ABSTRACT

Indonesia has a very large area, so we need a system that can protect its sovereignty. Electronic Support Measure (ESM) is an electronic defense equipment that functions to receive electromagnetic wave signals emitted by objects, then the signal is processed and analyzed in order to obtain location, signal strength and other parameters.

ESM requires antenna support with a frequency range of 2 - 18 GHz. In this final project, the Rectangular Monopole Antenna is designed and realized using the trident shaped-feed method at the C-band frequency (4 - 8 GHz). The substrate used is from FR4 material which has permittivity (εr) 4.4 using the microstrip feed line feeding technique. For the determination of antenna dimensions before realization, a theoretical calculation and optimization process is carried out using the software.

After carrying out the realization using the trident shape-feed method, the measurement results were obtained at a center frequency of 6 GHz, a VSWR value of 1.5518, a return loss of -13.320 dB, and a gain of 4.58 dBi. As well as the radiation pattern of unidirectional and elliptical polarized antennas. With these specifications, this antenna is suitable for use in Electronic Support Measure (ESM) devices.

Keyword : *mikrostrip feed line , Electronic Support Measure, monopole.*