<https://github.com/youefkh05/Antenna_Design>

Design a 2-element array of probe-fed microstrip patch antenna operating at 20 GHz. Suggest design edits that would increase the bandwidth.

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Course Project Thread

This thread will be dedicated to the course project. I started sending out the project statement which you will find very brief as I will write here the common requirements. But for all projects you are expected to:

Use an EM simulation tool to design the antenna per the specs in the email you got. Your project output should include the following:

1. Verification of EM tool results by benchmarking against another source.

2. Return loss of the designed antenna.

3. The input impedance of the designed antenna on the Smith chart.

4. The radiation pattern (co-pol and x-pol) in the E and H planes.

5. The gain and radiation efficiency of the antenna vs frequency.

6. The more specific characteristic to the antenna in your statement.

7. An equivalent circuit model of the antenna that matches its S11 in the range of interest.

A formal report should be submitted to describe clearly what was done in the project. The report should include:

0. Cover Page (Project title and team names)

1. Introduction and Problem Description

2. Design Procedure

3. Results and Discussion

4. Final Design Layout

5. Conclusion

You can use the examples to make sure you can run the tool and get correct results. If you want to use the example as a starting point for your design, you can mention that in the report

This year's bonus won't be to fabricate the 2-element antenna array, but rather to assess the mutual coupling and gain vs element spacing.

The deadline for project report submission is Friday 27-Dec-2024.