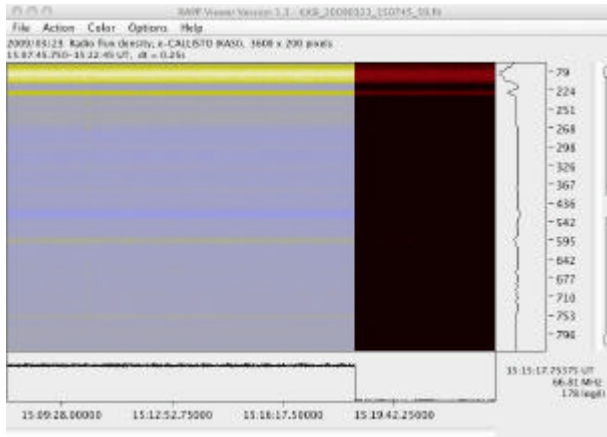


## Callisto Non-Conformance report

On 20.04.2009 Humain reported a strange behavior of their Callisto eC14:  
*We have been using the second CALLISTO that you provide mostly for spectrum monitoring at ROB, with 2 kinds of antenna.*

*We have experienced a series of strange behaviour with it:  
 -First if we let it on for a while it might, in a sense, "lose its sensitivity" as illustrated in figure 1.. This happened several times already. We thought it was linked to our PC since we cannot reproduce this behaviour on another PC.*

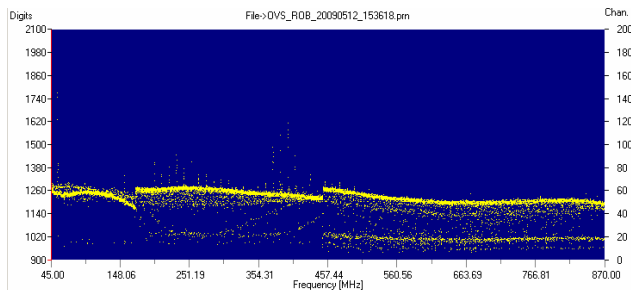
*-However, last week we tried a new antenna (400 MHz-4 GHz, with and without frequency converter). To measure a reference level we put a 50 ohms termination plugged to CALLISTO, (itself plugged on a third PC) and we got some strange results as shown in the powerpoint {nil} curves attached. We repeated the measurements with the 50 ohm termination several times and came up with the conclusion that the behaviour is more or less random,*



*Do you have an idea what we should do to solve the issue, or what should we test?*

Figure 1: sudden decrease in intensity, picture Ch. Marqué, ROB

The instrument was then sent to our lab and, by producing a spectral overview we could confirm a strange behavior. After taking out the electronic board we measured the signal level of the I2C-bus interface. According to specification of Philips the level should be between 3.5 V and 5.0V. In fact the level was about 3.2 V for I2C-data and also for I2C-clock. From rfi point of view the level should be as low as possible to not produce



interference from processor clock via I2C into the tuner. But in this case the I2C level shifter was wrongly designed (R1 and R2 560 ohms, R3 and R4 1 k). In future upgrades or during revisions the resistors R3 and R4 must be changed to 1.5 k to guarantee minimum bus level for Philips tuner.

Figure 2: spectral overview showing decrease in level.