

ABSTRACT

Electromagnetic wave absorber is a material used to absorb the power of an electromagnetic wave. Absorber can create a room free of reflection of electromagnetic waves and has been widely used in various applications to eliminate unwanted electromagnetic wave radiation that can interfere with the operation of a system.

In this final project, the S-ring absorber and axially symmetric SRR are designed with the approach method using square patch dimension calculation, the designed absorber is then analyzed. The analyzation is done to the dimensions and their effect on absorption response based on return loss, bandwidth, and changes in resonant frequency in the C-band. Analysis of the dimensions is done by characterizing the variables in the design dimension. Characterization is done by changing the dimensions of one variable linearly, with the size of the other variables remaining the same. Then the effect on the absorption response is observed.

From the designing process that has been done, the two absorber that has been designed has a resonant frequency of 5.79 GHz, with the size of one s-ring cell of 7x7 mm and has a bandwidth of 0.0726 GHz. While the symmetrical SRR cell size that has been designed, has a cell size of 19.67 x 19.3 mm and has a bandwidth of 0.0646 GHz. From the results of the characterization, it can be seen that the size of the substrate and the size of the resonator affect the bandwidth directly. While the resonant frequency is only determined by the variables on the size of the resonator and not significantly effected by the substrate thickness and length of the substrate.

Keyword: Electromagnetic Wave Absorber, Absorber, Split Ring Resonator, Axially Symmetric SRR, S-Ring.