

Re: kablooey

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- *From:* John Larkin <jlarkin@xx>
 - *Date:* Fri, 10 Mar 2006 08:39:57 -0800
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On Fri, 10 Mar 2006 05:48:08 GMT, ehsjr <ehsjr@xxxxxxxxxxxxxxxx>
wrote:

John Larkin wrote:

On 9 Mar 2006 07:49:47 -0800, "Tim Shoppa"
<shoppa@xxxxxxxxxxxxxxxx>
wrote:

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.

<snip>

We got one back yesterday. Two chips are running hot, the MC68332 CPU (directly on +5) and a big Xilinx SpartanXL FPGA. The FPGA is powered from +3.3, linear-regulated from the +5 supply, but it connects to the CPU bus, and it's supposed to be 5-volt tolerant on its I/Os. So it looks like the +5 blew the CPU and it, in turn, pulled up a bunch of the FPGAs i/o pins and fried it too.

What's cool is that the CPU is running very hot but is still executing the firmware! And the FPGA is hot and really dead.

We're going to replace both chips (418 pins total!) and see how things

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look. There are 5 more FPGAs on the board, but we're optimistic they're OK.

Here's a pic of the board.

<http://www.highlandtechnology.com/DSS/V375DS.html>

John

\$30,000 repair

/ Rock \
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V - -

_o/
| J. Larkin
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Hard Place piss off the customer
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I didn't piss off the customer; I helped them find the problem.

My questions: what are you going to do on the repaired board to prevent a repeat?

Probably nothing. 8.8 volts isn't a reasonable rail in an IEEE-standard system with an abs max requirement of 5.25. The crate needs to be fixed.

Can you offer to market that engineering change at x\$ per for the other boards that haven't yet been blown? What happens with the 5 other boards that are blown?

We'll have to fix them. Don't know who pays, but that's not really important. It looks like we'll have to replace two big chips and

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retest/recal, maybe a day's work per board.

There must be a way to turn this into a public relations
coup ...

This is a wonderful customer. If you tell them the truth and work
sincerely to solve problems, they're not in the blame business, or the
penny-pinching biz either.

John

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