Subject: RE: K-band receiver noise characterization
From: "Olin, Timothy R" <TOlin@cdscc.nasa.gov>
Date: Fri, 18 Oct 2013 10:49:18 +1100
To: Tom Kuiper <kuiper@jpl.nasa.gov>
CC: "Soni, Ashish" <ASoni@cdscc.nasa.gov>, <greenhill@cfa.harvard.edu>, "Ingyin Zaw" <iz6@cosmo.nyu.edu>, aquib moin <aquib.moin@nyu.edu>, frank briggs <fbriggs@mso.anu.edu.au>, "Baines, Graham P" <GBaines@cdscc.nasa.gov>, "Horiuchi, Shinji" <shoriuchi@cdscc.nasa.gov>

Hi Tom,

Here's ACME's data from last Friday. The skies were quite clear, so we're still waiting for a cloudy day before I think you'll get what you're after.

As for the stability issues (particularly for Horn 2 Polarisation 1), the techs went up yesterday and found some loose connectors. I'm running some more stability tests looking at the ambient load to see if that made any difference.

Regards,
Timothy Olin

-----Original Message-----
From: Horiuchi, Shinji
Sent: Friday, 11 October 2013 8:58 PM
To: Tom Kuiper
Cc: Soni, Ashish; greenhill@cfa.harvard.edu; Ingyin Zaw; aquib moin; frank briggs; Baines, Graham P; Olin, Timothy R
Subject: RE: K-band receiver noise characterization

Hi Tom,

Attached are new squarelaw detector data from today.

The first data squarelaw131010_20Hz.txt is for about 1700 seconds. I ran your Allan variance script and the result was consistent with your results for the CH1 of the previous data. I made a time vs. raw power plot as well as time vs. Beam-1&2 difference power plot applying a correction factor to match the gain, which look very promising!

The second data file is for over 3h45m. I made the same plots but there are a few periods with a gap in gain difference. I suspect these gaps correspond when the maintenance people moved 70m.

Cheers,
Shinji.

-----Original Message-----
From: Horiuchi, Shinji
Sent: 2013/10/11 Fri 10:08
To: Tom Kuiper
Cc: Soni, Ashish; greenhill@cfa.harvard.edu; Ingyin Zaw; aquib moin; frank briggs
Subject: RE: K-band receiver noise characterization

Tom,

I've just found my silly mistake. For that squarelaw detector measurement I thought I patched IF2 to Pol2-Beam2-Low but that optical link appears to be the one utilised for L2!

So for my data please neglect the IF2 data. The plot for IF1 looks good. That is for Pol2-Beam1-Low.

We've just started both ACME and squarelaw measurement. What we patched today is as below.

ACME IF1: Beam1-Pol1-Low, IF2:Beam2-Pol1-Low (same as last time)

SQ/D: IF1: Beam1-Pol1-High, IF2:Beam2-Pol1-Hight (with BPF 62MHz at 158.5MHz)

Cheers,

Shinji.

From: Tom Kuiper [mailto:kuiper@jpl.nasa.gov]
Sent: Friday, 11 October 2013 5:28 AM
To: Horiuchi, Shinji
Cc: Soni, Ashish; greenhill@cfa.harvard.edu; Ingyin Zaw; aquib moin; frank briggs

Subject: Re: K-band receiver noise characterization

On 10/09/2013 06:34 PM, Horiuchi, Shinji wrote:

Sorry that I was pointing you a wrong file for the example. Please use
other file called 'squarelaw131008_K2_100Hz.txt' in the archive. The one
you plotted was taken during the attenuator adjustment!

Here's the Allan variance calculation. The results are surprising so
please check the code. The crucial thing, I think, is how I calculate
the numbers to put on the X-axis (timestep). It could be wrong in
either this calculation or the ACME calculation, or both, or neither.
Anyway...

If I've done it right, the square law detectors are much more stable
than the power meters.

I just noticed the W2 units. Forget that. It's V2, I think.

If it's true that the square law detectors are more stable, what's
different about the signal path to the detectors?

