

MEMO

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PAON2-OptX21cm/13.02.13

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Subject: Summary of Electronic Test Bench analysis at LAL (11&12/02/13)

1 Introduction

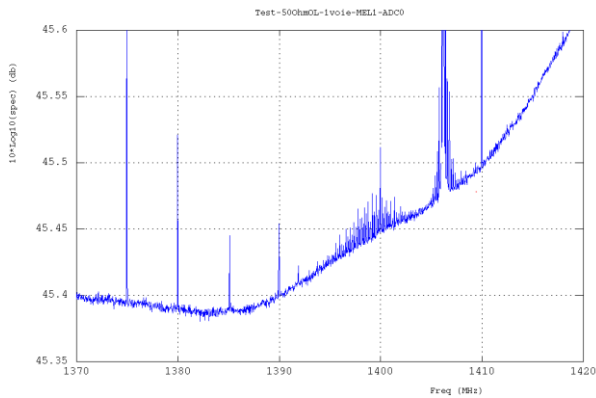
Following the tests of 8/02/13 (ref. PAON2-OptX21cm/08.02.13) a series of systematical cross-checks have been performed. This MEMO summarizes these studies.

2 The setup

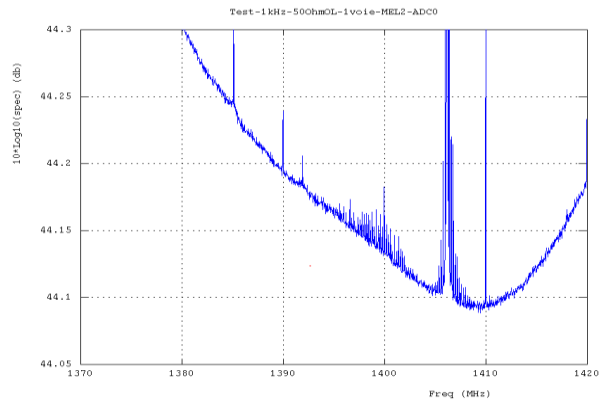
The setup is similar to the one used in PAON2-OptX21cm/08.02.13 but with have restricted the study to OL-mixer and ADC board (ie. no cable).

First, it has been established that the results shown on PAON2-OptX21cm/08.02.13 are stable to switch ON/OFF of the PLL and the problem remains considering the minimal setup 1 single mixer-OL board and a single ADC board.

