Re: kablooey

Source: http://sci.tech−archive.net/Archive/sci.electronics.design/2006−03/msg01195.html

- *From*: "Tim Shoppa" <shoppa@xxxxxxxxxxxxxxxx>
- *Date*: 9 Mar 2006 07:49:47 −0800

John Larkin wrote:

> One of my better customers just called. Seems six of my VME arbitrary waveform generators failed, in the same VME crate, simultaneously. We're talking over $30K of damage here.
>
> I had them put a scope on the +5 supply and switch power on. It ramped up in maybe 100 ms, peaked at 5.6 for a few ms, then settled down to 5.1. That's above the 5.5 abs max for my CPU and FPGA chips, but not really that bad.
>
> So I asked them to switch power off for various times, then back on. A 2 second delay gave 7.5 volts peak. An estimated 0.5 sec delay, as fast as they could work the switch, ramped up to 8.8. I'm guessing an optimum brownout might well hit 10 volts.
>
> Dumb switching power supply design... stupid loop dynamics and no crowbar!

Crowbars for linear 5V supplies are typically set at 6.2V, but the spec on the crowbar would allow it to not trip until 6.6V. For better or worse, on switching supplies the specs are usually even looser.

VME crates are from the days of LS TTL, and those chips would generally take 7V on Vcc and still be within official max limits, and they usually wouldn't expire based on just getting a little spike of 10V.

If you get the boards back and determine what did blow, I'd be very interested in the details. Are they failing self−test, or have the bus interfaces blown, or is everything toast?

Tim.

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