

ABSTRACT

Nowadays, many countries in the world are realizing the advantages of electronica warfare (EW) and their need for a country, including Indonesia. One application of technology that can be used to fulfill these needs is a radar system that has the ability to detect and manage the emission of electromagnetic waves around it.

In this final project, will be designed and realized antenna for passive radar system on ESM (Electronic Support Measure) technology. The working principle of this antenna is receiver only. In this technology, an antenna works at high frequency and wide bandwidth, has a proper gain and transmit pattern.

The antenna that was designed in this final project has two parts, the upper part which is the semi-circular ring antenna and the bottom part which is linearized cone antenna. This antenna has Ultra Wide Band (UWB) characteristics and has omnidirectional radiation pattern. Which is require for ESM technology.

The prototype is made by simulation modeling using CST Microwave Studio software and produce 2 antennas that work in 0.5-6 GHz and 6-12 GHz. The result in this measurement is having $VSWR \leq 2$ in 0.5-6 GHz with the value of gain is 3.23 dBi in 3.25 GHz, 2.2 dBi and 1.19 dBi in 6 GHz, and 1.97 dBi in 9 GHz. The radiation pattern of this antenna is omnidirectional.

Keywords : ESM, Ultra Wide Band, Omnidirectional