



SPIRE Meeting Note

Ref: SPIRE-RAL-NOT-002676

Issue: 1.0

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Notes from telecon to discuss CEA NCR 368 on LIA noise
B. Swinyard

Date:

Telecon took place on 14/6/06 at 16:00-17:00

Present:

Jamie Bock
Viktor Hristov
Hien Nguyen
Bruce Swinyard
Eric Clark
Christophe Cara.

Agenda and Notes:

i) Explanation for the excess noise seen in QM2 at nominal frame rates (Christophe)

It looks as though the results may be wrong because the calculation is being done wrong in the PSD. When the calculation is done using the RMS of the time series the noise appears to be a lot lower. This fits with the analysis of the noise from the instrument testing.

Actions arising:

Christophe make raw data from the QM2 testing available to allow independent assessment of performance

Bruce send IDL code to Hien for calculation of gains in instrument test data

Bruce Ensure tests are carried on instrument to a) evaluate noise versus sampling frequency at fixed detector bias and b) shorted (warm detector) noise is assessed and evaluated versus sampling frequency.

ii) Any updates from CEA on the performance of the flight electronics (Henri)

Measurement done with short circuit on input with 68 Hz sampling gives noise of 7 nV/rt(Hz) this is calculated from the time series RMS noise – this is a different method to before. For the spectrometer channels the value is around 5 nV/rt(Hz). The tests are required to be done at 20 Hz.

Actions arising:

Christophe to circulate results from FM testing asap including short report on noise measurements and results.

iii) System level noise budget and results from instrument level testing (Hien/Bernhard)

There is some confusion still over what the gains and bias levels actually applied are – action under (i) will sort this out.

iv) Effect of excess noise on the in flight performance of SPIRE (Matt/Jamie)

15 nV/rt(Hz) increasing the required time to map an area by 40-50%.

v) Possible mitigation strategies (All)

Not required – we hope!

vi) Disposition of NCR and how to proceed (Jean/Eric)

In principle the NCR will be closed by analysis following the submission of the corrected noise figures from Christophe and a report on the FM performance.