

Subject: PUPPI POL B Group delay measurement, now with absolute values
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Date: 11/23/2016 03:28 PM
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Hi Andrew,

I've attached the plot(s) relevant to PUPPI Mixer POL B. As we discussed I'll do POL A next week, probably on Monday, unless my MRI scan raises a conflict.

These data were taken with the signal generators properly sync'd to the house reference, thus removing the previous complete uncertainty in absolute value of the group delay.

You'll mainly be interested in plots #2 & #6, as well as possibly #5, of the file 'tek28_29_mix.pdf'. The remaining files are descriptive of how the measurement was done.

Plot #2 shows the data plotted with associated graticules, with the frequency axes corresponding to the mixer IF output frequency in MHz. The corresponding graticule referred to the input would be the same except that the number labels would be 300 MHz higher.

Note that due to having the generators sync'd, the curve in #2 should properly represent the absolute value of the group delay, not just deviations from flatness.

Plot #6 shows the envelope amplitude in linear voltage format, with a caveat: due to uncorrected slope in the directional coupler used to split off the input signal for the mixer, the indicated flatness is better than the actual.

Note that the ripple with the period of ~50-75 MHz is clearly and severely afflicting the group delay as well. As Phil says, this needs work!

Plot #5 simply shows the curves from the original unsync'd measurement and the sync'd measurement superimposed as a sanity check. Aside from minor differences here and there (mostly due to measurement noise), they are the same.

Enjoy...

Dana

—Attachments:—

Tek28_29_mix.pdf

336 KB

PUPPI_MIX_group_del_meas_TOO.txt	10.3 KB
PUPPI_MIX_group_del_meas_block.pdf	17.1 KB