YEARS, knowing that someday, somehow, I could use them in my sim....see, it pays to not throw stuff away! ;)

>

> I'm actually going to be plugging directly into the PC itself, not the Arduino...my FMS software will be using Pygame (basically, SDL) on a host PC for now, probably switch to the Raspberry Pi once it arrives in another decade or so. :) It's going to save me a lot of work vs trying to make the Arduino do all the things the PC can already do handily. Pygame can do simple text, dots, and lines, which is sufficient for the old-school FMS and allows me to use an old cheap/free PC for now (actually Pygame/SDL can do all sorts of graphical stuff, including rendering full images, but if I need to do that it's usually simpler and quicker to just go straight to OpenGL and get better performance and features).

>

> I am curious about using a PS2 keyboard directly with the Arduino, it sounds like it's pretty

straightforward. I may look into that later on for other projects on the sim.

>

> Matt

>

> Simpits-tech mailing list

> Simpits-tech@simpits.org

> <http://www.simpits.org/mailman/listinfo/simpits-tech>

> To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

>

ok your not thinking...

1. how are you going to debug this beast.. with out the pc's keyboard?

2. arduino(s) are cheep!

3. If you hackerize a old keyboard.. the ps2 is better as you dont have to buy the USB Shield!!

4. also this way you are dealing with your program no system calls!!

5. since its a ps2 keyboard on the arduino you can work on two fronts at once..

a. you can plug in a regular ps2 keyboard to make shure your software is right.

b. you can double check your hackerize keyboard incase of a misswire..

Cris

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [Gene Buckle](#) on Fri, 13 Apr 2012 15:25:16 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Thu, 12 Apr 2012, dabigboy@cox.net wrote:

>

> ---- Gene Buckle <geneb@deltasoft.com> wrote:

>>

>> Just be aware that a pc keyboard does not use a diode isolated switch

>> matrix, so you'll only be able to hold 3 or 4 "keys" down at once before

>> the keyboard stops responding to inputs.

>
> Yep, I'd noticed that. That's why I've only ever considered it for the
> FMS or another keypad'ish task, where I will probably never be pressing
> more than one button at a time.

>
You can add diodes yourself like so:
<http://www.geneb.org/ematrix.png>

This is for the EPIC input matrix, but it would be essentially the same schematic for hacking a keyboard matrix. Once you identify the row & column lines it's easy.

Alternately, you could just grab an Arduino and a Centipede Shield and skip the whole keyboard mess to begin with. :)

g.

--

Proud owner of F-15C 80-0007
<http://www.f15sim.com> - The only one of its kind.
<http://www.diy-cockpits.org/coll> - Go Collimated or Go Home.
Some people collect things for a hobby. Geeks collect hobbies.

ScarletDME - The red hot Data Management Environment
A Multi-Value database for the masses, not the classes.
<http://www.scarletdme.org> - Get it today!

Buying desktop hardware and installing a server OS doesn't make a server-class system any more than sitting in a puddle makes you a duck.
[Cipher in a.s.r]

Simpits-tech mailing list
Simpits-tech@simpits.org
<http://www.simpits.org/mailman/listinfo/simpits-tech>
To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [phoenixcomm](#) on Fri, 13 Apr 2012 19:33:12 GMT

[View Forum Message](#) <> [Reply to Message](#)

On 4/13/2012 10:25 AM, Gene Buckle wrote:

> On Thu, 12 Apr 2012, dabigboy@cox.net wrote:

>

>> ---- Gene Buckle<geneb@deltasoft.com> wrote:

>>> Just be aware that a pc keyboard does not use a diode isolated switch

>>> matrix, so you'll only be able to hold 3 or 4 "keys" down at once before

>>> the keyboard stops responding to inputs.

>> Yep, I'd noticed that. That's why I've only ever considered it for the

>> FMS or another keypad'ish task, where I will probably never be pressing

>> more than one button at a time.

>>

> You can add diodes yourself like so:

> <http://www.geneb.org/ematrix.png>

>

> This is for the EPIC input matrix, but it would be essentially the same

> schematic for hacking a keyboard matrix. Once you identify the row&

> column lines it's easy.

>

> Alternately, you could just grab an Arduino and a Centipede Shield and

> skip the whole keyboard mess to begin with. :)

>

> g.

>

>

gene.. I like your position but its a white herring.. On most avionics keyboards you cant get an N rollover problem.. with you idea about using a matrix, is ok but you need either hardware (with out the arduino, just some counters, and a timer) or you do it in software...

did you look at Matt's CDU no room to get N-rollover.. arduino is almost plug and play.. + you get the pc's keyboard for debug and running the pc..

Enjoy the dark side..

Cris H.

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [Gene Buckle](#) on Fri, 13 Apr 2012 20:21:29 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Fri, 13 Apr 2012, Cris Harrison wrote:

> On 4/13/2012 10:25 AM, Gene Buckle wrote:

>> On Thu, 12 Apr 2012, dabigboy@cox.net wrote:

>>

>>> ---- Gene Buckle<geneb@deltasoft.com> wrote:

>>>> Just be aware that a pc keyboard does not use a diode isolated switch

>>>> matrix, so you'll only be able to hold 3 or 4 "keys" down at once before

>>>> the keyboard stops responding to inputs.

