

Marty Bloss

From: Gbsapp <gbsapp-bounces@listmgr.nrao.edu> on behalf of G Jones
<glenn.caltech@gmail.com>
Sent: Tuesday, September 02, 2014 9:56 AM
To: David MacMahon
Cc: gbsapp@nrao.edu
Subject: Re: [Gbsapp] "spikes" problem
Attachments: ATT00001.txt

After searching my email, I found that it was Andrew Martens who did the extensive FFT simulations and verifications. We should contact him to see if we can use his test bench.

As I write this, I remember that Dave also has some FFT test benches, so we could try that too.

Glenn

On Fri, Aug 29, 2014 at 6:33 PM, David MacMahon <davidm@astro.berkeley.edu> wrote:
Hi, Dan,

On Aug 29, 2014, at 2:34 PM, Dan Werthimer wrote:

> dave thinks it might be an overflow problem, even though
> the problem persists with a noise source.

After some more thought, I now think it could be caused by overflow or by quantization effects on very low power signal as you have suggested. Either one would result in a non-linearity that would affect all channels from that point onward.

It would be very helpful to know the power levels throughout the FPGA signal path (e.g. ADC output, PFB_FIR output, FFT output, VACC output, etc.) to make sure that the power level of the signal is appropriate for the dynamic range provided by the various bit widths of the signal path.

Dave

Gbsapp mailing list
Gbsapp@listmgr.nrao.edu
<https://listmgr.nrao.edu/mailman/listinfo/gbsapp>