ABSTRACT

Antenna is a transition form which used to match the intrinsic impedance of propagation space with characteristics impedance of transmission line. In this final project, wide band antenna was applied. It is Unidirection Pancacula Antenna balanced on binomial in frequency 0.3 GHz - 3.0 GHz using SMA England Feed. This antenna was consisted of five monocula antennas which could obtain the radiation pattern that radiates into one direction or unidirectional using the 90 ° of England Feed likes monotriangular.

From the result of the measurement has been done, commonly the result obtained which close from scheme specifications, at the range frequencies of 0.6078 GHz - 2.8106 GHz that obtained VSWR \leq 1.5. The averrage of Antenna impedances obtained from measurement was (46.9 + j3.2) Ω which close with terminal coaxial impedance 50 Ω , unidirectional radiation pattern, polarization which close with linear polarization (ellipse), obtained gain 4.823 dBi at frequency of 1.650 GHz.

At this final project the software for radiation pattern simulation of unidirectional Pancacula balanced on binomial and determine impedance, bandwidth, gain, and radiation pattern had been made using Matlab, and also has been simulated using Ansoft HFSS 9.2. From the result of simulation has been analyzed the characteristics of Pancacula Antenna, and then can be resulted value of impedance which is influenced by the stage of binomial transformator, and also gain of antenna that is influenced by antenna length (ℓ) and spacing between lead (d). Matlab simulation results have been compared with Ansoft simulation results, the two results are close to the scheme specification of the Pancacula Antenna.

Keywords : Binomial, Unidirectional, Pancacula, Monotriangular