>>> Yep, I'd noticed that. That's why I've only ever considered it for the

>>> FMS or another keypad'ish task, where I will probably never be pressing

>>> more than one button at a time.

>>>

>> You can add diodes yourself like so:

>> <http://www.geneb.org/ematrix.png>

>>

>> This is for the EPIC input matrix, but it would be essentially the same
>> schematic for hacking a keyboard matrix. Once you identify the row&

>> column lines it's easy.

>>

>> Alternately, you could just grab an Arduino and a Centipede Shield and

>> skip the whole keyboard mess to begin with. :)

>>

>> g.

>>

>>

> gene.. I like your position but its a white herring.. On most avionics

I would strongly suggest you not try to teach your grandmother how to
steal sheep.

g.

--

Proud owner of F-15C 80-0007

<http://www.f15sim.com> - The only one of its kind.

<http://www.diy-cockpits.org/coll> - Go Collimated or Go Home.

Some people collect things for a hobby. Geeks collect hobbies.

ScarletDME - The red hot Data Management Environment
A Multi-Value database for the masses, not the classes.
<http://www.scarletdme.org> - Get it today!

Buying desktop hardware and installing a server OS doesn't make a server-class system any more than sitting in a puddle makes you a duck.
[Cipher in a.s.r]

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)
Posted by [dabigboy](#) on Fri, 13 Apr 2012 23:46:01 GMT
[View Forum Message](#) <> [Reply to Message](#)

---- Cris Harrison <phoenixcomm@gmail.com> wrote:

> >

> ok your not thinking...

> 1. how are you going to debug this beast.. with out the pc's keyboard?

> 2. arduino(s) are cheep!

> 3. If you hackerize a old keyboard.. the ps2 is better as you dont have
> to buy the USB Shield!!

> 4. also this way you are dealing with your program no system calls!!

> 5. since its a ps2 keyboard on the arduino you can work on two fronts at
> once..

> a. you can plug in a regular ps2 keyboard to make shure your software is
> right.

> b. you can double check your hackerize keyboard incase of a misswire..

> Cris

Well, I'm not worried about wiring that much, in fact I technically don't even have to **care** what button goes to what key assignment, so long as each Tracor button is wired to a valid row/column assignment on the PS/2 board (some combinations are unused and yield no keystroke). From there I just press each button on the Tracor and see what keystroke results, and program my FMS app accordingly.

Remember the games where you select a game function and press whatever key you want for

that function/command? I actually already wrote my own code to do exactly that for a game I made years ago....while I obviously won't be implementing this code into the CDU, the concept is simple enough, and is something I'm familiar with.

Nearly all of my dev work on the sim is done from just one Linux PC, which is connected over the net to the other machines (Samba fileshares for deploying code, and SSH for whatever minor tweaks or local commands are needed per PC), so I shouldn't ever need to even hook a regular keyboard into the CDU. But if I do, I can just use a USB keyboard.

Matt

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!

Subject: Re: [simpits-tech] Small CRTs (Was: Just a quick update.....)

Posted by [dabigboy](#) on Sat, 14 Apr 2012 00:01:18 GMT

[View Forum Message](#) <> [Reply to Message](#)

---- Gene Buckle <geneb@deltasoft.com> wrote:

>

> This is for the EPIC input matrix, but it would be essentially the same
> schematic for hacking a keyboard matrix. Once you identify the row &
> column lines it's easy.

I've actually done something similar for the "little" Leo Bodnar board to get 30+ inputs out of the 12 pin model, but the rows and columns are of course clearly documented. I "decoded" my PS/2 encoder last night. It has one small connector of pins (8 of them) and one large connector....I've made the assumption that these corresponded to rows and columns. After documenting most of the keyboard inputs, I started organizing them in a spreadsheet. Now it's entirely possible I've misidentified which pins should be considered part of a row and which ones are part of a column, but I reached a point where a few of the inputs I documented would conflict with other assignments if I were to wire them up to the CDU.

In other words, both connections of a few of the inputs I documented occurred entirely within a row or column. But I did get enough combinations documented to handle all the buttons on the CDU except 3 (I will sacrifice "ON/OFF", "BRT", and "DIM").

The main problem is that the CDU itself uses a matrix, and it's not much similar to the keyboard. Even with diodes, it appears I would at some point activate more than one input with a single button press (with the conflict occurring on the CDU side). The situation is no doubt complicated by the fact that I don't have docs for either the CDU or the keyboard, so both matrices are just the best I could figure out and may not be exactly right....I have a sneaky suspicion that if I fully wrapped my head around the CDU's keypad matrix, life would be easier.

> Alternately, you could just grab an Arduino and a Centipede Shield and
> skip the whole keyboard mess to begin with. :)

True that....the Centipede is on my to-buy list, and I've got your output board for the Centipede downloaded in case I decide to have one made for myself. :)

Matt

Simpits-tech mailing list

Simpits-tech@simpits.org

<http://www.simpits.org/mailman/listinfo/simpits-tech>

To unsubscribe, please see the instructions at the bottom of the above page. Thanks!