P&S SDR: Software Defined Radio
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1 Introduction

The goal of this P&S project is to receive the DSB[1] of NOAA weather satellites.

2 Hardware

2.1 Antenna Design

We decided to use a simple V-Dipole Antenna over a more complex QFH[2] based on the the article [1] of Adam.

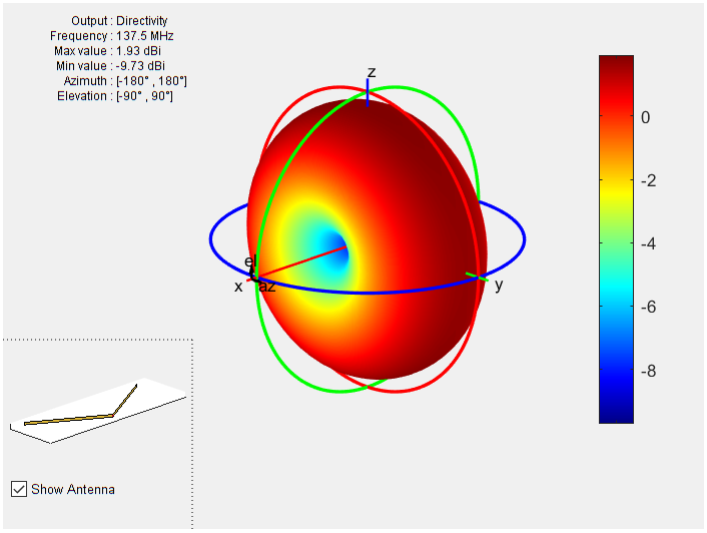

Figure 1: Radiation Pattern

The resonant frequency of the antenna is tuned to 137.5 MHz resulting in a leg length of 53cm. Because of the strength of the signal and the added complexity we decided not to use a Balun[3].

[1] Direct Sounder Broadcast
[2] Quadrifilar Helicoidal Antennas
[3] www.de.wikipedia.org/wiki/Balun

2.2 Software Defined Radio

3 Software

3.1 GnuRadio

3.2 Python

4 Conclusion

[2]

References

[1] Adam-9A4QV, ***DIY 137 MHz WX SAT V-dipole antenna***, 2015 (accessed April 30, 2019). https://lna4all.blogspot.com/2017/02/diy-137-mhz-wx-sat-v-dipole-antenna.html.

[2] J. Nance, ***NOAA POES TIP Demodulation***, 2016 (accessed April 30, 2019). http://wiki.nebarnix.com/wiki/NOAA_POES_TIP_Demodulation.