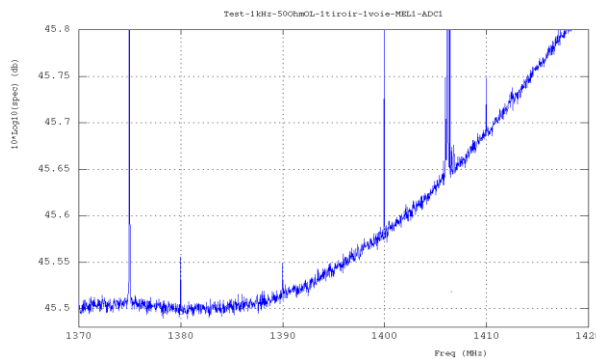
Table 1



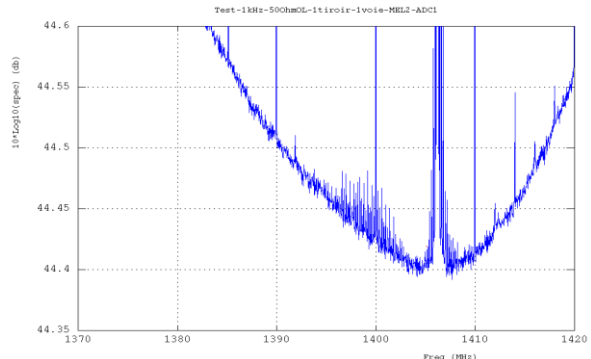
MEL-1 \Leftrightarrow ADC-0



MEL-2 \Leftrightarrow ADC-0



MEL-1 \Leftrightarrow ADC 1

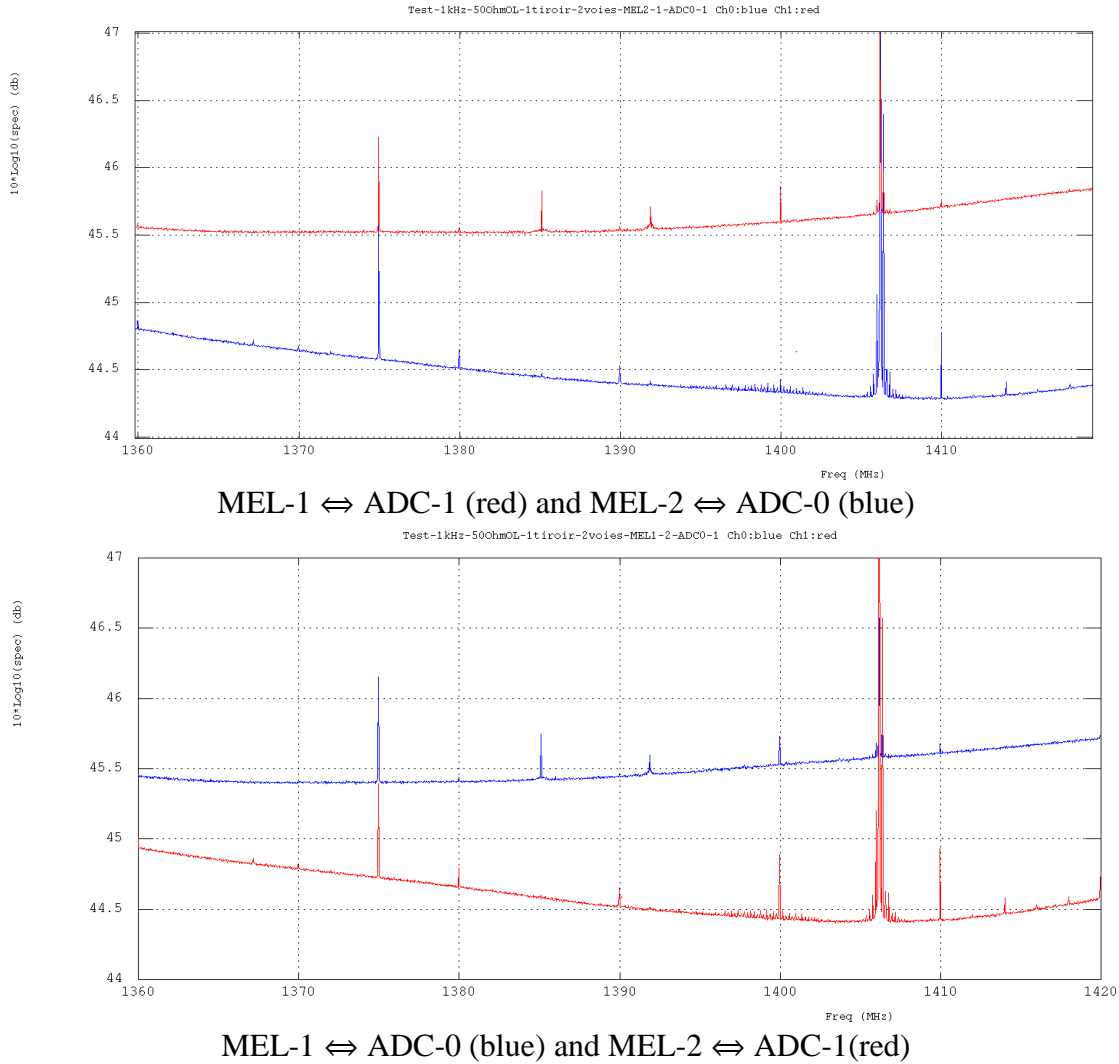


MEL-2 \Leftrightarrow ADC 1

Second, it was used different connection setup between 1 single mixer-OL and ADC boards. In the following MEL-x ADC-y stand for channel “x” of mixer-OL and adc-channel “y” of ADC board (see Table 1). The general shape is function of the MEL channel. It is strange that for MEL-1 the presence of absence of 1400MHz-series of lines depend on the ADC channel while for MEL-2 the lines are always present. This needs confirmation.

Then, analysis was done in a setup mimicking the Amas setup with 2 mixer-OL channels associated one-to-one two 2 ADC separated channels (1 fiber per ADC).

Table 2



The 1375-1380-1385-1390...MHz lines are specific to the ADC channel while the 1400MHz-series of lines and 1406MHz line are more due to MEL channels. Notice that the powerful 1406MHz line is of the order of 5dB in one case and 1dB for the other MEL channel.

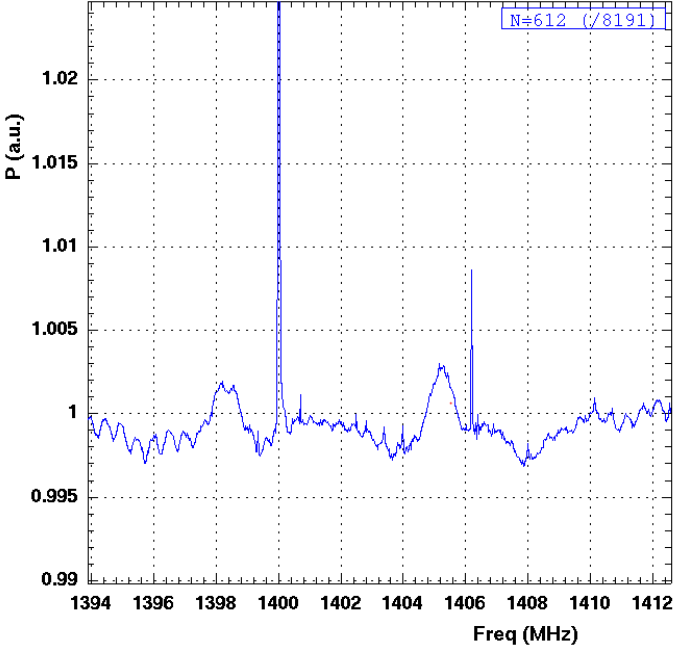
3 Summary & Outlook

The test analyzed in this MEMO show that the problem of 1406MHz composite line as well as ~1400MHz multi-lines depending on the MEL channels, more pronounced for MEL-2 on

the board used. Although, there is a contradiction with MEL-1 data on single channel analysis. As a last remark in the Amas data has shown below (mind the scale which is not dB, we see also the different oscillations/distortions already mentioned on PAON2-OptX21cm/08.02.13) we can see the 1406MHz composite line much more pronounced in on channel associated to the 1400MHz-series of lines.

Table 3

abell1205 840cycles ON/OFFfilt Ch0



abell1205 840cycles ON/OFFfilt Ch1

