

Re: 60Hz noise making it's way into my test

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- *From:* "Chris" <cfoley1064@xxxxxxxxxx>
 - *Date:* 5 Apr 2006 18:21:52 -0700
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SklettTheNewb wrote:

I am NOT an engineer, I'm helping my Dad out with a PC based data acquisition program to test a product his company makes.

With that little disclaimer out of the way, here is the problem:

I'm reading voltage values of his device, it outputs an AC square wave signal at 4000Hz. The voltages vary from 0 – 25 Vcc Due to this variance in voltage, I wasn't able to use the counter on the acquisition board, so I need to resort to counting rising edges in the collected voltage data, then determine from that the frequency. This is all working pretty well.... as long as I power the device being measured with batteries. If I use the wall adapter, I'm getting a pattern in the results that repeats at 60Hz. This made me suspect the power supply so that's when I tried the batteries and it worked correctly.

So, my question is: What do I need to add to my DC power supply to remove that 60Hz that is making it's way into the system?

I really have no idea... when I put the power supply on the scope, I don't see the signal, but sure enough.. it's there somehow as it shows up in the data I'm capturing.

You can see a screen shot of it here:

<http://steventara.dnsdojo.com/images/pattern.gif>

Our power supply puts out 3.22 Vdc @ 1.5 Amps

Hopefully this is something that might not be too hard to fix.

best Regards,
Steve Klett

Hi, Steve. The trace and your description indicate that you're probably getting 120Hz ripple on your wall wart power supply — that

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makes it a good candidate for replacement. If you can find the spec on the wall wart (usually on the back of the supply, on the side where the plug is), that will give you a good idea where to start. Possibly your wall wart is/was a 5VDC regulated power supply? It kind of looks like the input cap in the wall wart went south and opened up. Replacements are commercially available at less than \$20 for 5VDC regulated (make sure it's a linear regulated supply) at 1 amp.

Jameco sells their P/N 168605CB 5V regulated supply for \$12.55 -- buy 2, and you've got your \$25 minimum.

www.jameco.com

If it worked well before, you should be able to get it working again. Unfortunately, you didn't include any more information, so I guess it would be tough to be more specific. Sorry about that. Feel free to post again with as much information as you want.

Good luck
Chris

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