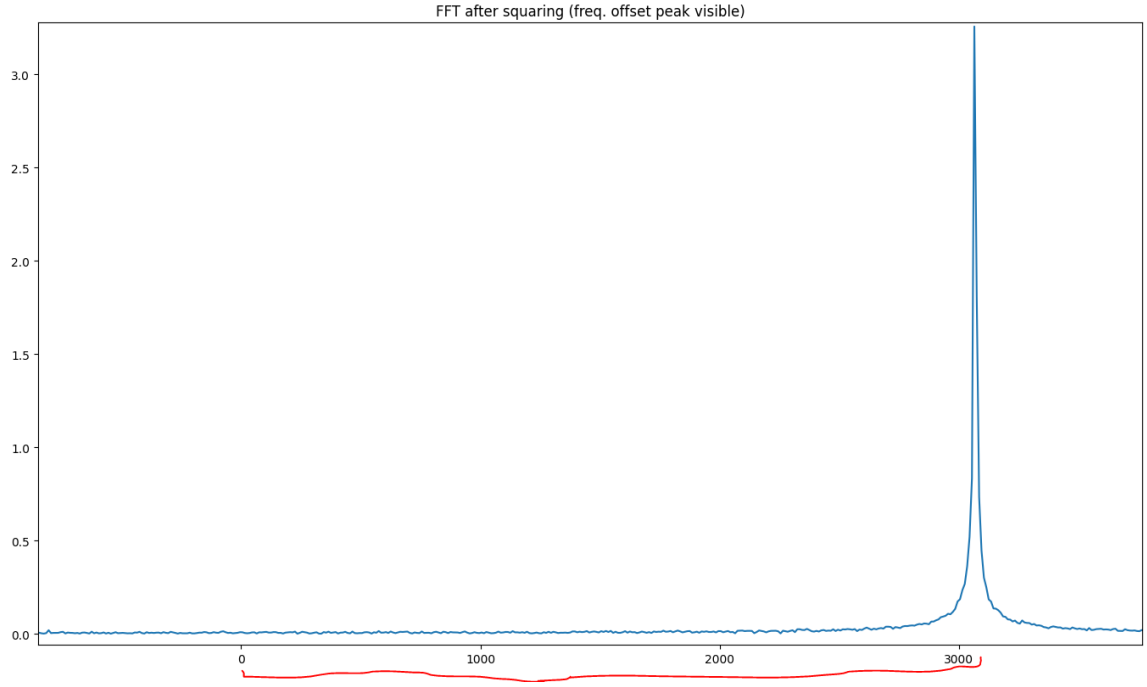
**center_freq = 5.3e9 # Hz**

**Coarse freq. Correction**

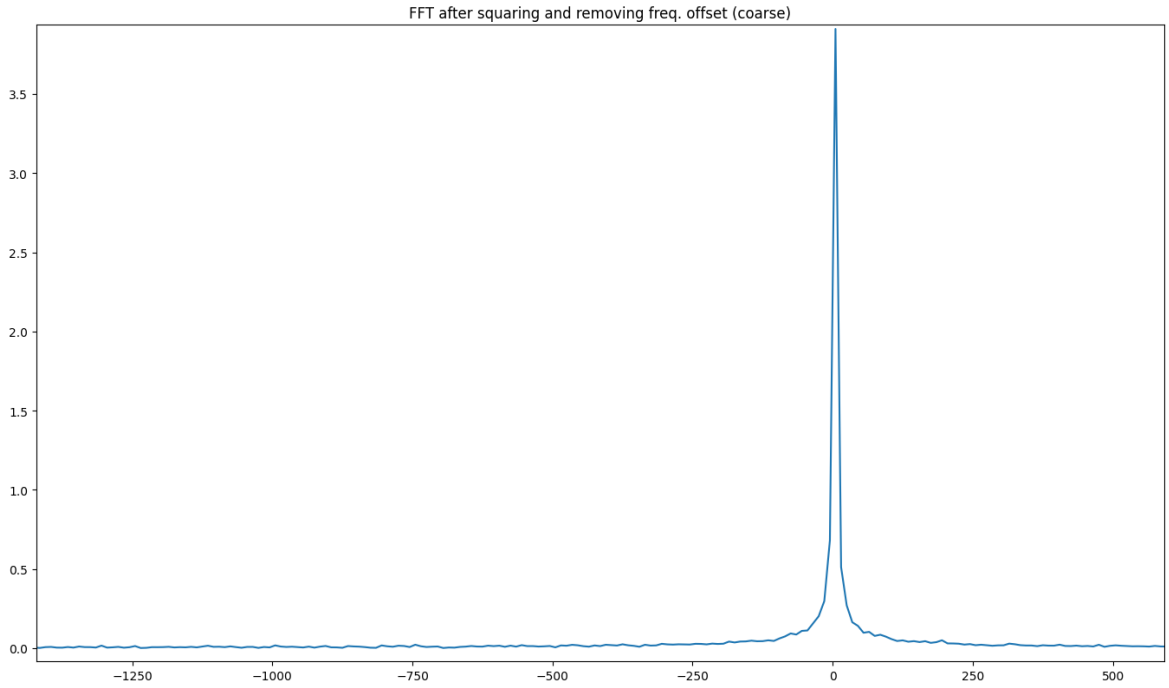
Works fine. Definitely deletes the coarse freq offset. Tried capturing 100000 but only viewing the results for the last 50000.

