

ABSTRACT

UWB antenna lately is prominent in the world of modern wireless communication systems, mainly due to several factors such as high data rate, the ability to operate at various frequencies, as well as power consumption and low cost. In this final project is designed and realized for monitoring radar antenna to support ESM (Electronic Support Measure) technology. To support the technology urgently needed an antenna that can operate on standard Ultra Wide Band frequencies. Nevertheless, the need for an antenna that can meet the requirements and able to operate on the ESM and radar frequency range, so the antenna must has a precise gain, transmit the appropriate direction, and accurate.

UWB antenna that I designed in this project is a biconical shaped antenna. Biconical antenna is widely used in a variety of applications due to wide bandwidth input impedance and omni-directional radiation pattern. However, biconical antennas usually have a three-dimensional structure and relatively difficult to build. A type of biconical antenna is a monocone antenna that has wideband coverage and substantial to developed in the commercial sector, military radios, radio scanners and applications. Inherent characteristic of monocone wideband antenna allows it to broadcast artificial unwanted emissions from a defective transmitters or that are not filtered properly.

Prototype made in accordance with the modeling simulation using CST Microwave Studio and the results obtained in the measurement frequency for VSWR is 1,579 and the gain achieved in this thesis is a 8,153 dBi, which is the frequency range (2-8) GHz. The antenna radiation pattern is omnidirectional.

Keyword : Ultra-wideband, biconical, omnidirectional