

ABSTRACT

Research on electromagnetic wave absorbers has experienced rapid development in recent years. Absorbing electromagnetic waves has a role in reducing electromagnetic wave interference by absorbing incoming wave energy and reducing unwanted reflections. Surface textured technology is a technique used in realizing electromagnetic wave absorbers that have high absorption rates. In principle, this technique uses an AMC (artificial magnetic conductor) layer with high surface impedance characteristics. By simulating on CST Microwave Studio software using FR4 Epoxy substrate with a dielectric constant of 4,3 will be compared to the absorption rate represented as return loss (S11) by performing patch variations, substrate dimensions and gap gap between patches for all three patch forms circle, octagon and square with a working frequency at 3 GHz. Addition of resistive elements makes absorption rates better when compared to resistive elements.

The simulation results show that the absorbent in the form of a square patch that works at a frequency of 3 GHz has an S11 value of -35,578 dB by adding 600 ohm resistor elements. In electromagnetic wave absorbers with octagonal patch form that works at a frequency of 3 GHz has an S11 value of -46,374 dB with the addition of an 800 ohm resistor element. In absorbing electromagnetic waves with a circle patch form that works at a frequency of 3.01 GHz has a S11 value of -37.204 dB with the addition of a 700 ohm resistor element.

Keywords : Absorber electromagnetic waves, metamaterial, Artificial Magnetic Conductor (AMC), textured surface Technology, patch, resistive element