

ABSTRACT

Currently software electromagnetic field simulation tool has many outstanding. Most of the software used by engineers to design and analyze a variety of electromagnetic fields devices including an antenna. The use of software to support the academic system and its ability to design and analysis is needed in the realization of an antenna system. One of them is HFSS (High Frequency Structure Simulator) is used as processing aids in this final task.

Simulation and analysis of this final task will be more emphasis on the trend of changes in mutual impedance parameters and radiation patterns of dipole array structure $\lambda / 2$ side by side with the distance of each element $\lambda / 2$ using HFSS V10 software to increase the radius dimension $\lambda/200$ antenna, $\lambda / 125$ and $\lambda/60$. Before a simulation of the antenna array, the first conducted verification tests on the data of a single dipole simulation $\lambda / 2$ thin linear. Simulation results are analyzed to obtain conclusions about the justification of the specification of the antenna design and materials used as a comparison with the basic theory and then made reference to the development of dipole N-array antenna.

Research the thickness of the radius of dipole antenna showed that the use $\lambda/200$ radius produces the closest value of the impedance parameters. While research dipole antenna array $\lambda / 2$ shows that with the increase in the radius dimension dipole the self and mutual resistance of the resistance at a distance of $\pm n\lambda$ ($n = 1,2$) of the reference antenna has a trend to rise. While mutual resistance at a distance of $\pm n\lambda / 2$ ($n = 1,3,5$) had a trend down. In the radiation pattern parameters, the changes increase the radius of dipole do not experience significant changes in both form and intensity.