** However: There might be some hint in the coarse freq offset that might be deleted when we do correction. As the function is able to tell us how much the offset is, it could help just checking the offset difference when the RIS is in low state and when it is high.

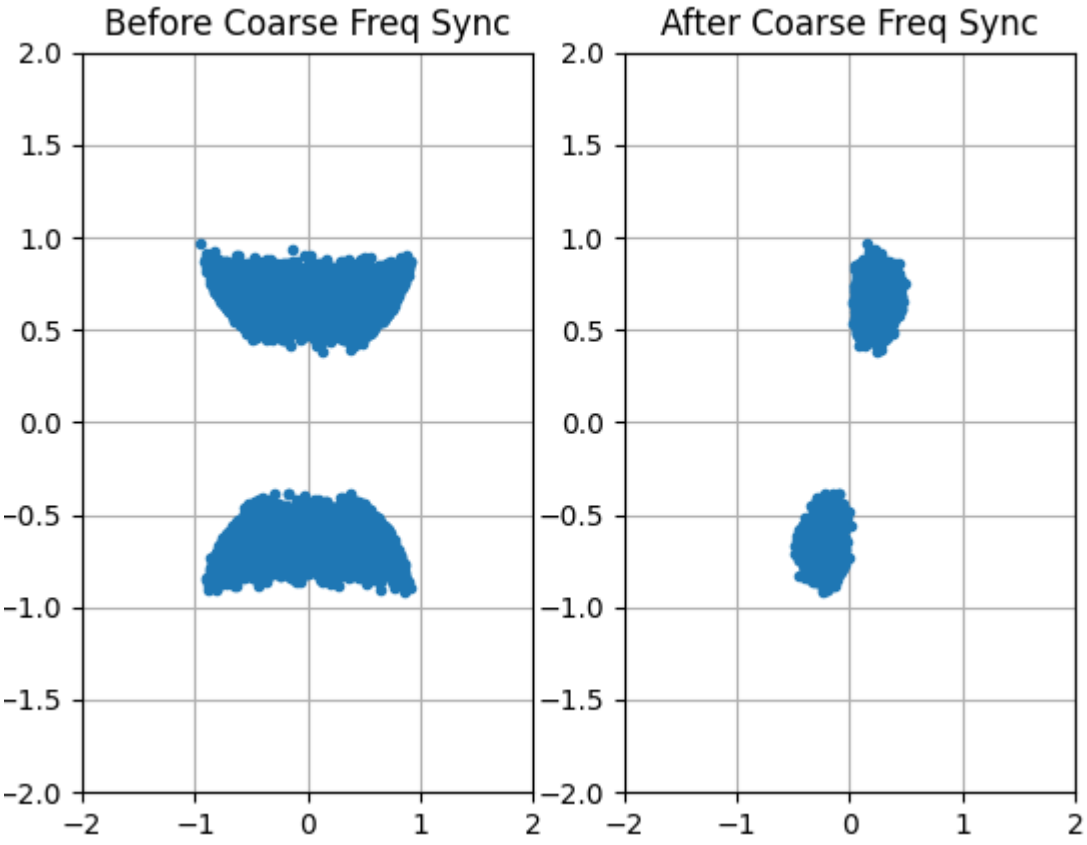
**Initial offset**




**Corrected offset**




Constellation plot (slightly varies time to time depending on samples)




**Time offset correction**

**Forgot to take a screenshot of this one. It seems to be working fine but the parameter k in the function could still be better adjusted if the problems are not as desired. As far as I

saw, values around 0.3 were too weak to make the filter do the correction on time, that's why I set it to 2. k=2 works normally fine, but sometimes causes some instability depending on the sample.

**Fine freq sync**

This is the function that we decided not to use as its error function is based on minimizing the Quadrature part of the signal.