

ABSTRACT

Absorber is a material which can reduce the energy in the electromagnetic wave by reducing reflections. Some applications of absorbers are, as a protection from unwanted electromagnetic waves, material to make room free of reflection, and in tracking radar application absorber can be used to reduce the radar cross section (RCS) of an object to be detected.

In this final project, a discussion on the performance comparison of broadside and s-ring shapes using the Split Ring Resonator (SRR) method as an absorber and their characteristics on C-Band. Both shapes are obtained from the initial shape of a square. The absorber design is carried out using FR4 substrate material with the help of 3D Electromagnetic Design software for simulation. Comparison of performance between the broadside SRR and s-ring SRR shapes as an absorber will be reviewed based on the value of return loss, absorption rate, and bandwidth.

The results show that the broadside SRR and s-ring SRR shapes can be used as an absorbers at C-Band at a frequency of 5.8 GHz. The broadside SRR shape produces an absorber with an absorption rate of 99.618% and a bandwidth of 0.067 GHz with dimensions of 7x7 mm. While the s-ring SRR shape produces an absorber with an absorption rate reaching 99.99% and a bandwidth of 0.063 GHz with dimensions of 7x7 mm. From the results of the characterization, it can also be seen that changes in patch length variable and resonator thickness in the broadside SRR and s-ring SRR shape are the most affected changes in the resonant frequency value and the amount of bandwidth produced.

Keyword: *Absorber, Broadside, S-Ring, Split Ring Resonator, C-band*