Anyway, code and data are attached. If your 'site-packages' are
up-to-date the code should run out of the box.

Cheers

Tom

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##

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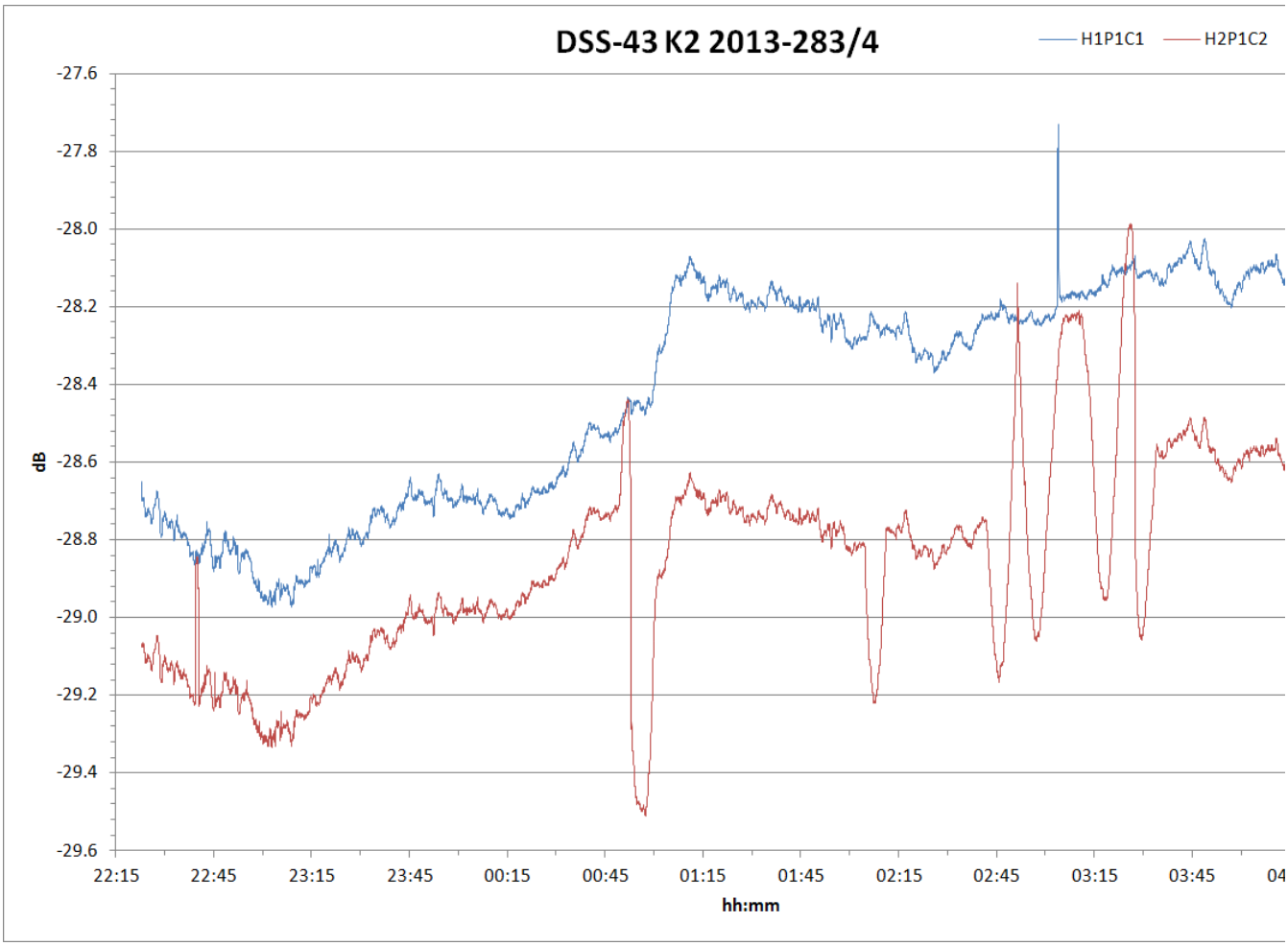

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