

EC100+CSAT3A noise

Andy and occasionally I have spent a lot of time over the last week tracking down error flags that show up on the CSAT3A data, as seen by the "sonic" LED staying red. Not all the results are consistent, but they generally seem to point to noise originating from the switching AC to DC power supplies that we are using to power the DSMs. I would expect this noise to be at a similar frequency as the sonic acoustic signal (~100kHz).

The noise appears to be mitigated by grounding (to earth) both the CSAT3A head and the EC100 box. Hanging the EC100 on the new mounting plates on a Rohn tower was adequate. However, the Perdigão towers will be painted and paint is even on the ends where the tower sections connect. Thus, I don't think we can expect to be able to get a good earth ground by attaching to the tower (even if we scraped away to bare metal). The only mitigation strategy that I can think of would be either to run our own ground cable down the tower or to attach to the guy wires. (It doesn't seem to me to be a good idea to ground to a lightning suppression cable, even if it exists.) I don't think we can prepare to do this, other than to pack a fair amount of braid. (I have 2 small spools now packed.)