

ABSTRACT

The ability of the human eyes as one of the important senses are limited. An Ordinary human sight distance is not more than 100 meters. If there is bad weather, such as fog, the visibility will decrease dramatically. The equipment can also as use as an 'eyes' but uses radio waves emitted in the world known as Radar. Radar is an acronym for radio detection and ranging (detection and outreach through radio waves). Radar could act as 'eyes' that can 'see' objects in the distance. Information of an object distance of Radar position and speed of the object can be obtained from the Radar. Although bad weather such as heavy rain and fog, radar can penetrate bad weather and able to see distant objects. In addition to these capabilities, radar can see objects at great distances (hundreds of Km). Due to the capabilities and advantages, Radar is widely used to view objects in the air and at sea on a very wide coverage area (radius of tens to hundreds of Km).

At the Final Project be entitled Design and Realization of 8 rectangular patch array microstrip antennas at 2.9 to 3.1 GHz's Frequencies for Coastal Surveillance Radar Application. Microstrip antennas work on S-band frequency ($f_c = 2.9$ to 3.1 GHz) with $VSWR \leq 2$ and gain 9 dbi, with the desired bandwidth of the specification is 200MHz. have a radiation pattern Unidirectional and linear polarization that expected give best performance to support in a variety of radar applications. Manufacture of radar is also in the underlying demand for X-band radar is too much, so it started to switch to S-band, and it is give lower cost. Design method at the end of the project is calculated using the equation to find the dimensions of the antenna. Furthermore, in designing using software as its simulator.

The results of microstrip antenna are for Coastal Surveillance Radar Application, not only observed about the quality of narrower horizontal beamwidth, but also to get the greater antenna's gain improvement and phase repairment.

Key words: *microstrip antenna, Coastal Surveillance Radar Application, the frequency of S-Band*