ABSTRACT

RADAR Technology is an important and developing technology. This RADAR Technology has function to detect, that can respectively used in surveillances and security in Indonesia. One of many areas which must being secured and supervised by using RADAR is coastal areas, specially that are located at the farthest islands of Indonesia. By applying this technology, the works of surveillances and security in those area could be well-implemented and effective. And one of many parts in RADAR that is Antenna. The Antenna can distribute the signal to detect the existing of objects or materials at certain distance.

This Final Task be entitled *"Design and Realisation of Rectangular Patch Array Microstrip Antenna for Coastal Surveillance Radar at S-Band Frequency by Perpendicularly-Folded Feeding"* explains about the making of Antenna by using perpendicularly-folded feeding (combining probe coaxial and microstrip line feeding technique) in rectangular patch array antenna. This Final Task used CST Microwave Studio 2010 to design the model.

The measurement results from this research is the rectangular patch array antenna that works at S-Band frequency for Coastal Surveillance RADAR application. And then, the antenna also completed by analysis that the antenna works well in 2,97-3,03 GHz, with VSWR < 1,5, bandwidth ±60 MHz, and gain >6 dBi.

Key words : Microstrip Antenna, Coastal Surveillance RADAR, Bandwidth, Perpendicularly-Folded, S-Band