

ABSTRACT

A simulation design for electromagnetic absorber is in 3 and 5 layer at frequency 5,605 GHz until 6,195 GHz. This simulation uses matlab with numeric closer which the purpose is getting the medium parameter (μ_r , ϵ_r , σ and thickness) that match for produce the minimal total percentage of reflection and the minimal total percentage of direction in 3 layer and 5 layer.

The frequency which is used in this simulation is 5,9 GHz that means the center frequency from 5,605 until 6,195 GHz. The range of medium parameter in this simulation is $\mu_r = 0,9998$ till 7000 , $\epsilon_r = 1$ till 12 , $\sigma = 10^{-17}$ till $6,1.10^7$, and minimum thickness at each layer is 1 mm, whereas the total thickness of medium is 1 cm.

The result of simulation can be got for 3 layer that is the first layer ($\mu_r = 0,999992$; $\epsilon_r = 11$; $\sigma = 0,0176$; thickness= 3mm), the second layer ($\mu_r = 5170,6$; $\epsilon_r = 3,3$; $\sigma = 89652$; thickness= 4mm), and the third layer ($\mu_r = 0,999992$; $\epsilon_r = 11$; $\sigma = 0,0176$; thickness= 3mm). For the five layer is the first layer ($\mu_r = 1,00099$; $\epsilon_r = 6$; $\sigma = 0,001$; thickness= 2mm), the second layer ($\mu_r = 1,00097$; $\epsilon_r = 7,2$; $\sigma = 0,0119$; thickness= 2mm), the third layer ($\mu_r = 2616$; $\epsilon_r = 3,5$; $\sigma = 26995$; thickness= 2mm), the fourth layer ($\mu_r = 1,00097$; $\epsilon_r = 7,2$; $\sigma = 0,0119$; thickness= 2mm), the fifth layer ($\mu_r = 1,00099$; $\epsilon_r = 6$; $\sigma = 0,001$; thickness= 2mm).

Key Word: *simulation, electromagnetic absorber, 5,605 GHz until 6,195 GHz*