

ABSTRACT

Currently, the most widely used energy source is fossil fuels. The availability of fossil fuels over time decreases and in the future fossil fuels will run out. To overcome this, a substitute energy source is needed that can replace fossil fuels. One solution is to energy harvesting. In this study, the authors designed a bowtie array antenna at a frequency of 2.6 GHz for energy harvesting. The array method used aims to increase the antenna gain. The simulation used is AWR Microwave Office 2009 software. The standard specifications that must be met are VSWR 1-2, Return Loss < -10 dB, gain > 4 dB, and *bandwidth* > 100 MHz. The type of substrate used is FR-4 Epoxy with dielectric constant (ϵ_r) = 4.3, substrate thickness (h) = 1.6 mm and loss tangent = 0.0265. With the simulation results of the 140 mm x 130 mm bowtie array antenna design with the Return Loss value of -20.11 dB, VSWR 1.722 and gain 8.003 dB, and radiation pattern with omnidirectional shape.

Keyword : Energy Harvesting, Antena Array Bowtie Dipole, return loss, gain, bandwidth