Dear Richard,

You are right; in the last reports I plotted the amplitude for the transmission and reflections, but I used the power coefficient for the calculation of the Overall Loss of Sensitivity, so these curve still valid.
I attached to this document the power transmissivity (S_{21}^2), power reflectivity (S_{11}^2) and emissivity [1-(S_{21}^2+ S_{21}^2)] to see if it agrees with your new data.

In the last simulations, I used a square root scaling model for the attenuation Att=Ao*sqrt[f(Ghz)/640] with Ao=18dB/m. I am using now a linear model for the frequency dependence of the attenuation (Att=0.03*f(Ghz) dB/m) which agrees with the Scott Paine data for frequencies above 500Ghz.

I think that you are using a very high attenuation:
Following the spread-sheet you sent me, you have a loss of 0.9857 at 600Ghz. This means 0.00625 dB on .5mm or 125dB/m which is more than 4 times the Scott Paine loss at that frequency.
I tuned my model to reproduce your transmission data. The tuning process gave an Att=0.2*f(GHz) dB/m, which reproduce the losses that you used on the spread-sheet.

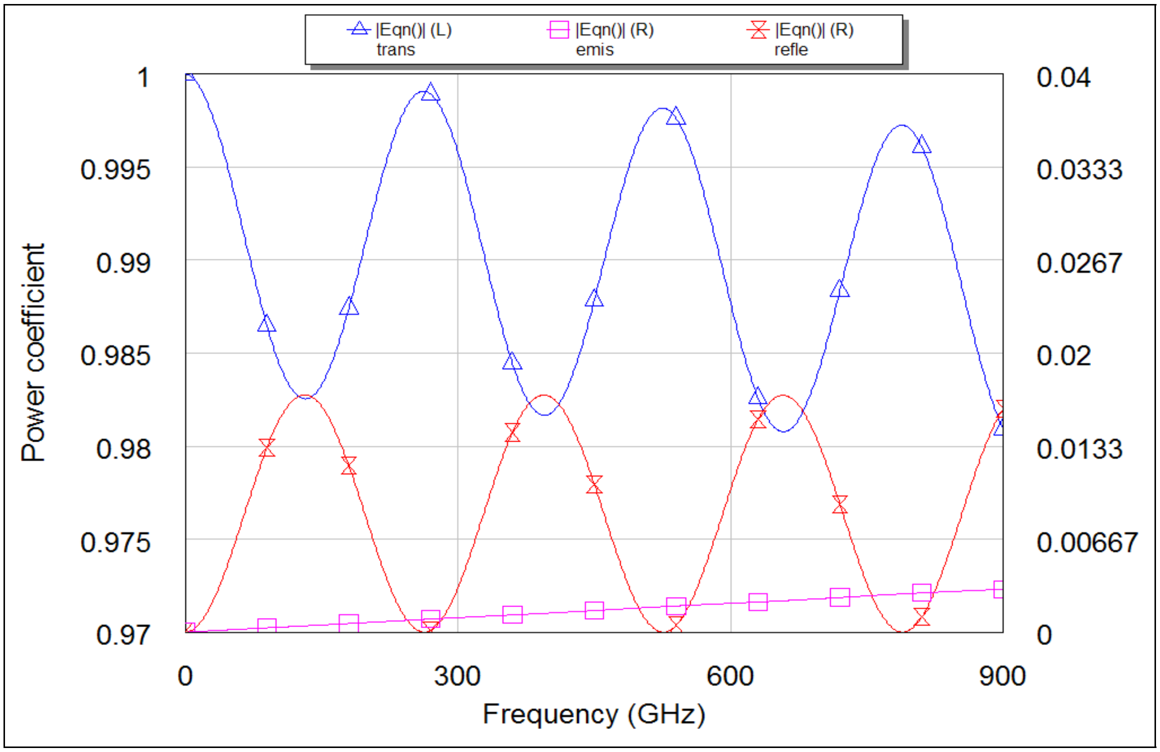
I agree that the ratio of reflections that fall on something warm should be something more like 0.75 than 0.5.

To ensure an accurate estimation of the loss of sensitivity, we have to have accurate data for Tsys over all ALMA frequencies.

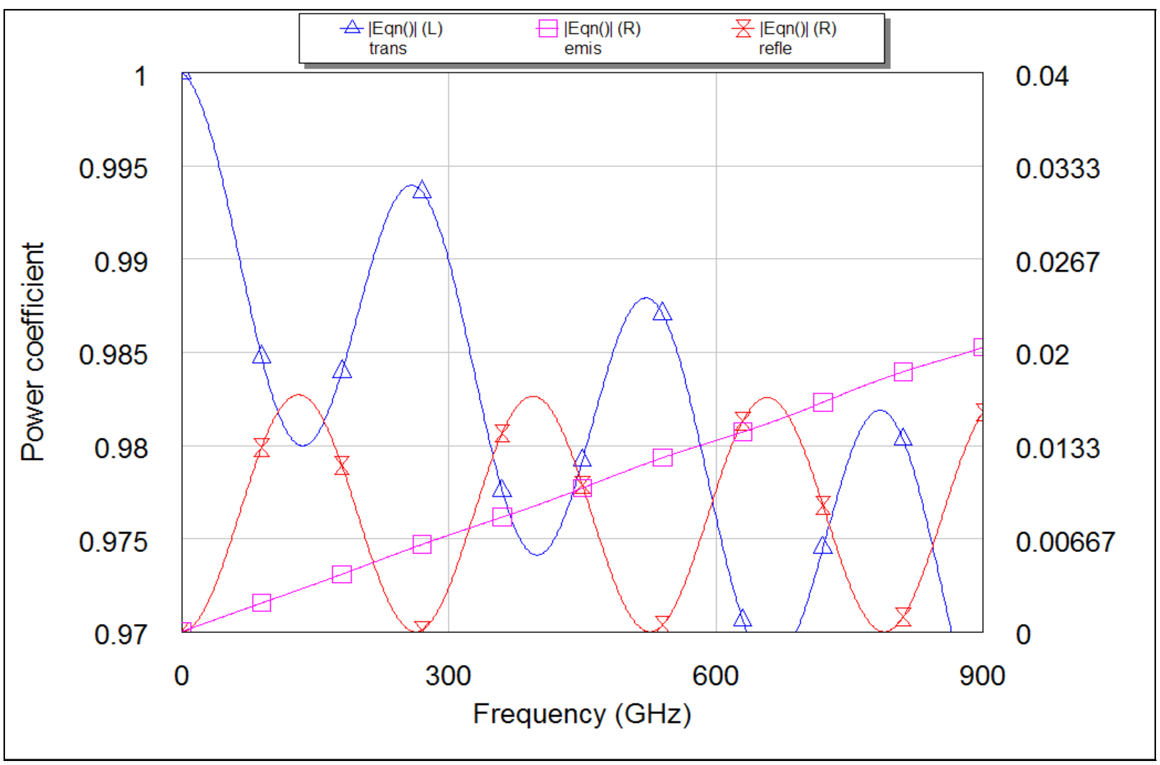
What do you think about the additional term I suggested to include on Tadd to account for the attenuation of the noise from outside the cabin?

Cheers,

Ricardo.



Power Transmissivity (Blue, left scale), Reflectivity (red, right scale), emissivity (violet, right scale) for Er=1.3, L=500um, Att=0.03*f(Ghz) dB/m



Model tuned with spreadsheet data: Er=1.3 , L=500um, Att=0.2*f(Ghz) dB/m